As of 25 Jul 2016

Air University -- Prioritized Research Topic List

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
1	Exploitation of commercial and international space capabilities to conduct military operations	The portfolio of space capabilities available both commercially and internationally is growing rapidly, particularly in remote sensing and satellite communications. For example, commercial entities are exploiting small satellites to deliver persistent high-resolution imagery and full motion video. In satellite communications, numerous companies are planning to blanket the world with communications services that provide fiber-like throughputs. In the context of information dominance, access to these growing capabilities is critical to military operations. Moreover, potential adversaries will also be capable of using these resources. The current DoD policy landscape may present challenges in exploitation of these resources due to security implications and inflexible procurement rules. In light of these challenges, the following issues require investigation: Will capabilities indigenous to the United States and those of close allies be sufficient to deliver the required space capabilities to achieve information dominance in support future military operations? How can the elements of national power (diplomatic, informational, military, economic) be used to ensure access to emerging foreign space capabilities while denying them to potential adversaries? How can the use of foreign space capabilities be balanced with the risk of dependence on them?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
2	Unity of Effort for National Security Space	There has been recent movement within the Department of Defense and Intelligence community to explore some level of space operational integration to better posture the United States to fight a war that could extend to space. Paper should explore such concepts as: - What is the implied requirement/benefit of integration? - What levels of integration should be on the table (ranging from information sharing, to a single, unified commander for all DOD/IC capabilities) - Is there benefit to including commercial, civil, allied participation in the concept? - What level of integration would be appropriate for commercial, civil, allied participation? - What authorities would be required to implement the concept? - What would be the downside to this type of integration? - What would be implications to PPBE? - What would be pros/cons from a terrestrial warfighting perspective--would air/land/maritime domains benefit or be harmed from this concept? - What are the greater geopolitical implications for operational integration? Would this notion drive an adverse reaction among other states? If commercial/civil/allied were included, would that change the geopolitical reaction? Would allied integration serve as a deterrent to aggression against the US or US space systems?		7036935838	HAF/A3S	Washington	TODD.W.GOSSETT.MIL@MAIL.MIL	Todd	Gossett	Colonel
3	Operational Contract Support (OCS)	OCS is a critical component of total force capability. Across Defense components and functional areas, we share responsibility for OCS readiness. A plan must be implemented to shape the work which must be done for the joint force to depend on OCS throughout the range of military operations. OCS spans numerous functional areas and all phases across operations. It can be a decisive factor in major combat operations; irregular warfare; and stabilization, reconstruction, and transition missions. Listed below are attributes which may assist in an effective implementation of OCS: - OCS comprises the planning, synchronization and integration of contracted support, contractor management, and contracting in a geographical combatant commander's theater, and when directed in a joint operations area (JOA). - The overall result will be more responsive, effective, and accountable contracted support to the Joint Force Commander (JFC). - Leaders must routinely consider the risks, benefits and implications of contracted support when planning, executing and assessing all phases of operations. - Commanders will operate in a future security environment characterized by constrained military budgets, reduced uniformed capability and capacity, economic uncertainty, and increased competition for resources. - This concept proposes OCS as an essential part of an affordable force mix where contracted support will be rapidly integrated into military operations and will be as accountable and responsive as military forces. - OCS JC solution framework will significantly provide benefits via a reduced military footprint; optimized capabilities with increased cost consciousness; more agile transitions between operational phases; improved operational risk assessments and mitigation measures associated with contractor support; improved requirements management; improved contract management planning; more responsive contracting; and greater accountability in managing contractors and the associated financial processes. Research Goals: 1. Develop and explore ideas for the need for OCS, while obtaining buy-in from USAF leadership and functional areas that this is a total force issue. 2. Advantages and disadvantages of OCS implementation. 3. Implementation of an affordable mixture of functional resources operated within a financially constrained environment. A fully supported recommendation on implementation amongst all functional areas of the USAF. 4. Develop recommended DOTMLP-F (doctrine, organization, training, materiel, leadership and education, personnel and facilities) changes to institutionalize OCS in the AF. 5. How an OCS planner is developed and what constitutes an effective OCS planner.	260-2400	571-256-2400	SAF/AQCX	Washington	melissa.j.applegate.civ@mail.mil	Melissa	Applegate	Chief, Contin/Frc Mgt Div
4	Future High-Low Weapons Mix -- Capability/Quantity Optimization	Future Anti-Area/Area Denial (A2/AD) scenarios stress current tactical reconnaissance-strike capabilities to meet campaign objectives. Successful future counter-A2/AD capabilities will likely involve an optimized mix of capabilities that are manned and unmanned, stealth and EW, stand-off and close-in, as well as precision and wide-area in nature. Key drivers in these scenarios include: a large anticipated target set, costs associated with fielding and stocking new weapons systems, and the necessity to attack across the enemy A2/AD kill chain in time and space. Given these drivers, developing, procuring, and employing the optimal mix of munitions becomes critical. In the munitions area, various future concepts include hypersonic air-breathing cruise missiles, tactical boost glide weapons, supersonic cruise missiles compatible with F-35 internal carriage, GBU-X, swarming hunter-killers, and more. This proliferation of potential munitions types creates a conundrum of determining what would be the best mix to pursue and in what quantities based on reasonable price points. The purpose of this study would be to explore the tradespace of future weapons mixes to identify the most promising in terms of types, quantities, and costs so as to better guide S&T and RDT&E investments that produce a viable counter-A2/AD capability at an affordable overall cost. Short of that, identification of the salient analytical characteristics (most insightful measurands, proper scenario vetting/selection, sensitivities, etc.) would be highly useful.		937-656-2808	AFRL/RQ	WRIGHT PATTERSON AFB	arthur.huber@us.af.mil	Art	Huber	Col
5	Operationalizing the Combat Cloud	Determine future Combat Air Force capability requirements and employment considerations to support the full range of military operations		757-225-8371	HQ ACC/A3	JBLE	acca10oOperations@us.af.mil	Russell	Vieira	Mr.
6	What are the Air Force's counter-small unmanned air system strategy and regulatory approaches, and how can they be improved?	The objectives are to: 1) describe the Air Force's current strategy and regulatory approaches in an area with fast-breaking technology and a growing, but uncertain threat, and 2) propose approaches that account for likely technology changes, and domestic (local, state, federal), foreign, and international law. [Primary POC: Mr. Charlie Williamson, SAF/GCI, 703-693-9292, charles.w.williamson12.civ@mail.mil]		703-697-0883	SAF/GCI	Washington	craig.a.smith5.civ@mail.mil	Craig	Smith	SES, Dep. General Counsel
7	Innovative cyber resiliency approach	Electronic devices are susceptible to malicious manipulation. The manipulation could disclose, deny, deceive, disrupt, or destroy the electronic device or anything the device is connected to. Existing solutions to protect electronic devices from the outside using a multi-layer defense approach but not the inside. Consider applying systems engineering processes and appropriate confidentiality, integrity, and availability levels to achieve cyber resiliency from an inside out perspective.		703-697-0447	AF/A5R	Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ

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8	Air Force Logistics Numbered Air Force	Enhancing AFMC Contingency Planning, Execution, Monitoring, and Control processes for more effective warfighter support" was submitted for study by RAND in 2015 and in 2012 requested a study on topic: "Reducing Risk in Operational Planning: Recognizing ACS Enterprise-Level Capabilities or Constraints and Resource Allocation Impacts." For 2016 we submit this topic as a next step. Description is a single Air Force (AF) entity that links the Logistics enterprise and provides responsive, well integrated and intelligent end-to-end Logistics Command and Control (LOG C2), across all classes of supply (total asset visibility), with intelligent and operations C2 interoperability, to deliver combat power globally, using a common operating picture. This issue is a current and enduring concern to AF senior leaders who see centralized command, distributed control, and decentralized execution as key to conducting joint operations today, in the future and understand we need to advance our C2 capabilities. Strategically, by 2035 at the operational level, AF C2 forces are planned to organize around a multi-domain operations center and the AF LOG NAF can evolve to be that center and provide the tools necessary to exercise a dynamic C2. Also, the Chief of Staff , Air Force (CSAF) has said "Unless we get better tools in the hands of our logisticians we will not WIN in highly contested and denied environments where distributed and "lilly pad" operations will be the norm. To meet the Air Force strategic guidance, the AF Logistics Board identified the AFSC/CC lead for "Multi Domain LOG C2" Capabilities and inclusion as a "top four" priority in the FY19 Planning & Programming process (CFSPs and POM). The AFSC/CC's initial assessment is that an organization and infrastructure, which does not exist today, is needed to evolve the capability as a global Logistics enterprise and this topic is the vehicle to reach what is now AF and AFMC strategic objectives. The Log NAF concept is crosscutting and aligns with AF Strategy and links to four of the five strategic vectors that identify priority areas for investment, institutional change, and operational concepts. For example, vector 2 (Global ISR): LOG NAF (C2) will receive and assess intelligent information and present best supportable options to ops to employ agile multi-domain solutions. Vector 3 (Full-spectrum capable force): The LOG NAF (C2) adds the agility and resiliency to Logistics and sustainment to provide capability across the spectrum of operations from humanitarian relief to full scale conflict. Vector 4 (Multi-Domain Approach): The Log NAF (C2) will integrate and employ capabilities operating in or through the cyberspace and space domains in addition to air capabilities. Vector 5 (Game-Changing Tech): The LOG NAF concept in itself is a game changer and will drive radical improvements in technology. That, when combined with the new approaches and organizational change, will expand or amplify the enduring effects that underpin our advantages in air, space, and cyberspace. The topic task is to deliver an "Employment Concept," which should include critical capabilities, enabling capabilities, transition from peace time ops to combat ops in multi-domains and disengagement. In addition depict Logistics NAF end state with IT architecture and interoperability with mission partners (joint, industry, etc.). The study should also inform senior leaders if a Logistics NAF is the best organizational structure, as a single entity (centralized C2), to provide intelligent end-to-end LOG C2, across all classes of supply to effectively support the warfighter. There are several disparate AF efforts addressing this topic via concept of operation papers, but no one is doing a study that will shape the entire enterprise. The Air Force is challenged to investigate and conduct studies of this magnitude, because the concept is crosscutting and tools and expertise (corporate knowledge) needed are not organic to any one entity in the Air Force. The commitment of time	339-7008	405-739-7008	AFSC/LGX		joseph.betsill@us.af.mil	Joseph (Tony)	Betsill	
9	Cyber Key Terrain for the Joint Force commander	what is it, how do you seize or defend it?		703-695-5426	AF/A3CO/A6CO	Washington	michael.p.mahan3.mil@mail.mil	MICHAEL	MAHAN	Lt Col
10	Military Operations and National Policy for Cyberspace	identify gaps and challenges in our nation's approach to using cyberspace for military operations and policy recommendations to improve our ability to defend the nation		703-695-5426		Washington	michael.p.mahan3.mil@mail.mil	MICHAEL	MAHAN	Lt Col
11	Offensive Cyberspace Operations for the Air Force	should we have an "Airmindedness" to how we approach OCO; implications (force structure, equip, training, force presentation, service resourcing) and recommendations on how to do or not do it		703-695-5426		Washington	michael.p.mahan3.mil@mail.mil	MICHAEL	MAHAN	Lt Col
12	EMP survivability of all essential aircraft, systems, and facilities AF-wide	Examining the AF as a whole, how prepared are we for an electro-magnetic pulse (EMP) event. What aircraft and systems would survive such an event and which ones would we need to respond to such an event?		757-225-8481	HQ ACC/A10	JBLE	acca10oOperations@us.af.mil	John	Anderson	Lt. Col
13	The future of USAF international partnerships and coalitions	Are there new long-term alliances that can enhance U.S. national security and global stability? Will existing alliances produce the needed partnerships for the future environment? How do engagements with current partners need to change/evolve to meet future USAF security goals? Are there other partnerships that can be established not based purely on geography? Based on the changing world and increased challenges in in fielding a globally dominate force, the U.S. must be willing to critically examine its current partnerships, as well as be creative with establishing new, mutually beneficial, alliances.		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
14	Cyber Sneak Attacks	Are we prepared to defend against a Cyber Pearl Harbor or 9/11 type attack? ACC depends on the availability and security of the cyber domain to execute combat missions. Currently 24 AF is designated AFCYBER and is tasked with the safeguarding of our networks and information systems. Has USAF or AFSPC as the lead for Cyber, adequately resourced 24 AF to defend the cyber terrain, or are we vulnerable to a surprise attack that could render our technical advantage useless?		757 764-6272	ACC/A6	JBLE	hugh.way@us.af.mil	Hugh	Way	Mr.
15	C2 Operational impact of 5th generation platforms reporting in SAP/SAR domain	C2 Operational impact of 5th generation platforms reporting in SAP/SAR domain. Paper should focus on operational impacts in the C2 community where SAP/SAR is not employed, nor operators cleared for this information. Paper can consider impact on rising number of beyond secret clearances required to implement as 4th gen and earlier systems retire and are replaced by newer platforms.		757-225-4145	HQ ACC/A5	Hampton	John.swartz.4@us.af.mil	John	Swartz	Mr. (GS-13)
16	Combat Cloud and the Air Force's role as Services provider	As part of the development of the Combat Cloud concept, should DoD and Service cyber assets retain a services provider role or transition to the role of services consumers in a cloud enabled environment? We are looking for an optimal approach determined from a set of possibilities of how to have the benefits of cyber services as we move to a cloud architecture.		757 764-6272	ACC/A6	JBLE	hugh.way@us.af.mil	Hugh	Way	Mr.
17	Cyber / EW relationship	- How does effective spectrum dominance and directed energy integrate with cyberspace dominance and are the two mutually exclusive? - How do the services utilize offensive and defensive cyberspace effects using spectrum dominance through electronic warfare? - With the continued expansion of wireless networking and the integration of computers and radio frequency communications, should EW be looked at as a supporting function of cyberspace operations or vice versa?	719-554-3338	719-554-3338	HQ AFSPC/A2/3/6C	PETERSON AFB	corey.ramsby@us.af.mil	Corey	Ramsby	Col
18	Implications of Very Low Yield Precision Nuclear Weapons	Examine the issue of credibility enhancement versus higher possibility of actual use in light of the Russian doctrine of escalate to deescalate. Current US nuclear policy allows for the modernization of weaponry but does not allow for increased mission capability. Is it prudent to modify this policy in order to produce very low yield weapons which would enhance the credibility of our Nation's nuclear deterrence posture without being provocative given Russian doctrine?		301-981-9833	AF/A5SW	JB Andrews	gregory.p.bailey2.ctr@mail.mil	Greg	Bailey	Civ
19	Tactics and Procedures Development for Long Range Cruise Missiles	The Air Force Science and Technology (S&T) community is developing several technologies that could provide options for improving the speed, range, and flexibility of future weapons. These include low cost and hypersonic cruise missile technologies which will allow users to engage targets at long range, and will require new tactics and procedures for employment. Hypersonics are one of the game changers that could provide high-speed options to engage time sensitive targets, while improving the survivability of Air Force systems. These systems can be boosted to hypersonic speeds and fly to the targets powered by an airbreathing engine, or boosted and then glide to targets. Recommend student teams be assigned to develop strategies, tactics, and procedures for employment of these new weapon technologies. Each need a requirements analysis and development of concept of operations for a variety of scenarios. They should work with the Air Force Research Laboratory to understand the capabilities of these low cost and hypersonic cruise missiles.		571-256-0329	SAF/AQRT	Washington	john.j.pernot.civ@mail.mil	John	Pernot	Dr.
20	Proliferation of Global Navigation Satellite Systems (GNSS), Pseudolites, and Beacons	What policies, if any, should the U.S. implement to manage the proliferation of GNSS systems, and especially the proliferation of air and ground-based pseudo-satellites (pseudolites) and positioning beacons? GNSS systems with at least some satellites on-orbit include GPS, GLONASS (Russia), Galileo (EU), and Beidou (China). Regional satellite navigation systems underway include QZSS (Japan) and IRNSS (India). These systems are being augmented by air and ground based pseudolites and positioning beacons including the Locata system being deployed on Air Force test ranges, and Japan's Indoor Messaging System (IMES). Pseudolites and beacons may be widely proliferated, especially for indoor use. Questions to consider include: â€¢ What policies should be developed concerning spectrum use, including: o Use and issuance of pseudo-random noise codes o Incorporating message or other data capability into navigation signals o Compatibility/interoperability standards? o Spectrum bands appropriate for use by pseudolites and beacons for various applications â€¢ Which capabilities should DoD explore further for possible use and why? â€¢ How does the need for coalition interoperability affect these policies? â€¢ What are the advantages and disadvantages of incorporating various allied (or potential adversary) GNSS signals into U.S. GPS user equipment?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
21	LeMay Center -- operational issue	7) Threat Swarming (air and maritime) - is the threat real, and do we have an effective strategy to mitigate that threat?								

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22	What are the strategic, operational, and policy implications and boundaries of an Autonomous Loyal Wingman (ALW) and supplementary UAS/autonomous weapons concept?	The objective of this research is twofold. The first goal is to determine the strategic and operational implications of the automation of an ALW teamed with small unmanned aerial systems (UAS) assets designed to complement a manned fifth generation fighter. The second goal is to uncover the policy boundaries associated with the prosecution of adversary targets using autonomous weapon systems operating in the ALW concept. For this topic, autonomy is defined as â€œthe ability to function as an independent system, unit or element over an extended period of time, performing a variety of actions necessary to achieve predesignated objectives while responding to stimuli produced by integrally contained sensorsâ€[1]. This research shall consider the strategic, operational, and policy implications of the automation of an ALW teamed with small unmanned aerial systems (UAS) assets designed to complement a manned fifth generation fighter. While no AFRL resources are anticipated to be required to complete research for this proposed topic, AFRL personnel anticipate a 1-2 day trip to Maxwell AFB to assist faculty members and students in further refinement of this topic. Secondary POC: Lloyd Clark, AFRL/RYAA, (937) 713-8291, lloyd.clark.2@us.af.mil		937 713-8585	AFRL/RYAA	Wright-Patterson AFB	marshall.haker.2@us.af.mil	Marshall	Haker	Dr.
23	How should the Air Force prepare for the proliferation of Remotely Piloted Aircraft?	The proliferation of cheap RPA technology provides any actor with access to off the shelf RPA capabilities that could disrupt military operations. These capabilities will challenge the air component's ability to deliver air superiority to joint force commanders. What types of counter-RPA capabilities should the Air Force invest in to address this issue? What would be viable concepts of operations for countering the adversary RPA threat to air superiority?		703-697-0775	AF/A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
24	Leveraging Commercial Space Assets for DoD Space Needs	In 1960, only the US and the Soviets flew spacecraft. Today, due to an explosion in the commercial marketplace, DoD is a minority player in space with 95% of all GEO spacecraft owned and operated by commercial entities. The commercial marketplace has also expanded from communications, to ISR and SSA with major new entrants such as Google, PayPal (SpaceX), PlanetLabs, Skybox and other poised to launch 1000's of new spacecraft. To maintain our military advantage, it is imperative for the USAF to tap into these data sources for through commercial leveraging. We have been using this approach effectively for wide-band communications in the last 10 years, but now must expand into space and ground SSA, ISR, and C2. This poses major new technical challenges such as trusting the commercial data, fusing it with legacy AF /NRO data, injecting the data and capability into historically closed AF systems, and developing acquisition approaches to quickly adapt to a rapidly changing commercial market to best take advantage of this opportunity. What are the ramifications to leveraging commercial space assets for DoD space needs? How could this be utilized to enhance DoD missions?		505-853-1889	AFRL/RV		alexander.howard@us.af.mil	Alex	Howard	
25	How will airpower impacts on Operation INHERENT RESOLVE shape future operations for US and partner nation air forces?	This is a two-part question; responses to either portion support AFCENTâ€™s objectives â€“ Part 1: â€œWhat has airpower impacted in Operation INHERENT RESOLVE?â€ AFCENT seeks to identify the mechanisms through which USAF support to Operation INHERENT RESOLVE (OIR) has shaped: operations against the Islamic State of Iraq and the Levant within Iraq and Syria; operations supporting Iraqi Security Forces (ISF) in Iraq; and operations against ISIL in Syria by non-Syrian Regime forces. Potential questions include: â€œHow have US and/or Coalition air operations shapedâ€¦â€[1] (1) ISIL ability to maneuver in Iraq? (2) ISIL basing and freedom of movement in Iraq and Syria? (3) ISF operations against ISIL in Iraq? (4) Coalition support to OIR? (5) Non-Syrian Regime forces combatting ISIL in Syria? The research goal is to identify how airpower has shaped OIR, both at the tactical and operational level, for the enemy (ISIL and associated organizations) as well as friendly forces (ISF, Coalition partners). Part 2: â€œHow will these impacts shape future US and partner nation air force operations?â€ AFCENT seeks to identify implications OIR portends for future US and partner nation air operations. Potential questions include: â€œHow will air operations in OIR shapeâ€¦â€[1] (1) Future joint air operations, to include strategies and tactics? (2) Future combined air operations with partner nations, to include political sensitivities based on religion, sect and/or patronage? (3) Future use of airpower in counter-insurgency or irregular-type conflicts where the US is supporting a host nation without capable ground forces and/or political legitimacy?	965-4122	803 895-4122	USAFCENT/A2	Shaw AFB	9AF/A2/Orgbox.US@afcent.af.mil	Scott	Murray	Colonel
26	Cost-benefit analysis of current cyberspace security models vs other models	The current USAF Strategy in Cyberspace is to secure information, networks, and weapon systems utilizing a layered or bastion defense model. This model has led to costly and often ineffective technical-based solutions. It has also led to security TTPs that are cumbersome, vulnerable to user error, and restrictive for information sharing. What is the potential risk/reward of alternative strategic concepts for information security like deterrence, deception, and maneuverability? For example, logistics security relies on manueverability and unpredictability. Force Protection creates constantly changing security posture through Random Anti-terrorism Measures. In both cases the goal is to increase the OODA (observe, orient, decide and act) Loop of the adversary while reducing the OODA Loop for those that provide security. Both models accept a higher level of risk in some dimensions, but the rewards have been substantial with reduced frequency and cost of security breeches. Is it possible that these or other security models could provide a better model for security in cyberspace?		937-257-2869	HQ AFMC/A2		daniel.atkins@us.af.mil	Daniel	Atkins	Dr.
27	Achieving the right balance between real and synthetic flight time. Advantages, disadvantages and side effects of the extensive use of flight simulators for pilot training and mission/combat readiness.	Air Forces around the world are constantly relying on synthetic flight training. This increasing trend is directly linked to shrinking budgets not allowing the same level of live training that Air Forces had always experienced. Moreover, while the use of flight simulators allows for more complex scenarios (sometimes impossible to perform live), taking this practice to the extreme might induce unexpected results on flight crews (not exposed to real flight condition as they used to). The scope of this research is to give an answer to the matter of finding the right balance between live and synthetic flight time using objective criteriaâ€™s thus exploring advantages and disadvantages of both type of training and potential side effects of the extensive use of flight simulators.	555-555-5555	555-555-5555	OF-4	Roma	luca.gargiulo@am.difesa.it	Luca	Gargiulo	LtCol
28	Affordable Defense of Forward Operating Bases	a.) Determine the full range of threats posed against our forward operation bases b.) Assess the capabilities of current systems and strategies to defend them c.) Evaluate the military utility of alternate strategies and materiel solutions, such as enhanced mobility, hardening, additional counter-TBM systems/airborne TBM/CM weapons d.) Determine cost benefit ratios to assess options in light of current fiscal constraints	875-5908		AFLCMC/XZW		gregory.barnette@us.af.mil	Greg	Barnette	Civ
29	Battle Management and C2 in A2AD Environments	The A2AD environment presents major challenges for battle management, command, and control (BMC2) as traditional BMC2 assets such as AWACS and JSTARS will be pushed beyond the A2 boundary where they are ineffective due to excessive range and low grazing angles. Concepts are evolving for performing non-traditional ISR, strike, and electronic warfare in A2AD environments using penetrating platforms, but BMC2 represents a major problem that will need to be addressed in a substantially different manner than in more permissive environments. This proposed study addresses future alternative concepts for addressing these challenges.		937-528-8548	AFRL/RYM		david.curtis.6@us.af.mil	Dave	Curtis	
30	AF Operations in the Future Megacity	Within the next 20 years, the US may be required to conduct operations within large urban environments. This may require AF forces to conduct operations in support of joint requirements. This study should examine the range of activities the AF may be required to support and the capabilities required to perform AF operations in the future urban sprawl known as the megacity. Specifically, the following are areas for consideration: What capabilities are required to conduct AF operations in the urban environment? Can the AF conduct,mobility, precision strike, C2, and/or PR in an urban environment? What potential new missions should the AF examine to support these future operations?		850 884-7181	AFSOC/A8X	Hurlburt Field	billy.montgomery.3@us.af.mi.	Billy	Montgomery	GS-14
31	The Future of Organic Supply Chain	The Air Force's future organic supply chain will be shaped by the sustainment decisions made today for weapon systems such as the KC-46, F-35, T-X, J-STARS recap, and LRS-B among others; therefore, a RAND study is recommended for Air Force logistics leaders to plan the supply chain business processes, capabilities, and infrastructure today to respond to future SCM demands. If the outsourcing of SCM that started in the 1990s continues, the organic supply chain will become obsolete or at a competitive disadvantage when the legacy weapon systems, which constitute the bulk of organic supply chain business, eventually retire. The retirement of legacy weapon systems, coupled with continued outsourcing of SCM, will ultimately render the organic supply chain working capital fund unsustainable. It is imperative we formally display the impacts and aggressively communicate or mandate actions to prevent the organic and/or core supply chain demise. Ref: White Paper, The Future of the Air Force Organic Supply Chain, 15 Oct 2015, Captain Joe Mercurio	339-3708	405-739-3708	AFSC/LXGB		shannon.wagner.1@us.af.mil	Shannon	Wagner	

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32	The Future of Proximity Operations in Space	Rendezvous and proximity operations (RPO) are specific processes where two resident space objects are intentionally brought close together for operational purposes. Such operations pose a safety concern as well as raise the specter of adversary interference with our critical space assets. However, proximity ops are poised to expand to multiple government and private sector entities pursuing a variety of applications. In the future we will likely see on-orbit activities such as satellite servicing (repair, refueling, and station-keeping/orbit adjustment), debris removal, robotic assembly of structures, cooperative distributed systems, and operation of habitable facilities for research and industrial purposes. Future space development will undoubtedly see increases in the frequency and sophistication of RPO. As proximity operations become routine we will likely see an operational environment in which the high sensitivity of this activity will seem increasingly out of place. At the same time, the recent strategic portfolio review for space calls for resilience and agile defense in an environment of evolving threats. Questions to consider: â€¢ What are the national security space implications of increasingly common RPO, and how could we mitigate risks? â€¢ Which types of proximity operations are of greatest concern, and how could they be detected, monitored, and if necessary, discouraged? â€¢ How should national policies and international agreements evolve to accommodate a future in which numerous global players are actively engaged in proximity operations? â€¢ Are there lessons to be learned from the gradual loosening of restrictions in other high-sensitivity space activities, such as high-resolution commercial remote sensing?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
33	Viability of Trusted Manufacturing for DoD Space and Cyberspace Infrastructure	Faulty and/or counterfeit components in space and cyberspace not only have a detrimental impact to operations within their domains, but are additionally very costly to detect and replace. Problem Statement: Faulty and/or counterfeit components in space and cyberspace not only have a detrimental impact to operations within their domains, but are additionally very costly to detect and replace. Task: Explore the need and utility of trusted manufacturing of components for use in DoD systems, specifically those which support space and cyberspace operations.		719-554-3135	AFSPC/ST	Colorado Springs	Donald.Rhymer@us.af.mil	Don	Rhymer	Lt. Col
34	Policy and Foreign Relations Implications of <1 Day Launch on Demand	- AFRL/RQ is working with AU LeMay Wargame center to quantify AU/CCâ€™s vision for a CONUS based platform to deliver air power globally in about 1 hour (called Air Guardian) - Topic scope includes examining implications of delivering air power (e.g. weapons, supplies, troops, etc) anywhere on the globe via an extra-atmospheric vehicle to national and international policy - Example potential policy concerns are 1) foreign air space violations, 2) projecting weapons through space, and 3) perception of a nuclear ICBM launch	937-255-3088	937-255-3088	AFRL/RQQD	WPAFB	barry.hellman@us.af.mil	Barry	Hellman	Strategic Planning
35	What are the Challenges in Integrating 5th Generation Air Power Capabilities in to a Seamless Force?	The USAF and RAAF (and other western Air Forces) have either begun the process of introducing fifth generation air power systems, or have (USAF F22) done so. Fifth generation air power systems provide revolutionary capabilities that will require, inter alia, transformation in concepts, organisation and personnel training and education to ensure these capabilities are used to best operational effect in a future fully integrated force. These same western Air Forces will continue to operate legacy systems in some cases for decades to come. There will therefore be significant challenges in integrating fifth generation air power capabilities such that a seamless, secure and fully connected joint force is developed, which fully caters for and integrates the capabilities of legacy systems. The aim of this research topic is to better understand the challenges inherent in fully integrating fifth generation air power capabilities, and to identify solutions to better enable the required transformation in the Air Forces concerned.		334 953-3916		Canberra Airport	Sanu.Kainikara@defence.gov.au	Sanu	Kainikara	Doctor
36	Additive Manufactoring (Incorporate new technology into the logistics and maintenance community)	Develop a sound policy / practice of developing new technology and required policy, training, certification and documentation of implementation and execution. Link AFI21-102, AFI21-101, and AFI63-101 requirements into Life Cycle guidance and policy so new technology becomes a viable process for depot and field level repair with clear direction on how technology is used, and technical guidance and training is meets users needs for safe execution.		937-257-1270	HQ AFMC/A4F	WPAFB	robert.eardley@us.af.mil	Robert	Eardley	Mr.
37	Impact of Global Space Endeavors on International Space Security	International space activity is increasing in scope and activity from a relatively small number of well-known players to many emerging nations and other new entrants. With this awareness, the recent Strategic Portfolio Review (Space) identified the ability of the United States to work in alliances and international partnerships as a great national strength. The development of U.S. space strategy would benefit from an improved understanding of spacefaring nationsâ€™ political context, and an assessment of their national and corporate policies, strategies, and trends, to supplement the more conventional approach of documenting space hardware development efforts. Avenues for investigation include: â€¢ An analysis of official policy contrasted with observed activity â€¢ Pursuit of or investments in innovative or breakthrough technology â€¢ Impact of the proposed International Code of Conduct for Outer Space Activities â€¢ Incentives and likelihood of adhering to internationally established norms of behavior â€¢ Long-term impact of policies departing from treaty language limiting territorial or sovereignty claims on space bodies (i.e., property rights in space and the implications for economic, political, and military exploitation).	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
38	The Current State of Total Exposure Health: Tech, Science, and Policy	Total Exposure Health is a strategic initiative that integrates workplace, environment and lifestyle exposures into improving â€œHealth Situation Awareness". A new healthcare infrastructure to be defined and built that integrates ALL exposure data (workplace, environment, and lifestyles) into the clinical record, advances delivery of healthcare, patient experience, health outcomes, medical surveillance, and military operations. The purpose of the AU reserach would be to identify the current state of TEH in both the public and private sectors as it relates to -- Precision Medicine â€" Optimize preventive strategies with focus on the individual (unique & targeted) to better organize, train and equip a healthy force -- Advances Epidemiology & â€œBig Dataâ€ The current use of individual exposure data from wearables/sensors using advanced informatics to improve global health/operations -- Research & technology - Sensor development, rapid ID of unknown threats and low-level exposure biomarkers in human genomics in real-time; enhancing the human weapon system; job placement; logistics; and command and control And current DoD or Military component policy associated to bio surveillance and population and personalized health with near and future projections. The research will be used for immediate CONOPS development.		703 681-7626	AFMSA/SG3PB	Fall Church	Richard.t.hartman3.ctr@mail.mil	Richard	Hartman	Chief Health Strategist
39	1. Small Satellite Concerns	The proliferation of small satellites (smallsats) is a growing problem for the national security space community. In 2013, there was a 269% increase in the launch of 1kg-to-50kg smallsats over the previous year. Substantial annual growth in numbers of these satellites is projected to continue, based on existing programs and announced plans of developers. By one estimate, between 2,000 and 2,750 smallsats of this size are expected to be launched from 2014 to 2020. A single launch vehicle can deploy dozens of cubesats. The International Space Station (ISS) also has the ability to deploy small payloads routinely. New services, intended to be operational before the end of this decade, are being developed to place an increasing number of smallsats in orbit at decreasing cost. The growth is primarily driven by rapidly expanding non-governmental activity. Attracted by low-cost commercial off-the-shelf (COTS) technology, greater access to space via increased rideshare opportunities, a growing industrial base, and sophisticated satellite buses that are declining in cost, smallsat companies are carving out a market niche and academic institutions are embracing the hands-on learning opportunities. As greater numbers of smallsat constellations are deployed, issues of maneuverability (or the lack of it), active and passive identification, and end-of-life disposition must be addressed. The U.S. regulatory regime for these operations is still in its development stage. There is also no agreed-upon international standard or code of conduct addressing this activity. The research project should explore policy and safety considerations; identify impact, if any, to orbital debris standards compliance (nationally and internationally); assess the effectiveness of advocating and adopting appropriate international norms of behavior; and evaluate other remedies which might ease the potential space traffic management problems associated with the proliferation of small satellites in low Earth orbit.	7036147725	7036147725	SAF/SP EA-5	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
40	Establishment of military bases overseas	Identify the history on how and why military bases were established overseas		405 739-2678	PZAA	Tinker AFB		Deborah	Smith	GS-14
41	The future of tasking multi-role airpower assets	What is the optimal way to task and prioritize the missions of multi-role assets? Currently ISR assets are tasked via ISR-D and the RSTA while CAS and Interdiction sorties are tasked via the ATO. B-1â€™s and F-15â€™s are often conducting ISR while Predators and Reapers are regularly conducting deliberate strikes and CAS. Does the fluidity and mission flexibility of multi-role assets warrant a new way to prioritize and task missions?		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
42	Adversary Capabilities within Human Genome Research	China has developed the largest, best-funded private genome research program through the Beijing Genome Institute. These publicly disclosed research capabilities hint at greater capabilities. The goal of this project is to evaluate the battlespace capabilities of adversary nations with regards to offensive or defensive human genomic research.		937-713-3018	USAFSAM/FHT	Wright Patterson AFB	richard.chapleau.1@us.af.mil	Richard	Chapleau	Dr.

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43	What are the operational implications of conducting battle damage assessment (BDA) through sampling and extrapolation versus 100% post-strike confirmation?	Given the current accuracy and reliability of precision munitions can battle damage assessment (BDA) be effectively and reliably be conducted through sampling and extrapolation versus 100% post-strike confirmation? Can this approach along with a tighter integration with operational campaign effects assessments provide a risk averse decision maker acceptable BDA? How would this approach impact the operational commanderâ€™s risk calculus and what criteria are necessary to gain a commanderâ€™s trust in such an approach? This effort would support the AFRL/RI Full Spectrum Targeting Program, Automated Battle Damage Assessment Project by providing operational insights and an initial feasibility assessment on alternative approaches to conducting BDA and would further guide the development of technologies supporting BDA. The current BDA paradigm is highly risk averse in that targets are presumed live until proven dead. Target status typically verified though combat assessment of the effectiveness of individual strikes, most often based on analysis of EO imagery. Due the risk averseness of decision makers and the quality of BDA provided by EO imagery, decision makers often refuse to accept BDA not based on this source. Under this current paradigm the demand for a high degree of confirmation of individual strikes would quickly exceed the capacity of the ISR enterprise during a large major combat operation. Given the current accuracy and reliability of precision munitions this high degree of post-strike verification may in fact be an unnecessary use of valuable ISR resources. In addition, air campaign operational effects assessments are often similarly based on combat assessments of individual targets. Operational effects are usually inferred through counts of targets killed versus observation of the desired effects themselves. An alternative could be to extrapolate BDA results from the assessment of a sample of representative targets within a large scale attack or target complex. This could be complemented by a refocusing of the operations assessment effort from the individual targets to the overall effects which may lend themselves to verification by a broad spectrum of collection methods other than EO imagery. A tightly coordinated and synergistic effort between the BDA cell and the operations assessment team could provide the commander a holistic and decision quality assessment of the air campaign. This approach could be enabled by new data analytic and information fusion technologies. Such a refocusing from individual targets to effects could require a fundamental change in the commanderâ€™s understanding and calculus of operational risk. This has to be understood as well as the criteria necessary to gain a decision makerâ€™s trust in such a process. This proposed research would consist of a deep dive into and extensions of approaches considered in the 2002 School of Advanced Air Powers Studies thesis titled â€œAssessing Airpowerâ€™s Effects: Capabilities And Limitations Of Real-Time Battle Damage Assessmentâ€ authored by Lieutenant Colonel John T. Rauch, Jr. In light of new technological developments in precision munitions, data analytics, and data fusion a relook at these BDA alternatives might yield fruitful insights.		315-330-4263	AFRL/RIED	Rome	joseph.raquepas@us.af.mil	Joseph	Raquepas	Dr
44	Is the Air Force prepared to conduct operations in the future Mega City?	Topic Description: As giant urban centers or megacities proliferate, social and government conditions will likely deteriorate. In the next 20 years, US forces may be required to conduct operations in these megacities in support of US national security interests. This may require US Air Force forces to conduct activities in support of joint force requirements. This study should examine the range of activities USAF may be required to support and the capabilities required to conduct Air Force missions in the future urban sprawl known as the megacity. The UN forecasts that today's urban population of 3.2 billion people will rise to nearly 5 billion by 2030, when three out of five people will live in cities. Surveys and projections indicate that urban growth over the next 25 years will be in developing countries. One billion people, almost one-seventh of the world's population, currently live in shanty towns. In many poor countries overpopulated slums exhibit high rates of disease due to unsanitary conditions, malnutrition, lack of basic health care, high rates of crime, drug addiction, poor transportation and little to no infrastructure. By 2030, over 2 billion people in the world will be living in slums. Over 90% of the urban population of Ethiopia, Malawi and Uganda, three of the world's most rural countries, already live in slums. As these megacities grow and proliferate, there is probability unrest will rise as social and government services deteriorate. If so, large ungoverned spaces will form within the urban sprawls. Groups and organizations will offer services to disaffected populations and may serve as unelected or non-recognized governments within these megacities. Over time, these centers may become safe havens for illicit actors and activities. Ultimately, these centers could become regional concerns and threats to US national security. Specifically, the following are areas for consideration. â€¢ What capabilities are required to conduct Air Force operations in the urban environment? o Can the Air Force conduct the mobility mission in the urban environment? o Can Air Force conduct effective Precision Strike in the urban environment o Are current AF ISR capabilities sufficient to operate in the urban environment? o Will Air Force Special Tactics personnel require unique equipment to operate? What special training will they require? Are there any special personnel requirements; education, training, ethnicity, language, etc. o Are there special communications requirements; command and control; agile combat support; medical, and so forth. â€¢ What are the current Air Force deficiencies? â€¢ What potential new missions should Air Force examine to support the future operations?	312-579-7181	850-884-7181		Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans
45	How should the Air Force leverage its Allies and partners into the future?	Alliances and partnerships provide a multitude of stabilizing benefits ahead of conflict, including mass, political resilience, legitimacy, and strategic 'breathing room.' Many traditional allies and partners find themselves in a strategic context very similar to that of the US: increasing commitments around the globe with reduced resources for those commitments. How should interoperability among the Air Force and its Allies and partners be enhanced? To what extent should the Air Force shift from an interoperability to an interdependence mindset with its allies and partners? Is there historical precedent for doing so? What benefits can be reaped from such an approach? What pitfalls call such an approach into question?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
46	Optimized Air Force S&T/T&E Infrastructure to Meet Current and Future Needs	Numerous studies have been conducted over the past two decades assessing Air Force (and other agencies) capabilities supporting S&T and RDT&E needs. None of these have conducted any sort of detailed optimization analysis based on acquisition workload/content scenarios in order to assess where investments should be made in a resource-constrained environment to upgrade existing facilities, build new ones, AND divest of older infrastructure. Another shortfall of previous analyses is the failure to account for the differences in S&T experimentation/test versus that conducted in support of programs of record with facilities designed for these two phases assumed to be as available and cost effective as the other. Lastly, past analyses have failed to take account of the very different business models that are used in S&T as compared to RDT&E which has had the effect on many occasions of making the MRTFB largely unaffordable to S&T programs. With the above in mind, the purpose of this study would be to posit several future scenarios, assess the adequacy of the current S&T and RDT&E infrastructure going forward to meet the future requirements, create and assess alternative future infrastructure postures (existing +/- upgrades +/- new), and propose/assess alternative business models (and the necessary accompanying policy changes) to provide the optimal capabilities for the most likely future environment with hedging as appropriate.		937-656-2808	AFRL/RQ	WRIGHT PATTERSON AFB	arthur.huber@us.af.mil	Art	Huber	Col
47	Precision dependency: The impact of demand for precise, low-CDE weapons on USAF requirements developments... Are our planning paradigms right?	Current weapons and weapons delivery platform requirements are developed with Major Combat Operations scenarios in mind, and do not account for the type of warfare weâ€™ve fought (to include the CIVCAS mitigation, CDE concerns, and elevated Target Engagement Authority). What impact does this have on the future inventory for the USAF? What do we risk and gain with an alternative approach? This would aid in ensuring the COCOMs and Air Components are properly resourced for a range of contingencies, and would inform decisions/reflections on our current way of war.		803-895-3430	AFCENT A3/A3TW	Shaw AFB	matthew.mccarty.1@afcent.af.mil	Matthew	McCarty	Lt Col

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48	Benchmarking Government Technology Commercialization Strategies	Proposed project objectives: 1. Understand the Air Forceâ€™s past, current and evolving technology transfer program. 2. Benchmark how other federal agencies approach technology transfer and commercialization. At a minimum, review the efforts at the CIA (from an approach to investing), NSF, and DHS. 3. Identify changes in policy and law (FAR) that are necessary for the Air Force to approach commercialization with the intent of capitalizing on the value of the intellectual property generated from its research investment. 4. Estimate the potential Return on Investment of an innovative commercialization strategy built on the recommended policy and legal changes. The US Government funds billions of dollars in research designed to spawn development of new technologies and capabilities each year. The research covers the spectrum of maturity from basic (exploratory) to applied and near-ready for transition, and the spectrum from information, aerospace, space, environmental, intelligence, medicine, etc. Some government agencies conduct research with a view towards transitioning capabilities to either enhance existing mission systems or develop new mission systems, and do so with varying degrees of success. Some agencies also attempt to transfer technology beyond government use to spawn innovation in the private commercial sector. With the success agencies have in transitioning technology for government use, transference of the technology for private commercial use pales in comparison. Yet, there are innovative approaches being explored; principally by the Central Intelligence Agency (In-Q-Tel), the National Science Foundation (I-Corps Program), and the Department of Homeland Security (Commercialization Office). AFRL executes an annual research budget approaching $5 Billion, half of which is organically funded by the Air Force; the other is research purchased by other federal agencies. Despite various attempts to capitalize on inventory of intellectual property through commercialization of technology for private sector use, efforts have met with minimal success. Why is it a challenge for the Air Force? What are the barriers to success?		937-904-9100	AFRL/CA	Wright Patterson AFB	ricky.peters@us.af.mil	Ricky	Peters	SES
49	Adversary Capabilities within Human Genome Research	China has developed the largest, best-funded private genome research program through the Beijing Genome Institute. These publicly disclosed research capabilities hint at greater capabilities. The goal of this project is to evaluate the battlespace capabilities of adversary nations with regards to offensive or defensive human genomic research.		937-713-3018	USAFSAM/FHT	Wright Patterson AFB	richard.chapleau.1@us.af.mil	Richard	Chapleau	Dr.
50	The Application of Combat-to-Dwell Inside the MQ-1/9 Force Presentation Model	Combat to Dwell time for aircrew members within the MQ-1/9 enterprise. Does it improve training/retention/health/morale of the aircrews assigned to this weapon system.		757-225-3366	HQ ACC/A3	JBLE	joe.joyce.1.ctr@us.af.mil	Joe	Joyce	Mr.
51	Long-term operational impacts to radar tracking as cooperative reporting rises.	Paper should focus on operational role of radar surveillance as cooperative reporting (self-reporting) from data linked equipped platforms becomes platform wide. Should radar surveillance become more of an intel function as blue forcing tracking will provide much better identification and positional data.		757-225-4145	HQ ACC/A5	Hampton	john.swartz.4@us.af.mil	John	Swartz	Mr. (GS-13)
52	Shared Situation Awareness in Cyberspace	How should we define shared situation awareness in cyberspace and what is itâ€™s importance to defense of the AF core missions, weapon systems, mission systems, and what mechanisms are best suited to aggregate SSA and then share it with those who require it? Are our current DCO weapon systems optimized to contribute to SSA or should we re-envision them?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	PETERSON AFB	william.mcculley@us.af.mil	William	McCulley	Lt Col
53	The impact of Chinese expansionist policies on U.S. national security interests	What is a greater threat to U.S. interests in the Pacific, Chinese expansion to the West, to the South, and beyond? The South China Sea dominates the news, however, it is worth examining the implications of the Chinese expanding West into the Middle East, and beyond (e.g., into Africa and South America) for U.S. national security interests.		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
54	OPIR Industrial Base Strategy	Current material of choice for OPIR sensors is difficult to manufacture, resulting in low yields and increased costs.		719 554-6606	AFSPC/ST	Falls Church	michael.bracchi2@us.af.mil	Mike	Bracchi	GS-13
55	Can mission aircraft be more effective if integrated with Ground Control Systems (GCS)?	Topic Description: Could integrating GCS capabilities with mission aircraft such as AC-130, U-28, and MC-12 provide an opportunity for AFSOC to build more versatile crews and mitigate manning issues? Could the Air Force also leverage this concept? The purpose of this study is to propose a potential concept which provides for full spectrum GCS integration with AFSOC platforms or other operational aircraft, which could alleviate/mitigate manpower issues and enhance situational awareness and command and control. Problem Background: As the force continues to get smaller and younger, the war-fighting environment continues to evolve. This drives a need to leverage experience from multiple communities to effectively and efficiently execute NTISR and Precision strike from multiple platforms. Manpower issues continue to plague AFSOC in the precision strike and ISR (manned and unmanned) mission areas. There is a shortage of Combat Systems Operators in the C-130 community and the RPA has manning shortages across the spectrum. This issue could be mitigated if the crewmembers werenâ€™t stove piped into a single career field. This integration would allow individuals to flow back and forth between the RPA and the AC-130 possibly reducing manpower requirements. This construct would provide AFSOC with a well-rounded operator that can speak smartly across the spectrum of strike and ISR. This could also be extended to manned ISR platforms. As an example, this idea could make the AC-130 mission operator pallet/weapons control deck (MOP/WCD) controllable from the ground via a GCS eliminating the need to fly with CSOs and/or Sensor operators in the seat reducing the overall crew requirement. The AC-130 would still have both pilots on board for final weapons release consent and the Fire Control Officer (FCO) would stay on board for help in both enroute navigation and mission management at the MOP/WCD. The full gunner compliment would remain to trouble shoot weapons malfunctions. The GCS crew could be built any numbers of ways depending on mission requirements. The Intel experts that assist RPA crews would be available as well. This construct allows for maximum situational awareness in both the air and on the ground providing a layer of protection from target misidentification due to the availability of constant C2 reach back capability. Having operators in a Remotely Piloted Aircraft Operations Center (ROC) could mitigate aircraft to aircraft communication issues since the Full Motion Video (FMV) feeds and Sensor Point of Interest (SPI) information would be going to a central location. This would make target talk ons, laser spot identification and sensor transfers much easier. Crews could also work airspace deconfliction and target execution much more quickly if they are in the same facility working the same target.	312-579-7181	850-884-7181		Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans
56	What is the impact of DLA supply planning practices on long term sustainment health of the B-1, B-52, KC-135 weapon systems since 2000	DLA has implemented several supply planning practices based upon their internal metrics. Sometimes those practices fail to meet the needs of supplies on the shelf for long term sustainment of older weapon systems. Can any increase of MICAPs or decrease of Aircraft Availability be correlated to these supply practices.		405-736-3033	448 SCMW/QA	Choctaw	joel.clay.1@us.af.mil	Joel	Clay	Mr.
57	AF-Wide Cyber Mission Awareness	How can cyber mission assurance be provided to combat and other platforms that are not visible to 24th AF on AFNET on a 24/7 basis.. The need for information dominance makes organizations and missions increasingly dependent on cyber resources, ranging from general-purpose information and communications technologies to mission or business function-specific information systems. Those resources are subject to disruption, degradation and failure due to both hostile activities by threat actors and by environmental conditions. Interruption, degradation or imitation of critical information and data needed to support decision makers and mission owners poses significant risk to C2, mission execution, and other air operations that require integration and synchronization of geographically dispersed air elements.		757 764-6272	ACC/A6	JBLE	hugh.way@us.af.mil	Hugh	Way	Mr
58	LeMay Center -- operational issue	4) Stealth vs. advanced Surface to Air Missile Systems - do we own the advantage?								

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59	Are Crowdsourcing-Based Approaches to Problem Solving Effective for USAF/DoD?	Our current culture and related processes are unable to exploit the larger pool of available intellectual resources to respond to our strategic national problems. The current geo-political environment is driving the Department and our partner organizations away from the conventional approach to problem recognition and corresponding risk/crisis response(s). The new nature of our situation is ever-changing, unpredictable, disruptive, and sometimes transient; this new reality induces a degree of paralysis in our strategic and critical thinking processes because of the current organizational communication methods. As a consequence, our adversaries use these constraints against us to maneuver, think, act, innovate, implement strategy and anticipate our actions faster than we can. The speed, quantity and accessibility of information has created the potential to solve problems faster and with greater accuracy. Information is no longer confined by time and geographic location, but rather by our ability to communicate with one another. Technology is erasing these boundaries, turning individuals and groups of people into mines of information resources. Are there crowdsourcing techniques, processes and technologies that can exploit this intellectual capital to improve our problem solving and decision making processes? What are the exemplary characteristics of successful crowd-based problem solving models? What are the barriers to successful application, and can/how can they be mitigated? How does a customer and the crowd participants define a successful output? What are best practices when using crowdsourcing techniques to use large populations to solve a common problem? What key functions must collaborative environments provide to enable optimal crowd/customer/facilitator performance? What are effective incentives to motivate participation and the generation of valuable outputs? The goal of this topic is to identify new problem solving techniques or methods that shorten decision cycles, increase value of outputs, retain the intellectual capital and access to contributors/innovators, and identifying the merit of outlier contributions produced during the problem solving/ideation process. An objective of this topic may be to propose a problem solving model that can be applied to the strategic issues facing the USAF/DoD which allows our forces to think, plan and act faster than our adversaries.	3346334751	3349534751	SOC/DE	Maxwell AFB	christopher.evey@us.af.mil	Christopher	Evey	Major
60	Identify Weapon System Sustainment (WSS) Sustaining Engineering (SE) Funding Shortfalls across the Nuclear Enterprise.	To conduct a study on the unique risks to nuclear weapon systems by underfunding sustaining engineering. AFCANs IV Chapter 3 requires AFMC conduct a study that: 1) Identifies the risks to the nuclear weapons systems by underfunding sustaining engineering, 2) provides alternate solutions to better fund sustaining engineering, 3) performs root cause analysis of sustaining engineering (AFCANS IV 3.7a) funding shortfalls.		937-257-4963	AFMC/A10SP		deborah.hileman@us.af.mil	Deborah	Hileman	
61	Medical Research Horizon Scouting	Identify long-range S&T opportunities such Synthetic Biology, Biomarkers, Suspended Animation, Precision Medicine and others. Scope industry for current capabilities and analyze for future trends within respective areas		703 681-8091	AFMSA/SG5	Falls Church	kevin.r.kupferer2.mil@mail.mil	Kevin	Kupferer	Maj
62	AFMS contributions to AF Global Partnership Strategy	Review how AFMS Global Health engagements link and support the USAF Global Partnership Strategy (SAF/IA).		703-681-6986	AFMSA/SG3X	Fairfax	juan.i.ubiera.mil@mail.mil	Juan	Ubiera	Lt. Col
63	The Implementation of RPA Aerial Refueling and the Impacts to the Warfighter	RPA refueling and the impacts to the warfighter of increased on station times/increased transit distances.		757-225-3366	HQ ACC/A3	JBLE	joe.joyce.1.ctr@us.af.mil	Joe	Joyce	Mr.
64	Automated systems for RPAs?	Should the AF go w/ auto takeoff and landing for MQ-1/9s?	260-4292	571-256-4292		Washington	travis.a.burdine.mil@mail.mil	Travis	Burdine	Lt Col
65	Personnel Recovery (PR) in an Anti-Access/Area Denial (A2/AD) Environment	Determine multi-dimensional future Personnel Recovery force capability requirements to successfully operate in an A2/AD environment. Requirements should not focus on platforms but emphasize future cross functional offensive, defensive, and cyber capabilities and address requisite recruitment and training requirements for the future Combat Rescue Force.		757 764-0904	HQ ACC/SG	JBLE	acca10oOperations@us.af.mil	Raymond	Moschler	Lt. Col
66	Enterprise AFNET NIPRNET Reliability and Risk	Many mission critical systems reside on NIPRNET. Does the AF properly understand the overall risk to operations? What is the impact on operations of reliance on NIPRNET? Do increased NIPRNET reliability problems degrade AF ability to perform not only staff duties, but also mission planning and C2 actions? Loss of e-mail and network slowness affect commandersâ€™ and staffsâ€™ ability to collaborate with off-station teams. Outages and performance issues recur. The possibility of â€œshadow ITâ€ is on the rise.	312-260-7735	571-256-7735	LeMay Center/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
67	LeMay Center -- operational issue	3) Implications of Unmanned Aerial Systems (UAS) and Counter-UAS operations throughout the Range of Military Operations (ROMO).								
68	Future of neurotechnology for airman-machine teaming	Neurotechnology influence on how people understand the brain and various aspects of consciousness, thought, and higher order activities in the brain. It also includes technologies that are designed to improve brain function and allow researchers and clinicians to visualize the brain. This study should explore the future of neurotechnology as it could potentially relate to efficient and effective integration of airman (human) with complex machines.	785-8222	937-255-8222	711 HPW/CL		rajesh.naik@us.af.mil	Rajesh	Naik	Dr.
69	Mapping the Value of AF Bioenvironmental Engineering:Â Comparison(s) to Other Federal Models	Â AF Bioenvironmental Engineering (i.e., AFSCs 43E and 4B) arose from the Army Sanitary Corps to eventually build capability and capacity spanning the following constituent OPM Occupational Series: 0690 (Industrial Hygiene), 0801 (General Engineering and Architecture), 0819 (Environmental Engineering), 1306 (Health Physics), and 1310 (Physics).Â Apparently no other element of the DoD, DOE, HHS, or any other department or agency of the USG consolidates so many occupations into one career field to execute Occupational and Environmental Health (OEH), Health Risk Management (HRM), and Radiation Safety/Protection Officer (RSO/RPO) roles.Â Does the value of the Bioenvironmental Engineering model create more efficiency for the warfighter (and taxpayer) than more specialized approaches?Â How can this value best be quantified, tracked, and analyzed? Â Â		703 681-6988	Â AFMSA/SG3PB	Falls Church	anthony.j.cagle.mil@mail.mil	Anthony	Cagle	Maj
70	Non-traditional medicine (Return of Investment ROI) for AFMS	What is the return of investment on the use of non-traditional medical practices for treatment and or prevention (i.e. holistic, alternative/complimentary, acupuncture etc.)? How can this translate to improved care and readiness for the AFMS and MHS? Refer to industry achievements, international partnership nations' use.		703681-8091	AFMSA/SG5	Falls Church	kevin.r.kupferer2.mil@mail.mil	Kevin	Kupferer	Maj
71	Major acquisition impacts since USAF decision to move PEMs out of the MAJCOMs and into AFLCMC	Paper should focus on the impact of the 1999/2000 decision to move the PEMs from the operational MAJCOMs to AFLCMC. Special consideration should be given to major acquisition performance since this change, limiting of operational communities options to address critical issues (e.g. limiting to termination of the program), and the delta between acquisition need for cost/schedule versus user's primary need for capability/performance.		757-225-3366	HQ ACC/A5	Hampton	john.swartz.4@us.af.mil	JoJohn	Swartz	Mr.
72	Efficiently Integrate Space and Cyberspace	Research will identify cost savings and mission effectiveness gains that could be achieved by efficiently integrating space and cyberspace within AFSPC and subordinate organizations. It will identify commonalities that could be leveraged, including those that may be associated with: defending operational systems, maintaining situational awareness, training and retaining personnel, organizing, acquisition and technology development, command and control, and force enhancement. Although space and cyberspace have been defined as two distinct domains, space and cyberspace capabilities and operations have substantial commonalities (e.g., reliance on networks and net-centric operating concepts, extensive presence of threats, generation of non-lethal effects, support to kinetic operations). Thus, intelligent integration of space and cyberspace could result in significant improvements in operational effectiveness and/or cost savings. AFSPCâ€™s recent assumption of authorities and responsibilities as the lead cyberspace MAJCOM and its traditional role as the AF space MAJCOM present both challenges and opportunities to lead the integration of space and cyberspace capabilities. Opportunities exist to improve net-centric situational awareness, enhance the protection and defense of space and terrestrial networks, and improve the ability to generate offensive non-lethal effects. This proposed research should identify areas where integrating AFSPCâ€™s management of the space and cyberspace mission areas is likely to generate increases in operational effectiveness or cost savings. Potential candidate integration areas could include one or more of the following, based on sponsor guidance: operating concepts, command and control, technical capabilities (offensive, defensive, situational awareness, force enhancement/support), acquisition approaches, human capital management, assessment approaches, organizational strategies, basing, maintenance, international engagement, leadership priorities and vision, policy and strategy.	312-692-9198	719-554-9198	AFSPC/A8XP	Peterson AFB	LEE.CORNELIUS.2@US.AF.MIL	Lee	Cornelius	GS-13

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73	Capability vs Threat-based Acquisition	DoD has been increasing the emphasis on providing threat information to acquisition programs, including via AT&L's Better Buying Power 3.0 initiative. This threat-based approach potentially conflicts with the capability-based approach of the past decade. An "either or" approach is not viable; however, it's not clear how to best balance both capability-based and threat-based acquisition (as well as the attendant requirements). The Study Organization should assess the merits of both approaches, and recommend processes for the Requirements, Acquisition, and Intelligence Communities to implement to achieve an optimal balance in consideration of the Better Buying Power 3.0 initiative.		781 225-5955	AFLCMC/INH	HANSCOM AFB	joseph.pridotkas.1@us.af.mil	Joseph	Pridotkas	GS-15
74	Assessing Information Assurance and Mission Effectiveness	What does information sharing contribute to mission effectiveness and how can it be assessed? The advent of the Joint Information Environment (JIE), Mission Partner Environment (MPE), and other DoD and USAF initiatives (Unified Capabilities, Cloud, Cyber, Mobile Devices, ISR Information Architecture, etc.) all emphasize the need for information sharing (IS). This carries with it a need for a common data framework, federated information architectures, integration of system of system (SoS) construct functions to provide needed information sharing capabilities, and interoperability (structural, syntactic and semantic) of information across Air Force Service Core Functions (SCF); among domains, organizations and users (Joint, coalition, allied); throughout ROMO. Information sharing is more than simply a process of connecting networks and nodes or information exchange requirement (IER) identification related to mission. The IS chain (gather, post, process, archive, dispose) and the IS capabilities delivered along that chain, needs to be linked to the mission chain (plan, execute, monitor, assess) in order to categorize, quantify, qualify, and evaluate the contribution of IS capabilities to mission accomplishment within an operational context and along a mission thread.		757 764-6272	ACC/A6	JBLE	hugh.way@us.af.mil	Hugh	Way	Mr.
75	PNT Leadership Strategy	The U.S. Space-Based Positioning, Navigation, and Timing Policy calls for the U.S. to remain the global leader in providing satellite navigation systems and services for worldwide use. However, global leadership can no longer be interpreted as being a monopoly provider, since many foreign systems are being actively pursed for civil, commercial, and military use. â€¢ What does this mean for PNT-related engagement with other nations fielding space navigation systems? â€¢ To maintain leadership, should the U.S. commit to a GPS acquisition and launch schedule based on firm operational dates for modernized capabilities, or is a schedule based on satellite end-of-life estimates still appropriate? How much, if anything, could be gained? â€¢ What are the implications (pro and con) of adding foreign PNT capabilities to U.S. military user equipment? â€¢ What complementary PNT sources would provide low-cost, robust military service in electromagnetically and physically impeded environments? For which military applications might they be cost-effective? â€¢ What are the PNT leadership implications of the U.S. deciding to deploy, or not deploy, an eLORAN system as a complementary PNT system to GPS? What is the most cost-effective force structure to deploy for U.S. critical infrastructure applications? What force structure would be required to support national security applications given U.S. global commitments?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
76	Role of Operationally Responsive Space (ORS) in International Engagement	The Department of Defense (DoD) signed a multi-lateral Responsive Space Research, Development, Test & Evaluation (RDT&E) Memorandum of Understanding (MOU) that provides a legal framework and authority for conducting information exchange and exploring potential projects with international partners. The MOU holds promise for promoting allied interoperability and for leveraging country-specific expertise, thus encouraging mutually beneficial technological advancements. Perhaps more importantly, it provides a mechanism for U.S. involvement and leadership in the development of common technical standards, without which some current U.S. technology advantages may erode. How can the U.S. best leverage the ORS RDT&E International MOU to increase U.S. advantage? Potential lines of inquiry include: â€¢ What are potential benefits of modular satellite designs and electronic â€œplug and playâ€ standards (such as reduced satellite construction costs and more timely assembly, integration and test)? â€¢ How could commonality serve to make U.S. and partner nation responsive space products attractive to a world market? â€¢ How might cost-sharing arrangements enable projects? â€¢ How is this agreement unique (or not unique), and how might this agreement serve as a template for expanded cooperation with countries not included in the agreement? â€¢ How will additional layers of complexity inherent in shared projects impact execution? â€¢ How can we mitigate the risks of fragile and interdependent cost-sharing arrangements? â€¢ What are the residual risks/challenges to technical data sharing, even with an MOU in place? What approaches would help to mitigate/overcome those risks/challenges?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
77	Enhancing Global Installation and Mission Support (I&MS) Processes	Study builds upon a RAND Project Air Force 2015 Study "Enhancing Global Agile Combat Support Processes". Objective would be to improve I&MS support to the warfighter by examining the implications of the new operating and support concepts for anti-access area-denial (A2AD) environment. It builds upon the prior year study that examined the organizational changes by adding a 6th Center (AFIMSC) under AFMC, and examines the roles, responsibilities and the subsequent gaps and seams identified in its organization structure and execution methodology to deliver efficient and effective support to the warfighter.	969-1779	(210) 395-1779	AFIMSC/XZP		marc.vandeveer@us.af.mil	Marc	Vandeveer	Col
78	Strategic Stability in an Unstable World: Potential Military Aspects of Strategic Stability in the Contemporary Geopolitical Environment	During the Cold War, the term â€œstrategic stabilityâ€referred to the nuclear balance between the two superpowers. In recent years, strategic stability has generally referred to the strategic relationship between the major nuclear powers â€" including, but not limited to, the relationship between their nuclear forces. Recent U.S. government efforts to open â€œstrategic stabilityâ€dialogues with Russia and China have not gained traction. With US-Russian relations facing increasing challenges â€" and US-China relations increasingly complex â€" what measures (whether, unilateral, bilateral, or multilateral), if any, could the U.S. military propose to U.S. policymakers bolster strategic stability in the nuclear, space, or cyberspace domains?	703-676-8019	703-676-8019	AF/A10-SI (CTR)	Arlington	justin.v.anderson4.ctr@mail.mil	Justin	Anderson	Contract Research Spc
79	Assessing Potential Space Arms Control Agreements	Should the U.S. support a new space arms control treaty and, if so, what type of treaty limitations, restrictions, information exchanges, and verification measures would be beneficial to US security? Current U.S. space policy strongly supports developing multilateral mechanisms to address issues that represent common challenges to all space-faring nations, to include the potential negotiation of space arms control agreements. U.S. policy also states, however, that it will only consider space arms control agreements that are â€œequitable, effectively verifiable, and enhance the national security of the United States and its allies.â€ Since the Outer Space Treaty entered into force in 1967, attempts to develop space arms control agreements have proven unsuccessful. Space arms control proposals have generally failed to pass the â€œequitable, effectively verifiable, and enhance [US national security]â€ test. This proposed paper would assess whether a future space arms control agreement could meet these standards, and, if so, would further investigate the potential parameters of this agreement with regard to central limits, information exchanges, and the verification regime it would need to employ.	703-676-8019	703-676-8019	AF/A10-SI (CTR)	Arlington	walter.m.conrad.ctr@mail.mil	Walt	Conrad	Strategic Research Contr
80	What is the best mechanism for AF to command and control (C2) conventional and nuclear forces simultaneously, when all forces are forward deployed in a geographic combatant commanderâ€™s AOR?	AF executes C2 for conventional forces very well. AF executes C2 for nuclear forces very well. However, AF does not have the capability, including both forward deployed equipment and trained personnel, to C2 a conflict that begins as a conventional war, escalates to include a limited nuclear strike, and de-escalates back to a conventional war. Examples of these limited nuclear operations executed in conjunction with enabling conventional air operations could include JASSM-ER support to ALCM, JASSM-ER support to B-2 nuclear operations, or F-16 SEAD support to NATO-led F-15E nuclear operations. National Command Authority (NCA) retains C2 of nuclear forces, while the Air Operations Center (AOC) retains C2 of conventional forces. AOCs do not receive nuclear Emergency Action Message (EAM) execution and termination orders, and NCA C2 nodes are not co-located with AOCs. An example of one of the challenges is communication and coordination of mission efforts related to survivability and the acceptable level of risk (ALR) to air operations. The President retains sole execution and termination authority; as such, the airborne mission commander during a nuclear sortie does not have the authority to deviate from Presidential authorizations. However, during this mission the enabling conventional support assets may face a threat environment greater than allowed by the mission ALR. At that point coordination would be required back to NCA to terminate the nuclear mission, but airborne mission commander platforms in theater may not have the capability to do so, especially in a communications denied or degraded environment. Proposed research would address appropriate mechanisms to simultaneously C2 nuclear and conventional forces worldwide; and include analysis of issues such as trained deployable manpower, associated equipment, training, large scale exercise test beds, etc.	703-693-9747	703-693-9747	AF/A10	Arlington	usaf.pentagon.af-a10.mbx.af-a10-workflow@mail.mil	Joel	Douglas	USAF Major

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81	Effects of Hypersonic Weapons on Deterrence	Hypersonic weapons increase the speed of warfare, decreasing time available for national leadership to observe, orient, decide, and act (OODA). Nuclear deterrence relies on time factors to observe a threat and react, while preserving capabilities to message increasing postures, and provide retaliatory strikes in the event of surprise. If hypersonic weapons decrease our ability observe and react, will a new fundamental approach be needed for deterrence, or is a retaliatory capability sufficient?		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
82	Space Domain Deterrence â€"Tactics, Techniques, and Procedures Across the Spectrum of Warfare?	There are logical subtopics which may themselves constitute meaningful areas of study: a. What are appropriate peacetime norms of behavior in space, and how would the Law of War apply to a war extending to space? [Note: The two parts of this topic could be worked by separate subgroups on a single research team]. b. How can we achieve sufficient (credible) superiority in multi-domain power to create a calming effect in space? c. How to create effective deterrent strategies in Contested, Degraded, and Operationally-limited (CDO) space and cyberspace environments? [Objective success criteria may be achieving conditions when certain assets are understood by both sides to be strategic only, and that attacks on them will be considered sufficient cause to initiate strategic exchanges]. d. How can we partner with commercial providers and allies most productively? [Objective success criterion is to determine a measurable balance between getting the most benefit from partnering without giving up too much ability to act unilaterally]. e. What role, if any, should manned spacecraft play in a space war? [Objective success criterion is to identify deterrent leverage that such assets possess which unmanned vehicles do not]. f. Devise strategies for deciding what to reveal and what to conceal in space deterrent capabilities and operations. g. What security architectures should be incorporated in deterrent measures which extend to the space domain?	719 554-3582	719 554-3582	HQ AFSPC/A2/3/6Q	PETERSON AFB	kevin.whaley@us.af.mil	Kevin	Whaley	Lt Col
83	Long Duration Logistics Wargame (LDLW)	Current Chief of Staff Title 10 wargames lack the ability to predict, beyond 30 days, the sustained logistics support for successful COCOM power projection leaving a critical gap of linking strategy and investments. It is imperative to develop and implement a process to improve active and realistic logistics participation in wargames, simulations, and exercises while minimizing concern areas throughout the Air Force Logistics Enterprise. LDLW is a HAF sponsored program to help fill those needs. LDLW will help: evolve logistics core competencies to fully support Joint Operations, posture logistics resources for the current and future fight, and deliver cost effective readiness through product support and operational logistics.		937-904-0064	HQ AFMC A4F	WPAFB	omar.mendoza@us.af.mil	Omar	Mendoza	Mr.
84	Capturing service retained forces supporting Combatant Commanders in doctrine	Services retained forces currently execute AF operations satisfying Combatant Commander requirements (RPA, Intel DCGS, Opn Wx Sqdn, etc.). These mission sets are conducted outside the OPCON definitions of JP-1. A solution to this authorities conflict is required to codify the support relationships.		757-225-8453	ACC/A3W	JBLE	william.courtemanche@us.af.mil	William	Courtemanche	Lt. Col
85	In the context of a contested space domain, what will Control of Space actually look like?	US Armed Forces are well-versed in gaining and maintain Sea Control, Land Control and Control of the Air, with detailed understanding of what is required in terms of specified and implied tasks, what the consequences and risks are, and what capabilities must be brought to bear to achieve these objectives. Arguably, however, we have never had to fight and win Control of Space. The essence of the topic requires an analysis of the similarities and differences between Control of Space and Control of the traditional warfighting domains. It should also examine what space capabilities should be employed and how space forces should be postured to most effectively fight and win Control of Space given the unique nature of the domain.		719-554-2413	AFSPC/A8XP	Peterson AFB	SEAN.LANGRISH.GB@US.AF.MIL	Sean	Langrish	SQN LDR/O-4
86	LeMay Center -- operational issue	1) Advantages of integrating Simulation and Modeling with Wargaming to develop a more holistic view of future warfare.		334 953 3724	LeMay Center/WEF	Maxwell AFB	Michael.todd.21@us.af.mil	Michael	Todd	LTC (USA)
87	Define the pros and cons of Manned and Unmanned ISR and propose an appropriate USAF ISR force mixture.	Topic Description: The purpose of this study is to examine the pros and cons of manned and unmanned ISR. Based on findings, the researcher should propose an ideal USAF ISR force mixture. The researcher should not make recommendations based on personal opinion or bias, but rather should conduct an in-depth analysis of factors such as doctrine, operational requirements, manning considerations, platform efficiencies, cost, geopolitical considerations, basing, command and control, and the relative capabilities of both.	312-579-7181	850-884-7181		Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans
88	How do we address the differences between Strategic and Tactical Indications and Warning from the CONOPS, leadership and technical execution perspectives as well as across and between levels of command?	Indications and warning, or I&W, is a process used by the defense and intelligence communities to detect foreign developments that could potentially threaten U.S. military, political or economic interests or U.S. citizens abroad. The process includes forewarning of enemy actions or intentions, imminent hostilities, insurgencies, attacks on the United States or its forces or allies, hostile reactions to U.S. reconnaissance activities, terrorist attacks and other events. While the importance of I&W across all echelons is clear, the delineation between tactical and strategic I&W remains ill defined. The goal of the this proposed effort is add clarity to this delineation in order to inform and guide AFRL/RIâ€™s technology development approaches for both the current Automated Indications and Warning Program and the follow-on Strategic Indications and Warning Program. Under the Automated Indications and Warning program AFRL/RIED has developed and delivered key machine learning and data fusion technologies providing the warfighter and decision maker with tactical I&W capabilities. In preparation for the FY18 new start Strategic I&W Program key questions will need to be addressed concerning the nature of tactical warning versus strategic warning. Is the transition from tactical to strategic warning fundamentally an issue of scalability to longer time scales and broadened scope or context? Or are there key conceptual differences which demand new technological approaches? What are the key differences in CONOPS? What are the differences in leadership roles both in tasking the I&W enterprise and in the use of I&W for decision making? How do the warning problem sets differ fundamentally between levels of command? How do we posture the warning enterprise and what technologies are needed to automatically anticipate a possible range of possible futures for rare events that are of interest to national security? A clear understanding of these topics will help ensure the success of AFRL/RI I&W programs at delivering the right technologies to the warfighter and decision maker.		315-330-7147	AFRL/RIED	Rome	carolyn.sheaff@us.af.mil	Sheaff	Carolyn	Civ
89	Deep Learning for ISR	Recent advances in machine learning, particularly deep-learning, have produced near human-level performance in tasks such as: image object classification, natural language processing, and speech recognition. Interest and investments from commercial and academic entities provided the catalyst for research and have been motivated by ability to infer meaning from "Big Data". The following are needed for the USAF to maintain technical superiority in computer vision and machine learning: a) survey of current use of deep learning in relevant large data-intensive commercial and non-DoD government enterprises as well as the intelligence community to assess their use and effectiveness for detection, characterization, and prediction, b) comparison of characteristics of data streams from Air Force ISR assets with those of such other enterprises that may impact or limit Air Force ability to utilize deep learning, and c) an assessment of the abilities of deep learning methods to address aspects of ISR processing, exploitation, and analyses currently done by humans. The results of such activities would allow for two products: 1) Determination of the extent to which deep learning can enable improved processing, exploitation, and analyses of multi-source ISR data to support improved operational decision-making, and 2) Recommendations and prioritization of areas for research and development needed to enable deep learning suited to characteristics of the global integrated ISR environment.		937-528-8328	AFRL/RYAT		james.patrick.1@us.af.mil	Jim	Patrick	
90	Using GPOPS-II: Next-Generation Optimal Control Software Determine Feasibility of Unmanned Suborbital Launching, Landing, Refueling onto a Perpetual Altitude Air Carrier over CONUS	Using GPOPS-II: Next-Generation Optimal Control Software (http://www.gpops2.com/) Determine Feasibility of Unmanned Refueling of a Suborbital Vehicle via an Air-based Carrier likely at 80,000-150,000ft Perpetual Altitude (Moving or Stationary) over CONUS or International Waters via Suborbital Flights from space and to the Air-based Carrier or back to the Surface of the Earth; calculations should include the ability of Suborbital Vehicle to safely and autonomously Intercept the Air-based Carrier for refueling then transit back to orbit or descent to the surface of the earth for prosecuting ISR missions. Additionally, there should be a comparison of Suborbital Vehicle refueling at various altitudes versus traditional space launch capabilities; that is intuitively, a Suborbital Vehicle requires less fuel when launched at 80,000-150,000 ft altitudes and Suborbital Vehicle can demonstrate extreme and on-demand responsiveness for the conduct of ISR missions anywhere in the world. From a broader perspective, these calculations are to demonstrate the feasibility of the unused 80,000ft to exoatmospheric domain for strategic and tactical advantage in the prosecution of future missions; a partial exemplar exists in the conduct of missions of the X37 and the potential of future commercial suborbital flights and the ability to reduce launch costs from the surface of the earth (e.g., SpaceX recoverable primary rocket stages). If feasible, these calculations would inform the capability of a novel capability in the control of the 80,000ft to exoatmospheric domain (300,000ft) for military application.		505-846-2215	AFRL/RVES	wright patterson afb	eddy.wright.1@us.af.mil	Eddy	Wright	Dr-II

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91	Merits of Computer Based Training (CBT) vs. Squadron Training Office Training	Review merits of CBT vs. Squadron Training Office conducting training. While CBTs provide individual scheduling flexibility, we may have moved too far away from critical training (i.e., Suicide Prevention) being taught through CBTs vs. an individual under the supervision of the Squadron Training Office. In person training offers several advantages: 1. Complex issues (like Suicide Prevention) can be more fully explored in group settings 2. Enhances group cohesiveness, morale and teamwork Also, Senior Leadership should be aware how much time is allocated to CBTs vs. mission accomplishment. We are not suggesting there is no place for CBTs in training, but we believe there is value in a review of how training is accomplished.		757-225-9232	HQACC/A3	JBLE	Evan.Scaggs@us.af.mil	Evan	Scaggs	Mraj
92	Production Cut-Ins: near and Long Term Impacts	How do new cut-ins to production aircraft impact the learning in the near term and/or long term? The MQ-9 is a prime example where actuals on production existed but the configuration was in constant flux. The hours associated with the new cut-ins were added but the learning curve slope remained unchanged and the additional hours ran down the same curve based on the previous configuration. These new hours were applied to the learning curve and calculated off the current unit instead of starting that subset of hours off at unit 1, thus understanding and flattening the learning. The analysis should be broken out by areas of the aircraft affected (i.e. avionics bay vs landing gear).		937-656-4357	AFLCMC/FZCE	Wright Patterson AFB	anthony.munafo@us.af.mil	Carole	Farley	Col
93	Leveraging Commercial Space Assets for DoD Space Needs	In 1960, only the US and the Soviets flew spacecraft. Today, due to an explosion in the commercial marketplace, DoD is a minority player in space with 95% of all GEO spacecraft owned and operated by commercial entities. The commercial marketplace has also expanded from communications, to ISR and SSA with major new entrants such as Google, PayPal (SpaceX), PlanetLabs, Skybox and other poised to launch 1000's of new spacecraft. To maintain our military advantage, it is imperative for the USAF to tap into these data sources for through commercial leveraging. We have been using this approach effectively for wide-band communications in the last 10 years, but now must expand into space and ground SSA, ISR, and C2. This poses major new technical challenges such as trusting the commercial data, fusing it with legacy AF /NRO data, injecting the data and capability into historically closed AF systems, and developing acquisition approaches to quickly adapt to a rapidly changing commercial market to best take advantage of this opportunity.		505-853-1889	AFRL/RV	Kirtland AFB	alexander.howard@us.af.mil	Alex	Howard	DR-03
94	The unique challenges faced by "functional" COMAFFOR staffs versus "geographic" COMAFFOR staffs.	Compare/contrast the challenges of functional or global mission areas to geographically "bound" mission areas; explore the difference and similarities between a "functional COMAFFOR's" engagement strategy/Campaign Support Plan and a geographic COMAFFOR's Country Plan/Campaign Support Plan.		719 554 - 7951	HQ AFSPC/A2/3/6OP	Peterson AFB	nia.bluford@us.af.mil	Nia	Bluford	Maj
95	SOF challenges and opportunities in future operating environments: How and where SOF can be game changers	Since the end of the cold war, the U.S. has inexorably moved to a less stable and less predictable global environment. Predicting future instability, conflicts, and direct and indirect threats to U.S. interests is profoundly important to USSOCOM. What are the projected global hot spots in five, 10, 15 years? What future state, non-state, social, and technological â€œgame changersâ€ could impact global U.S. interests? What do SOF need to understand about the myriad projections and predictions regarding the future operating environment so USSOCOM is prepared for the future? Where should USSOCOM focus future â€œPhase 0â€ activities to enhance stability and prevent conflict? Should there be increased emphasis on campaign planning and the application of operational design to help develop strategies for activities short of war?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
96	Hosting Coalition Air Forces	A study for the benefit of improving the infrastructure, maintenance facilities, fuel storage, logistics aspects of operations to help serve joint and coalition operations with the ultimate goal of planning, budgeting and cost sharing between allied countries and host nation. This topic is submitted by Royal Jordanian Air Force (RJAF) Commander Maj Gen Mansour al Jabour, who lost Capt Moadh al Kasasbeh in their own fight against ISIL and are hosting multiple coalition partners on their bases for Operation Inherent Resolve. The contact information listed is for US Air Attache to Jordan Lt Col Matt Yocum, who submitted at the request of the RJAF Commander.		2022317234	RJAF	DPO	yocummw@state.gov	Mansour	al Jabour	MG, Jordan AF Cdr
97	Facilities Sustainment Restoration & Modernization (FSRM) Mission Risk	Study builds upon a RAND Project Air Force Oct 2015 Draft Report "An Approach for Linking Infrastructure Resources to Readiness" and provides a practical analysis to assign mission-to-infrastructure criteria to provide an assessment of Facilities, Sustainment, Restoration & Modernization Funding from a Mission Risk perspective. It would evaluate the criteria, definitions and IT systems (such as CARM & Forcepro) to recommend a deliberate process to collect the information, bin it and utilize it in the corporate process to assess mission risk to infrastructure in an underfunded environment. It should also analyze existing prioritization processes such as the Critical Infrastructure Program, Prioritized Asset List, Tiered Facility Maintenance and Installation Facility Priority Lists to determine their utility in making an informed risked-based decision process to prioritize infrastructure on our bases. The output should analyze the feasibility and utility of cataloging potentially hundreds of thousands of facilities in the AF inventory and potentially their subsystems versus a more practical approach of only thousands or hundreds.	969-1779	(210) 395-1779	AFIMSC/XZP		marc.vandeveer@us.af.mil	Marc	Vandeveer	Col
98	Examine the unique challenges to C2 when functional missions cross domains.	Many space operations missions use communication links to accomplish the mission; USCYBERCOM is tasked oversee all things cyber (i.e., communications links). Research should answer: where does space operations "stop" and cyberspace operations "begin"? Who takes the lead / who takes command where they meet? When the two conflict, which mission area has precedence?		719 554 - 7951	HQ AFSPC/A2/3/6OP	Peterson AFB	nia.bluford@us.af.mil	Nia	Bluford	Maj
99	Space and Cyber Cross-domain Synergies	The 2011 National Security Space Strategy specifically calls for exploring cross-domain solutions for capabilities that are currently delivered from space. However, cross-domain operations may offer more than simply an alternative means to deliver capability. Operating in multiple warfighting domains simultaneously can create synergistic effects. These effects are well understood in the conventional warfighting domains and the synergistic effects of combining space or cyber with land, air and sea are well appreciated. However, the effects of combining space and cyber operations are as yet largely unexplored. Areas for consideration: â€¢ What does cross-domain synergy (CDS) mean to your Service (as it relates to space and cyber)? o How does space power contribute to cyber operations? o How does cyber power impact space operations? â€¢ Do you see cross-domain synergy as a capability optimized for the A2/AD challenge, or is it something that is relevant to a broader set of challenges and that the Joint Force should integrate across the force as a matter of course? â€¢ What does CDS do for the joint force? â€¢ What are the attributes of a force that is able to conduct space and cyber cross-domain operations? â€¢ Are joint forces capable of conducting cross-domain operations today? â€¢ What changes to doctrine, organization, training, materiel, leadership and education, or personnel and facilities (DOTmLPF) could enhance capabilities through CDS?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
100	How might the Air Force realize "multi-domain aopproaches" described in A Call to the Future and the Strategic Master Plan?	Multi-domain approaches, as described in A Call to the Future and the Strategic Master Plan, imply the seamless integration of air, space, and cyber capabilities to accomplish the five core Air Force missions. What technology investments should the Air Force consider to advance multi-domain approaches? What organizational models would best enable successful multi-domain approaches? How should the Air Force present forces for multi-domain approaches to joint force commanders?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
101	Space and Cyberspace Domains	Space and cyberspace domains are becoming increasingly contested, as alluded to in the comments by CDR AFSPC, Gen Hyten, since he took command. These domains should be viewed as warfighting domains that could potentially be supported by, rather than supporting, the traditional warfighting domains. How does the AOC need to evolve to better incorporate space and cyberspace into its operations and provide C2 of space/cyberspace when they are the supported domains? Does there need to be a new construct to C2 space and cyberspace and coordinate with other domains the way the AOC C2s and coordinates Air operations?	312-692-7633	719-554-7633	AFSPC/A5XC	Peterson AFB	randall.gardner.1@us.af.mil	Randall	Gardner	Major
102	Is it time for a paradignm shift in managing people?	The future Air Force faces two major management challenges. The first challenge is fueled by generational change and shifts in the US economy and its workforce: how can the Air Force bolster the retention of its most talented and innovative people? The second challenge is to reward innovation and foster organizational agility: how can the Air Force purposefully integrate modern organizational design, leadership theory, and smart risk-taking to these ends? What legal and policy authorities does the Air Force possess to address these challenges? What changes in law and policy does the service require to address these challenges?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col

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103	Examine the implications and effects of adopting programs to optimize SOF human performance: Are there limits to enhanced physical and mental capabilities?	An extensive study directed by a former USSOCOM commander, Admiral Eric Olson, revealed that the current operational environment has been more difficult than operators and their families expected, leaving little time for them to adjust to the daily strains of perpetual absences. The study noted troubling consequences, with increases in domestic and family problems, substance abuse and self-medication, risk-taking behaviors, post-traumatic stress, and even suicides. The study found that SOF were frayed. Currently, there is legislative reluctance to fund USSOCOM human performance programs and infrastructure as opposed to Military Service funded programs. USSOCOM human performance efforts are currently integrated under the POTFF initiative. What are the values of SOF specific human performance programs? Should it be a stand-alone program more aligned with operational needs? Should or will the human performance initiative be considered an operational USSOCOM requirement? Why should USSOCOM spend money on such additional programs? What are the limits for the program to research enhanced or augmented physical and mental capabilities? What are the moral and ethical issues beyond optimizing mental and physical capabilities, sleep, nutrition, and resilience; as opposed to augmenting or enhancing physical and cognitive abilities through advances in biomechanics, pharmaceuticals, and genetic therapies?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
104	DE Weapons impact in 2030 on Hypersonics, Autonomy, Policy and Strategy	- How will DE weapons, hypersonics, autonomy, impact US national strategy in 2030? What policies will these technologies require? - Objective - Gain insight on top level US Strategy for DE Weapons Usage & Protection - MIssions -- Air and Space Superiority - Desired Insights -- Best area to focus limited resources to defend against DE Weapons	312-986-7274	937 656-7274	AFRL/RX	WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
105	Beyond stealth to maintain technical overmatch: What does SOF need from future/advanced technologies ("Third Offset")?	In the fall of 2014, then-Secretary of Defense Chuck Hagel announced the â€œDefense Innovation Initiative.â€ An initiative to develop a â€œthird offsetâ€ in technology (stealth was part of the second offset). The third offset is meant to give U.S. forces technological overmatch of its adversaries. Possible examples of this new offset include robotics, autonomy, miniaturization, 3-D printing, big data, and/or swarming. Innovation is not constrained to the defense industry, and the DOD may have to look to the commercial market for breakthrough technologies. What capabilities and/or advances in technologies need to occur to ensure United Statesâ€™ SOF (USSOF) maintains a technological advantage over our adversaries? How can SOF capitalize on the third offset? What are the future technology-based threats to SOF operators across the range of military and special operations? Can SOF overcome these threats? How can SOF benefit from these same technologies for operatorsâ€™ safety and effectiveness? How can SOF use recent technological advances to sustain a force in austere environments, or decrease the footprint of a force in a situation that demands low visibility?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
106	The proliferation of Unmanned Aerial Vehicles and Drone Warfare	The proliferation of cheap UAV technology gives any potential adversary access to off-the-shelf drones that could be used to disrupt US operations, challenging the air component's ability to provide air superiority in a contingency. What technologies and capabilities should the Air Force be investing in to stay ahead of this emerging challenge? Are there non-materiel solutions that lend themselves to this challenge? How might a "counter-drone" CONOP work?	227-0775	703-697-0775	AF/A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
107	What is an affordable strategy for recapitalizing the Air Force for the future?	Rebalancing to an exclusively 'high-end" force may expose the Air Force to an adversary's long-term attrition strategy. There is additional risk that high-end capabilities increasingly diverge from those of partner nations, challenging interoperability. Two principal items need to be evaluated against today's strategic context: 1. The tempo at which the Air Force transitions to a high-end focused force; 2. the balance of Air Force capabilities to provide effective airpower across a wide spectrum of operations.		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
108	How should the Air Force construct a near/far mix of capabilities for the future?	As the Air Force decreases in numbers of platforms, our global basing network may soon become unsustainable. This will force difficult choices for global posture. An analysis of the strategic environment offers more questions than answers as we consider a diverse array of challenges and potential operating locations. Some have suggested a shift away from permanent overseas bases to an predominantly expeditionary force based in the US. Consider the role of permanent and temporary overseas bases vis a vis US bases: what is the appropriate balance?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
109	Air Superiority 2030 Experimentation Campaigns	In April 2015, the CSAF chartered the Air Superiority 2030 Enterprise Capability Collaboration Team (AS 2030 ECCT) to develop capability options to enable joint force Air Superiority in the highly contested environment of 2030 and beyond. The AS 2030 ECCT recommended two areas for experimentation, detailed below. Experimentation is highlighted in the AF Strategy and Strategic Master Plan as a methodology to enable agility and explore game-changing technologies and capabilities. The AF is standing up a Strategic Development Planning and Experimentation (SDPE) Office at WPAFB that will host a small cadre to assist experimentation campaign planning and analysis. The vision is to leverage operational expertise from across domains to develop and evaluate innovative concepts through experimentation. Air University offers a unique opportunity to access high-caliber Airmen with current operational experience in an environment that provides the freedom to pursue disruptive innovation. Recommend 6 students (3 each from ACSC and AWC) be assigned to work with the SDPE Office on each of the campaigns below. Data-to-Decision Campaign of Experiments: The campaign will examine machine-to-machine options for turning data into information and knowledge, thus allowing humans to make the required decisions. Furthermore, it will examine options and opportunities for building the appropriate architectures necessary to network the AS2030 family of capabilities and leverage data analytics. An iterative series of experiments will explore innovative combinations of technologies, doctrine, operations, and organizations to achieve decisive strategic, operational, and tactical decision superiority against our adversary. This campaign will seek to identify capabilities and architectures for: â€ Secure, agile, survivable communications to meet future interoperable (Joint, Allied, Coalition) needs across the strategic, operational, and tactical forces in the highly contested environment â€ Relevant data that is discoverable and accessible regardless of source, policy, security level, distance or location in the battlespace and is reliable, and trust-worthy to warfighters and agencies at all levels Defeat Agile Intelligent Targets (DAIT) Campaign of Experiments: The DAIT experimentation campaign will focus on the most challenging targets across multiple domains. Defeating such targets will require new, multi-domain concepts to Find, Fix, Track, Target, Engage and Assess (F2T2EA). An iterative series of experiments will explore innovative combinations of technologies, doctrine, operations, and organizations to achieve decisive strategic, operational, and tactical decision superiority against our adversary. This campaign will seek to: â€ Understand capability contributions of various technologies across identified Air Superiority constructs â€ Characterize technology interdependencies across mission effects chains. â€ Understand synergistic combinations of technologies, employment concepts, and command and control regimes â€ Increase warfighting exposure and knowledge of potential enabling technologies to include benefits and limitations â€ Understand DOTmLPF-P implications of technology-enabled concepts	260-0322	571-256-0322	SAF/AQRT	Washington	jerry.r.lautenschlager.civ@mail.mil	Jerry	Lautenschlager	NH-IV
110	Does the Air Force require a next generation special operations mobility platform?	The purpose of this study is to determine whether the US requires a next generation capability to rapidly project forces globally to conduct no-fail missions in A2/AD environments. If so, the paper should recommend a concept for a capability which provides strategic reach and access; and the ability to penetrate, operate, and survive in A2/AD environments. As the Department anticipates the changing face of warfare over the next several decades, the Air Force special operations community must ask itself what single event could surface that would require the U.S. to conduct a no-fail mission - a mission so critical that failure would change our nation or damage our reputation as a superpower. The security threat to the U.S. from peer competitors, rogue nations, and non-state actors will only increase, and the challenge of the no-fail mission will not recede. The projections and requirements of the National Military Strategy, Defense Strategic Guidance and QDR all suggest that U.S. defense planners must seek new mobility capabilities to penetrate future enemy anti-access environments to execute our nationâ€™s most critical operations. Prudence requires that the US prepare for possible future adversaries likely to possess and employ a degree of A2/AD capability - the ability to blunt or deny U.S. power projection - across all domains. Moreover, a capability that could clandestinely reach strategic targets beyond the reach and capability of the MC-130J and the CV-22 could reduce or eliminate the need to roll back enemy integrated air defense systems with conventional forces. A successful penetration offers U.S. response options that might prevent escalation into major combat.	312-579-7181	850-884-7181		Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans
111	The future of 3D printing in the US Air Force	As 3D printing capability matures, what concepts and new capabilities can the Air Force leverage? A couple obvious capabilities are rapid prototyping and rapid manufacturing - but what 3D printing trends and innovative concepts can be explored/leveraged to support the SecAF's question, "How will future Air Force forces deliver responsive and effective Global Vigilance-Global Reach-Global Power in the anticipated environment of 2035?" stated in the Air Force's Future Operating Concept?		703-697-0447	AF/A5R	Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ

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112	What is the current state of Quantum Computing (QC)	When will QC become available to US companies and DoD, when will it become available to adversaries, and what impacts will QC have on Air Force/DoD encrypted systems and encryption technologies?		703-697-0447		Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ
113	Cloud Computing, Social Learning Environments, Quantum Computing	1. Balancing Availability of Data with the necessary Confidentiality and Integrity (referring mostly to Cloud Computing and the continuing need to have data available to multiple entities constantly and consistently). 2. Social Learning Environments and Sharing of Data Across Multiple Platforms, Devices, and Within Divergent Cultures (referring to the advance of MOOCs, social media, and other collaborative spheres. This is also applicable to AF level business and operations in that info sharing and collaboration are paramount to accomplishing tactical/strategic goals) . 3. Physicists were able to manipulate light in two different places simultaneously where they could be in two different states at two different locations. Very interesting. The experiment was also supported (funded?) by Army and AF. http://news.yale.edu/2016/05/26/doubling-down-schrdinger-s-cat		334 953-9511	LeMay Center/WES	Maxwell AFB	joshua.sipper.1@us.af.mil	Joshua	Sipper	Dr.
114	Establishment of a Space Traffic Management capability	As space is increasingly becoming congested, an inter-agency proposal recommends the establishment of a Space Traffic Management capability, possibly building on the model of the International Civil Aviation Organization (ICAO) as it pertains to aviation. Areas for consideration include: â€¢ Are there inherently non-military activities currently performed by U.S. Strategic Command (USSTRATCOM) that can be better accomplished by a civil or commercial entity? â€¢ What is the best construct between civil organizations and DoD? Consider the following: o The Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST) is the U.S. licensing authority for non-federal launch and re-entry. o USSTRATCOMâ€™s Joint Functional Component Command for Space is the only U.S. entity with the analytical staff and space surveillance capacity to effectively monitor space traffic. â€¢ What are the benefits and risks of transferring responsibilities for conjunction assessments and advisory notices to a civilian agency?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
115	National and International policy overview concerning transit of potentially CBRN contaminated aircraft	Recent events related to the 2014 Ebola and 2011 Operation Tomodachi contingency response operations highlight the difficulty ensuring aircraft can transit international borders and return to the United States. There are many stakeholders in the public policy regarding transit of aircraft in these circumstances. With the advent of dispersed operations in A2/AD environments, the issue will become even more complex. The objective of this research topic is to identify the relevant public policies and regulatory framework for aircraft transiting international borders, and domestically within the United States, that may be CBRN contaminated or suspected of CBRN contamination. The author is encouraged to make recommendations for future tactics, techniques and procedures to facilitate the safe transit of aircraft while complying with applicable regulatory standards.		757 764-1209	HQ ACC/SGPB	Joint Base Langley-Eustis	randolph.smith.3@us.af.mil	Randolph	Smith	Col
116	AFMS contributions to Aviation Enterprise Development	Review how AFMS Global Health engagements link and support the Aviation Enterprise Development.		703-681-6986		Fairfax	juan.i.ubiera.mil@mail.mil	Juan	Ubiera	Lt. Col
117	Do We Need a New Sustainment Paradigm for UAVs?	The current paradigm of Air Force sustainment generally adheres to the following theses: aircraft are expensive, aircraft are not expendable, and aircraft are highly complex. From these paradigmatic theses, the current Air Force sustainment model was developed. Mainly, aircraft frequently undergo costly preventative maintenance, aircraft maintainers are highly trained specialists, and large quantities of spare parts are kept on hand to mitigate performance risks. While these practices serve the AF well for conventional aircraft, they are likely suboptimal with sustaining the growing fleet of Unmanned Aerial Vehicles (UAVs) because UAVs are not expensive, are expendable, and are not highly complex. A UAVâ€™s characteristics represent a significant and fundamentally different way to view aircraft. It is therefore worthwhile to examine the effectiveness of current sustainment activities for this new aircraft paradigm and explore future sustainment strategies as they relate to the growing UAV fleets.		937-904-5952	AFLCMC/OZA	Wright Patterson AFB	kelvin.utendorf@us.af.mil	Kel	Utendorf	Dr. (GS-14)
118	Opertional and Strategic Impact of Counterfeit Parts in the Air Force supply chain	The Air Force supply chain has been and continues to be a target for counterfeit parts (either for criminal purposes or for malicious code intent). While a variety of AF and DOD offices are working to mitigate this issue, what are the operational and strategic impacts of CP to the Air Force?		405 734-8735	448 SCMW AFMC	Tinker AFB	david.chaston@us.af.mil	David	Chaston	GS-15
119	Maintaining Trust with the American People	Has trust and confidence eroded between the American people and the Profession of Arms (POA)? If so, what is an appropriate strategy to reestablish and maintain trust between the POA and the people of America? Related research questions include: what are the elements of trust; what are the expectations held by the American people for their military services; the fragility trust. The impact of senior leader misconduct on trust.	493-7938	334-953-7938	DEW	Maxwell AFB	gene.kamena@us.af.mil	Gene	Kamena	Ad-25
120	Maximizing Diversity in USAF STEM Fields	Diversity is a major focus in the Air Force today. However, STEM career fields make up a large portion of the force, including rated as well as non-rated technical specialties. Women and some minorities have historically been underrepresented in university programs that lead to accessions in STEM fields, and this presents challenges to USAF diversity goals. Research could lead to possible solutions to recruiting challenges as well as leadership and institutional methods to ensure the underrepresented demographics make the maximum possible contributions and overcome barriers to professional success.	312-260-8088	571-256-8088	HQ USAF/A3WT	Washington	william.n.pryor.mil@mail.mil	William	Pryor	Lt Col
121	The application of Total Force to sustain Conus (contingency) operations	Examination of pros and cons of partial or wholesale transfer of missions to ARC units. What is the optimal mix of Regular Air Force and ARC personnel to ensure Regular Air Force personnel flow through ARC sustained missions/systems in order to enable experience-based HQ's management? How do standing legal authorities (Title 32 and Title 10), enable or impede rapid accessibility of ARC forces during quickly emerging crisis within the Conus (e.g. space or cyberspace contingencies)?		801-777-5781	HQ AFSPC A2/3/6OR	Peterson AFB	nia.bluford@us.af.mil	Nia	Bluford	Maj
122	What constitutes a Wounded Warrior? An examination of the Services' use of the PTSD diagnosis and its affect on military medical retirements	Over the years, we've seen the definition of a Wounded Warrior expanded to include personnel who have never served in combat. We've also seen a large increase in the number of personnel diagnosed with PTSD. What is driving the use of these categorizations and what are the implications on military medical retirements?		801 586-9516	75 MDG	Hill AFB	jeffrey.cook.3@us.af.mil	Jeff	Cook	Lt. Col
123	Improving Cybersecurity Intelligence Support to Weapon System Acquisition	New cyber threats to weapon systems require intelligence to help inform, manage, and mitigate threats. These threats are similar to those which threaten traditional information technology networks but whose effects can be dramatic, if successfully executed, in wartime. While the Intelligence Reform and Terrorism Prevention Act of 2004 encourages the intelligence and counter intelligence/law enforcement communities to share data more closely, maturation of this for cyber security of Air Force Weapon Systems is diffuse and needs to be addressed. As a result of this study, a roadmap for the Air Force to receive more comprehensive and holistic cyber threat assessments from both the intelligence and counter intelligence/law enforcement communities will be provided. This will empower program managers and supporting security, intelligence, and engineering personnel) to better understand and mitigate cyber security risks with higher confidence, deliver more effective weapon systems due to lower cybersecurity risk, and avoid potential costs by designing systems with better knowledge of the comprehensive threat environment.		781-225-2795	AFLCMC/AQ		Linda.Haines.1@us.af.mil	Linda	Haines	
124	Improving Air Force Ability to Meet IMD Requirements	The weapon systems demand for intelligence mission data (IMD) far exceeds Intelligence Community (IC) production capacity. Further, adversaries are increasingly able to utilize software and hardware to dynamically alter their signatures thus rapidly rendering static IMD ineffective. Can saliency and sufficiency testing identify Air Force IMD characteristic priorities thus reducing cost and timelines? What strategies can Air Force acquisitions pursue leading to dynamically reactive or adaptive capabilities that reduce dependency on costly pre-positioned and technically detailed IMD while still establishing the means to maintain the decisive strategic advantage?		937-257-2869	HQ AFMC/A2		daniel.atkins@us.af.mil	Daniel	Atkins	Dr.

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125	Research metrics for assessing the O&S cost drivers	The Air Force Acquisition community has studied the drivers of Operations and Sustainment (O&S) Cost to the Acquisition programs, but has not been able to establish useful metrics that balance the aircraft availability imperative with any cost conscious execution that is completely within the realm of control of the program office or product support provider. There is oversight to the determination of requirements and forecasting algorithms used internally to the program office and externally from Performance Based arrangements under contract. Regardless of the methods used to determine and authorize purchases, additional oversight is needed that neither ties the hands of the Warfighter nor the Product Support Provider (PSP) in fulfilling the missions. Previous Rand studies determined that more should be done to implement service wide philosophies on managing O&S costs and all that goes into the cost, however none have provided solutions. The question of what constitutes sufficient and appropriate sustainment metrics for O&S cost has yet to be answered. Recommend one individual or team of students be assigned to develop flexible, leading metrics for assessing the O&S cost drivers over which the Air Force exerts some type of authority. Provide a timeline for implementation, planning considerations, potential cost/benefit assessment to implement across the Air Force Enterprise for our broad area of responsibility. Each assessment needs to consider a variety of scenarios. They should work with the Air Force Materiel Command to understand the pros of cons of implementing various metrics for existing and planned fleets.		7036936524	AQD	Washington	diana.s.bednara.civ@mail.mil	Diana	Bednara	GS-14
126	Leveraging A Common Commercial Derivative Military Aircraft Platform For Multi-Mission Needs	Throughout Air Force history, baseline aircraft platforms have been leveraged for special mission purposes (e.g., C/KC-135 basic airframe used for Open SKIES (OC-) and reconnaissance (RC-). There are two paths that could be considered for this study: (1) focus on the military utility of leveraging the KC-46 baseline configuration for other Air Force needs; direct replacement for OC/RC use, E-4 replacement, VIPSAM fleet, etc.; or (2) how to establish a generic starting point of a CDA acquisition process to allow all Services to leverage a common baseline aircraft configuration (economies of scale for initial acquisition and sustainment of a common configuration) and then missionize as required for specific roles. The study would assess reduced development and production cycle times along with cost benefits of leveraging an existing, certified configuration. This study could also be expanded or focused on potential JSTARS Recap platforms as well. (Value: Supports corporate Air Force Should Cost and Should Schedule initiatives.)		312-785-8962	AFLCMC/WKE		john.slye@us.af.mil	John	Slye	
127	IT Program Sustainment	AF and DoD agencies that sponsor IT systems need to ensure they fund for software upgrades and sustainment cost. Operating systems that are no longer supported by the vendor for security updates (patches) leaves them vulnerable to attack. AF and DOD are increasingly dependent on IT not only in support of business processes but weapons systems and intelligence gathering as well. IA and information-enabled products provide security to the IT infrastructure, helping to maintain confidentiality, integrity, and availability of the DoD information.	312-260-7735	571-256-7735	LeMay Center/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
128	Readiness-Informed Wargame	AF lacks a convincing means to articulate readiness shortfalls to civilian leadership. Currently, the best we can do is stack ready forces against a demand signal on a chart or graph. This has proven interesting but not compelling to Congress. Short of going to war and seeing how our forces perform, there are few options for showing just how unready we really are. We offer to work with A9â€™s analysts to model performance against a major OPLAN (TBD), given our current state of force readiness.	312-260-7735	571-256-7735	LeMay Center/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
129	War and Mobilization Plan Vol. 5 Planning Factors	The factors listed in WMP-5 Appendix K have historically been used to set the target for programming levels of manpower and materiel support for major weapon systems. However, the methodology for developing these factors has changed over the years and this raises questions about their continued use for the purpose of planning and programming support.	312-260-7735	571-256-7735	LeMay Cener/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
130	Strategic Planning and Performance Measurement for the USAF Nuclear Enterprise	Research for this topic is aimed at gaining a better understanding of how resourcing and policy decisions impact readiness and mission execution in the USAF Nuclear Enterprise. A natural extension of this line of inquiry is the construction of a framework for strategic planning and performance measurement based on such a plan. The result of this research, which could be multiple research efforts, should provide senior decision-makers insight into setting priorities, measuring and managing performance and achieving the desired level of readiness and success in mission execution.	703-693-9747	703-693-9747	HAF/A10	Arlington	david.d.odonnell.civ@mail.mil	David	O'Donnell	GS-15
131	Flying schoolhouses	Should the AF continue down the path of heavily contracted out flying schoolhouses (C-17 for example) especially for RPAs (soon to be largest MWS in AF).	260-4292	571-256-4292		Washington	travis.a.burdine.mil@mail.mil	Travis	Burdine	Lt Col
132	How can the Air Force keep pace with technological advances?	Major force programs often take decades to advance from concept to fielding. In that span of time technology can rapidly progress, increasing the risk that the platforms and munitions we field will approach technical obsolescence soon after deployment. What legal authorities does the Air Force possess in order to accelerate the acquisition processes of its major programs? What type of authorities would be required for reform? How should the Air Force balance oversight steps in the acquisition process with timely, relevant capability development?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
133	Development Cost and Schedule Growth vs Program Milestone Dates: Where in a Programâ€™s Schedule Does It Typically Occur?	Where in a program's schedule does this typically occur? Although much has been written about the causes of acquisition cost growth, research does not exist in relation to how it behaves through time. Specifically, does it typically start to occur (or be declared by the program office) at some planned milestone date like the Critical Design Review (CDR) or First Flight (FF)? Does it typically follow a stair step pattern or is it more curvilinear? Data for this effort could be obtained from program Selected Acquisition Reports (SARs) and Rand studies. Assuming that some predictable pattern for cost and schedule growth is found, it could be used to determine the Fiscal Year (FY) spread for program risk dollars. This should help to alleviate potential FY funding shortfalls.		937-656-5478	AFLCMC/FZCR	Wright Patterson AFB	michael.seibel@us.af.mil	Michael	Seibel	GS-13
134	Modeling and Simulation of Networks for Military Applications	Scarcity of computer network models which can create high enough fidelity in simulations of real-world network architectures for use as immersive cyber mission planning and rehearsal environments. Problem Statement: Scarcity of computer network models which can create high enough fidelity in simulations of real-world network architectures for use as immersive cyber mission planning and rehearsal environments. Task: Assist AFSPC in developing requirements for an Air Force cyber range using a modular development framework which may utilize or adapt existing software tools.	314 692-2914	719-554-2914	HQ AFSPC/A2/3/6WO	Colorado Springs	michael.moseley@us.af.mil	Michael	Moseley	Maj
135	Optimization of biomarker test as a weight loss tool for military members	DoD is developing a biomarker test that enables military members to determine if they are loosing weight before weight change is detectable via scale; provides immediate feedback of effectiveness: reinforces good behavior or impetus to make changes in diet and exercise routine; Researcher may apply decision theory based analysis to optimize application of biomarker test. SBIR: https://sbirsource.com/sbir/topics/89224-rapid-indicator-of-potential-for-weight-gain-loss-amp-trending		843 452-5117	AFMSA/SG5	Falls Church	scott.walter2@montana.edu	Scott	Walter	Mr
136	Fighting ISIL	An exploration of the US strategy for fighting and defeating ISIL including such things as: 1) under what authorities the US would use to send troops to fight ISIL, 2) is air power enough to defeat ISIL, 3) what is the best course of action to defeat ISIL, 4) how should the international community fight ISIL with social media, and 5) what should be the roles of Turkey and Iran be in fighting ISIL. This topic is proposed by the Royal Jordanian Air Force (RJAF) Commander Maj Gen Mansour al Jabour, who lost Capt Moadh al Kasasbeh in their own fight against ISIL. He is eager to engage the Air University on studying this common enemy. Contact information listed is for US Air Attache to Jordan Lt Col Matt Yocum.		2022317234	RJAF	DPO	yocummw@state.gov	Mansour	al Jabour	MG, Jordan AF Cdr
137	Should the military consider Human Domain as a new operating domain?	Currently, the DoD recognizes five domains: air, land, sea, space, and cyber. Domains justify the existence of the services and the development and acquisition of resources. For example, the requirement to operate in the air domain justifies the existence of the Air Force along with the acquisition of platforms and capabilities such as aircraft and satellites. Currently, military strategy focuses on the need to prepare for a high end threat against peer and near-peer threats such as China, Russia, Iran, and North Korea. Additionally, todayâ€™s military forces must also be prepared to address threats posed by terrorist and terrorist organizations. The five recognized domains sufficiently focus on the high end threats; however, they do not adequately address threats posed by terrorist organizations. The joint staff is currently working on a concept known as Human Aspects of Military Operations (HAMO) which addresses concerns for military forces operating in lower threat environments which are primarily population focused. While the recognized domains adequately address the high end focus, the verdict is still out on whether the HAMO Concept adequately prepares U.S. forces for human centric operations such as countering terrorists and terrorist organizations. The focus of this study is to determine whether the joint staff should consider the need to consider the Human Domain as an accepted joint force operating domain.	312-579-7181	850-884-7181	A8X	Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans

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138	What are the implications of future RPA missions in the ANG?	Explore options for RPA operation career development to include recruiting, training, retention, absorption, and career development. What are the obstacles and options for domestic use of RPAs? How should ANG support its â€œin-garrisonâ€ operations including medical, family support, dual-status command, etc.?	703-222-1977	703-692-1977		Washington D.C.	sean.f.conroy.civ@mail.mil	Sean	Conroy	Mr.
139	How can the State Partnership Program relationships be best leveraged in support of Air Force Strategic Master Plan objectives to attain strategic goals?	The State Partnership Program has a worldwide footprint with some relationships dating back to 1991. The dual role of the National Guard as a traditional national defense force and a state controlled defense force has the capability to bring together key military and civilian players. This study will provide a look at how to best leverage SPP relationships, capabilities and capacity to attain strategic goals.		571-256-7479	SAF/IAPS	Washington	lea.l.devine.mil@mail.mil	Lea	Devine	Lt Col
140	SOF as a strategic instrument of war: How to employ SOF to	SOF have become one of the primary military capabilities for senior policy makers and DOD leaders to employ in the uncertain environment of today. This reflects a shift from the use of conventional forces (CF) to a heavy reliance on SOF. What are the implications for U.S. strategy for senior leader reliance on SOF? How should SOF be best employed to achieve national security objectives? What is the effectiveness of SOF: their role; their use as a strategic tool of warfare; and their ability to meet the security needs of the United States and the international community? What are the impacts of CF budget and personnel reductions upon SOF capabilities (equipment and personnel recruitment)?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
141	Unconventional Warfare (UW): Is America politically prepared to support any expanded UW mission in the world?	UW has become an increasingly important tool of U.S. policy as resistance forces in many parts of the globe organize to confront oppressive regimes. This proposal examines the success and failures of past UW operations to include: the Office of Strategic Services in World War II, Russian UW in the Ukraine/Crimea, the initial stages of Operation Enduring Freedom with the U.S. in support of the Northern Alliance, Contras in Nicaragua, and the U.S. in Operation Iraqi Freedom in partnership with the Kurds. Other considerations: â€¢ Are SOF trained and equipped to capitalize on opportunities and enable resistance operations in times and locations of choice as approved by U.S. authorities? â€¢ In each example, describe the conditions; how was success defined? â€¢ What were the common denominators for success or failure? â€¢ What were the best practices? â€¢ Are the American people and political leaders prepared to support expanded UW given ethical questions and the long-term demands of UW?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
142	Identifying, assessing, developing, and motivating potential partners in irregular warfare (IW): Supporting effective partnerships	Recent conflicts have highlighted opportunities and policy dilemmas in the conduct and support of IW. In most of these conflicts, the United States has partnered with state or non-state actors to support or oppose an existing government. What are the best practices and other mechanisms for understanding, identifying, assessing, developing, and motivating potential partnersâ€™ behavior, objectives, organization, and composition to successfully partner with SOF? Which partnership efforts are most effective and most cost-efficient? What other interests or issues must be considered (stability, capability, etc.) when partnering with others in conducting and supporting IW?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
143	Common Baseline Definition for Supply Support Integration between AFLCMC and AFSC Supply Chain	Request analysis of a common baseline between weapon system supply support integration requirements and organic supply chain organizations' capabilities, enabling a collaborative overlay of a common (AFLCMC/AFSC/DLA) SCOR model. From this, it is envisioned a capability would be optimized for common baseline analysis of operational supply support performance, fully burdened cost of material and comprehensive supply chain risk mgmt.; derived from an integrated, weapon system focused lens overlayed to comprehensive supply chain maps. An analysis could illuminate a potential common baseline between weapon system ("AFLCMC") supply support integration requirements and organic ("AFSC" or "DLA") supply support capabilities such that fully informed product support decisions could be achieved more efficiently and effectively.	884-8450	405-734-8450	429SCMS/CL		Jeffrey.slayton@us.af.mil	Jeffrey	Slayton	
144	Quantifying Workload Assessment	The DoD Third Offset Strategy identifies five areas for future military dominance: learning machines, human-machine collaboration, assisted human operations, human-machine combat teaming, autonomous weapons. Three of these call for humans working with machines, sharing decision-making, sharing tasks, and supporting each other in the performance of the mission. Foundational to much of the associated technology development is the idea that human workload can be measured and shared such that the human and machine system can collaborate. Current ability to measure and predict workload across a vast array of tasks in any mission is challenging, but is critical to design systems to achieve the DoD goals of human-machine collaboration, assisted human operations, or human-machine combat teaming. Explore the challenges in predicting workload and design guidelines when developing a human-machine team to facilitate strategies in S&T as well as future warfighter system design.	785-8222	937-255-8222	711 HPW/CL		rajesh.naik@us.af.mil	Rajesh	Naik	Dr.
145	Tanker Recapitalization Phase II Pre-Analysis of Alternatives	Air Mobility Command is in the early stage of scoping Phase II of the Tanker Recapitalization effort (commonly referred to as "KC-Y"). The desired end-state is for KC-Y production to commence by CY2028, coinciding with final delivery of the 179-aircraft KC-46 program. This study would focus on alternatives, and associated schedules, to meet a CY2028 timeframe, while complying with DoD 5000.02 requirements and milestones for an ACAT I program. (Value: Direct benefit to HQ AMC in their development planning effort.)		312-785-8962	AFLCMC/WKE		john.slye@us.af.mil	John	Slye	
146	Cognitive sciences for closed loop training of Cyber/RPA operators	Investigate uses of Cognitive Load Theory and other cognitive science theories to provide insight into closed loop training of cyber analysts and/or remotely piloted aircraft operators. Explore real-time application of physiological and cognitive measures in operational environments leading to creation of improved work environments. The goal of the closed loop system is to identify/quantify workload assessments and augment various factors accordingly.	785-8222	937-255-8222	711 HPW/CL		rajesh.naik@us.af.mil	Rajesh	Naik	Dr.
147	What are the operational implications of conducting battle damage assessment (BDA) through sampling and extrapolation versus 100% post-strike confirmation?	Given the current accuracy and reliability of precision munitions can battle damage assessment (BDA) be effectively and reliably be conducted through sampling and extrapolation versus 100% post-strike confirmation? Can this approach along with a tighter integration with operational campaign effects assessments provide a risk averse decision maker acceptable BDA? How would this approach impact the operational commanderâ€™s risk calculus and what criteria are necessary to gain a commanderâ€™s trust in such an approach? This effort would support the AFRL/RI Full Spectrum Targeting Program, Automated Battle Damage Assessment Project by providing operational insights and an initial feasibility assessment on alternative approaches to conducting BDA and would further guide the development of technologies supporting BDA. The current BDA paradigm is highly risk averse in that targets are presumed live until proven dead. Target status typically verified though combat assessment of the effectiveness of individual strikes, most often based on analysis of EO imagery. Due the risk adversity of decision makers and the quality of BDA provided by EO imagery, decision makers often refuse to accept BDA not based on this source. Under this current paradigm the demand for a high degree of confirmation of individual strikes would quickly exceed the capacity of the ISR enterprise during a large major combat operation. Given the current accuracy and reliability of precision munitions this high degree of post-strike verification may in fact be an unnecessary use of valuable ISR resources. In addition, air campaign operational effects assessments are often similarly based on combat assessments of individual targets. Operational effects are usually inferred through counts of targets killed versus observation of the desired effects themselves. An alternative could be to extrapolate BDA results from the assessment of a sample of representative targets within a large scale attack or target complex. This could be complemented by a refocusing of the operations assessment effort from the individual targets to the overall effects which may lend themselves to verification by a broad spectrum of collection methods other than EO imagery. A tightly coordinated and synergistic effort between the BDA cell and the operations assessment team could provide the commander a holistic and decision quality assessment of the air campaign. This approach could be enabled by new data analytic and information fusion technologies. Such a refocusing from individual targets to effects could require a fundamental change in the commanderâ€™s understanding and calculus of operational risk. This has to be understood as well as the criteria necessary to gain a decision makerâ€™s trust in such a process. This proposed research would consist of a deep dive into and extensions of approaches considered in the 2002 School of Advanced Air Powers Studies thesis titled â€œAssessing Airpowerâ€™s Effects: Capabilities And Limitations Of Real-Time Battle Damage Assessmentâ€ authored by Lieutenant Colonel John T. Rauch, Jr. In light of new technological developments in precision munitions, data analytics, and data fusion a relook at these BDA alternatives might yield fruitful insights.		315-330-4263	AFRL/RIED	Rome	joseph.raquepas@us.af.mil	Joseph	Raquepas	Dr
148	Global Security and National Security implications of the acceleration of life science and biomedical technologies and	Analyze the acceleration of life science and biomedical technologies and capabilities and the associated risks. Examine 'dual -use dilemmas' of current and future capabilities within AFMS/MHS research programs including exploitation of 'big data'. Apply a risk and benefit assessment framework for each individual scenario along with the mitigation strategies.		703681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15

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149	Improving Air Force Ability to Meet IMD Requirements	The weapon systems demand for intelligence mission data (IMD) far exceeds Intelligence Community (IC) production capacity. Further, adversaries are increasingly able to utilize software and hardware to dynamically alter their signatures thus rapidly rendering static IMD ineffective. Can saliency and sufficiency testing identify Air Force IMD characteristic priorities thus reducing cost and timelines? What strategies can Air Force acquisitions pursue leading to dynamically reactive or adaptive capabilities that reduce dependency on costly pre-positioned and technically detailed IMD while still establishing the means to maintain the decisive strategic advantage?		937-257-2869	HQ AFMC/A2/5	Ludlow Falls	daniel.atkins@usaf.mil	Dan	Atkins	Dr. (SES)
150	Information Operations Capability and Sustainment	Review AF IO capability in light of personnel reductions and budget cutbacks for formal training. Understand the impact of conducting this mission with personnel from different AFSCs. (AF does not have a single, unified AFSC for IO.) Understand the impact of personnel with no prior IO experience receiving just-in-time training prior to deployment to joint IO positions. Look at the impact on oversight for IO capability in the wake of lead MAJCOM staff reductions.	312-260-7735	571-256-7735	LeMay Center/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
151	Where and how should the integration of air, space, and cyber occur?	Much is written in the Air Force Future Operation Concept (FOC) and the Air Force Strategic Master Plan on the integration of air, space, and cyber, but little is proffered on the where and how it can or should be accomplished. Command and Control, a core function of the Air Force, plays a central part in synchronizing the domains while at the same time raising numerous issues on how to achieve this FOC goal. This research should examine how planning and execution is done today and extrapolate to where and how warfighting domain integration can and should occur. Will the actions of a plans division in an Air Operations Center (AOC) be the foundational nexus of effects integration for multi-domain operations? If not there, then where and how? Some may argue that the Target Effects Team and the Master Air Attack Planning (MAAP) Team are now the central coordinating point in an AOC to achieve our current level of domain integration, but even the name of the MAAP Team shows our propensity to kinetic actions. With doctrinal concepts of owning and gaining commands and supported and supporting commanders, the integration of effects from numerous â€œsuppliersâ€ becomes more convoluted. For example, will a satellite or a cyber capability ever CHOP to a supported commander? If not, then how can a supported planner be given authority to commit assets to produce a truly integrated tasking order? There are other competing pressures as to the â€œhowâ€ of this problem when viewed across the doctrine, organization, training, material, leadership, personnel, facilities, and policy (DOTMLPF-P) equation. This research may be remiss should it dwell on any one area at the expense of others. For example, while doctrinal and organizational aspects could be examined in light of supported and supporting roles in joint operations, they are only two areas in â€œtensionâ€ across DOTMLPF-P. Likewise, while material solutions may beckon a solution, the pursuit of a â€œkiller appâ€ that is not supportive of the other competing pressures in DOTMLPF-P may be a non-starter. What may be more insightful would be to examine what technological shortcomings today, if any, prevent an integration capability. Is there really any material barrier? Are there examples of consumer technology that could be adopted? For example, is a social media-like solution a possibility as we â€œcrowd-sourceâ€ the supported MAAP from a pool of supporting air/space/cyber capabilities and their subject matter experts that are spread across the globe? Ideally, using the scientific method, the researcher should pose a hypothesis as to where and how multi-domain integration will occur and then prove or disprove the hypothesis. However, in this situation, we seek to understand the competing pressures. As such the initial hypothesis will naturally morph as additional material is discovered during research.		315-330-4175	AFRL/RI	Rome	robert.mchale.1@us.af.mil	McHale	Robert	Civ
152	Effectiveness of AF CBT training	Medical personnel are expected to complete 60-80 hours of computer based training prior to deployment, this does not include annual medical group training (SWANK, ADLS, Med Learn, JKO, and Mosbys) Commanders are focused on ensuring everyone has assigned training completed, but the effectiveness of training does not seem to be a priority.		850-883-8164	96 IPTS/SGIC	Eglin AFB	carole.farley@us.af.mil	Carole	Farley	Col
153	Cost Metric for Fleet Comparison	No current cost metric (e.g., operational or ownership cost per flying hour, sortie, TAI, available aircraft, etc.) stands alone in allowing fleets to be compared, even within a weapon system type. A new metric or combination of metrics could be developed that would allow such comparisons, such as CAPE element-specific normalizations as appropriate.		937-904-5710	AFLCMC/OZA	Wright Patterson AFB	samuel.wright.6@us.af.mil	Sam	Wright	GS-14
154	Decentralized Civilian Staffing	Request study on the benefits of decentralized civilian staffing and classification services across the Air Force. This initiative has Center- and Command-level interest and the potential results would have an AF-wide impact, and allow the AF to create a world-class human resources system that aligns with the Air Force Sustainment Center goals and objectives. The probability of success is high due to implementation being within Air Force control.		405-739-2565	AFSC/DPPP	BLDG 3001 POST 1AH 191A	david.traynor@us.af.mil	David	Traynor	Mr.
155	Current AF fitness standards	Research current AF fitness standards/(theater physical training) to determine suitability for performance in a denied environment.		808-388-8791		JB Pearl Harbor-Hickam	james.sandvig.1.ctr@us.af.mil	James	Sandvig	Dr
156	The Effect of Federal Acquisition Regulation on Medical Innovation, does it go too far?	The FAR provides systematic risk mitigation practices in major systems development, but does this hamper the ability to develop emerging medical technologies? Is an alternative or abbreviated version of JCIDs appropriate for medical research and development? The objective should be to analyze industry standard research and development practices (cost, schedule and performance) relative to federal medical development practices and evaluate opportunity cost of applying line acquisition practices to medical development at levels below ACAT level 3 oversight. Is another ACAT designation appropriate for smaller funded medical efforts?		703681-8091	AFMSA/SG5	Falls Church	kevin.r.kupferer2.mil@mail.mil	Kevin	Kupferer	Maj
157	Any topic related to HHS Global Health Strategy Objective 4 - "Increase the Safety and Integrity of Global Manufacturing and Supply Chains"	Identify AFMS role. Are there research gaps? Refer to globalhealth.gov		703 681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15
158	Linking an Exposure Science Data Analytics/Informatics IMS to AF Mission Sets and Major Weapons Systems	Establishing an Individual Longitudinal Exposure Record (ILER) for members/veterans of the Armed Forces remains a major initiative for ASD Health Affairs.Â AF Bioenvironmental Engineering (i.e., AFSCs 43E and 4B) plays a key role in data collection, analysis, and entry for the ILER; and continues to shape and populate the Defense Occupational and Environmental Health Readiness System (DOEHRS).Â How does the AFMS transition from an exposure repository to an Information Management System useful in real-time analysis of mission sets and weapons systems against Bioenvironmental Engineering exposure science work?Â		703 681-6988	AFMSA/SG3PB	Falls Church	anthony.j.cagle.mil@mail.mil	Anthony	Cagle	Maj
159	Hypersonics: The Research, Development, Flight Test and Evaluation	Described by many as the "next stealth", the application of hypersonic weapons offers disruptive advantages for military forces by establishing faster target access over a wider area of operations, and enabling the warfighter to get inside the decision making loop of the enemy. Many unanswered questions exist on how best to test hypersonic weapons and validate lethality/vulnerability modeling & simulation tools (e.g., JMEMS). USAF test capabilities exist to perform parts of the kill chain, but no complete end-to-end test strategy exists for this new class of very high velocity precision weapons against threat representative targets. This study will address future flight test requirements for hypersonic technologies and systems. Hypersonics is recognized as a game changing technology. Testing has been limited to ground tests which do not capture the environment without compromises or flight testing to capture data on one or two areas of interest (X-43, X-51, HIFiRE). What is needed is reusable, low cost flight testing for hypersonic technologies akin to the X-15. An assessment is needed to review the classes of technologies (materials and structures, seekers, apertures, propulsion, etc.) and identify those technologies that would benefit from this approach. Then the study should review potential flight test vehicles such as X-34 and derivatives, XS-1, and new designs and develop recommendations for robust, reusable, low cost flight testing for hypersonics.	872-5622 785-7081	(937) 255-7081	96TW/XP & AFRL/RQH		george.williams.1.@us.af.mil; robert.mercier@us.af.mil	George	Williams	
160	SOF and war by proxy: Strategic asymmetry and points of advantage	Proxy wars with external support for combatants in civil war situations are common in warfare, yet arguably the least understood aspect of modern conflicts. A comprehensive understanding of the types of proxy interventions since 1945, their magnitude, intent, and outcome, can provide inferences for USSOCOM strategies for proxy interventions and UW. Does USSOF have a valid knowledge base on the â€œsuccessâ€ or â€œfailureâ€ of proxy wars since 1945? Safe-havens, financial flows, military assistance, military training, UW, level of economic development, size of adversary CF, and air superiority are proxy war advantages, are there others? What case studies are relevant for examining strategic asymmetries and the points of comparative advantage between the opposing forces?	312-299-3674	813-826-3674	JSOU=CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
161	What is the role of NG/ANG cyber units in domestic operations?	The Army and Air National Guard are looking to standup cyber units in every state. Explore opportunities and obstacles to ANG contribution to domestic cyber security. What is the role of the cyber unit within its state? What are the advantages of having a cyber unit in a state? What are the obstacles to domestic cyber operations?	703-222-1977	703-692-1977		Washington D.C.	sean.f.conroy.civ@mail.mil	Sean	Conroy	Mr.

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162	Are there alternative models for recruiting high demand skills such as RPA and cyber?	One of ANGâ€™s strengths is its ties to communities and civil industry; for example, ANG and the airlines â€œsharingâ€pilots with each building up the â€œvalue addedâ€of the other. Are there similar opportunities in other industries such as RPA and cyber? For example, partnership with local civilian companies to give hiring priority for highly skilled cyber positions to ANG cyber experts. How might such a corporate-military partnership work? What are the implications for transferring civilian and military certifications?	703-222-1977	703-692-1977		Washington D.C.	sean.f.conroy.civ@mail.mil	Sean	Conroy	Mr.
163	Combat and Combat Support Utilization of Air Force Physician Assistants in support of OEF, OIF, OND and OFS 2001-present. Critical analysis of lessons learned and impact on future operations	Describe the evolving role of the physician assistant in the wartime setting, as well as how that optimized utilization could positively impact the strategic AF medical enterprise in garrison and in future operations.		757 764-6272	AFMOA/SGHM	San Antonio	rene.chadwell@us.af.mil	RENE	CHADWELL	COL
164	Cost Effectiveness and Patient Safety Comparative Analysis of AF Physician Assistants	Critical, trended analysis of cost effectiveness and patient safety data associated with Physician Assistant Utilization in the Air Force over the past 20 years.Provide comparative analysis of data for both topics to best inform strategic manpower and utilization decisions in the AFMS		210-395-9146	AFMOA/SGHM	San Antonio	rene.chadwell@us.af.mil	RENE	CHADWELL	COL
165	How Service-specific Training of Space Cadre Affects Joint Environment Utility	By law each military Service is required to maintain a cadre of space professionals. The requirements for these professionals are determined by the individual Services based on their specific needs. However, U.S. Strategic Command has argued that this Service-specific training makes them ill prepared for assignments to joint billets. How should space cadre be trained in order to provide the maximum benefit to the joint force commander? Lines of inquiry include: â€¢ Should overarching Joint Space Training be required for all space cadre members as a prerequisite or adjunct to individual Service space cadre training? (Analogous to the requirement for all Marine officers to attend the Basic School to understand the fundamentals of the infantry before learning their specific occupational specialty to ensure a certain level of proficiency and understanding.) â€¢ If Joint Space Training is recommended, at what point in a career should it take place, and what organization should administer and resource this training? â€¢ Are their similar parallels in other military career fields (for example: aviation or acquisition)? â€¢ What are the drawbacks or disadvantages of a Joint Space Training requirement?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
166	Ethical Decision-Making Situations faced by Airmen	- The increased reliance on human-computer systems interactions in dynamic environments with ambiguity and uncertainty creates opportunities for ethical decision making situations to become more pronounced and have an impact on choice and outcomes that have impactful consequences such as life-death situations. There is little to no research documenting ethical dilemmas and situations between Airmen, artificial intelligence and computers at the unclassified, let alone classified, levels. - Objectives: Determine the types of ethical decision making situations faced by Airmen and identify key characteristics of these situations. Investigate the extent to which Laws of War and/or Rules of Engagement are either consciously or subconsciously applied in these settings. - The potential classification levels of the information could be as high as TS/SCI. Ultimately; the idea is to re-write the scenarios/situations so they can be tested in other research done at the unclassified level.	315 330-4125	315 330-4125	AFRL/RI	Rome	Timothy.Kroecker@us.af.mil	Timothy	Kroecker	Strategic Planning
167	F-35 Weapons Limited Capability	- Why is the F-35 so limited in its weapons capabilities? - Objectives -- To understand F-35 Weapons capabilities & limitations - Missions -- Air Dominance - Desired Insights -- Understand possibilities and limitations of F-35 weapon Types"	312-986-7274	937 656-7274		WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
168	Return on Air Force Investments	Various important AF corporate decisions are made based on anticipated future savings or promise of benefit. Often the alternative proposal from the status quo requires an Economic Assessment or Cost Benefit Analysis followed by an investment of funding. The range of decisions include, but are not limited to, Energy initiatives, Demolition, Base Realignment and Closures, centralization , etc. Select a representative sample of past decisions at all levels (AF, DRU/MAJCOM, Installation) to study the actual return on investment. Were savings actually realized? Next, develop an approach and an implementable process and tool that continously captures data from past decision to assist senior leaders at all levels to make better informed decisions. Desired endstate: Corporate process decisions are informed and made based on the feedback loop of past decisions.	969-7996	(210) 395-7996	AFIMSC/RMFA		quy.nguyen@us.af.mil	Quy	Nguyen	Lt Col
169	Should Cost Approaches For Air Force Sustainment Activities	To date, Should Cost initiatives have primarily focused on the acquisition life cycle. This study would evaluate opportunities within the sustainment life cycle for identifying and reporting on initiatives that could be implemented across many Air Force programs in sustainment. (Value: Air Force wide benefit in establishing a roadmap for communicating sustainment-centric Should Cost initiatives).		312-785-8962	AFLCMC/WKE		john.slye@us.af.mil	John	Slye	
170	Cyber security of the manufacturing facilities in the US	How safe is our industrial base against hackers. Hackers had struck an unnamed steel mill in Germany over the holidays by manipulating and disrupting control systems to such a degree that a blast furnace could not be properly shut down, resulting in "massive"—though unspecified—damage. Is the US manufacturing base protected?	674-4597	937-904-4597	AFRL/RXM		john.russell.23@us.af.mil	John	Russell	
171	Modernization Strategies for KC-46	The baseline requirements for KC-46 were established at contract award. Given the fixed-price nature of the contract, the program has been under a mandate to maintain requirements stability (i.e., "no ECPs"). However, once the EMD lifecycle has completed, production will continue through CY2027. During that timeframe, there will certainly be user-identified capability upgrades that would have to be developed and either retrofit or ECP'd onto the production options. This study would research successful modernization strategies that have been employed across the Service (e.g., F-22, C-17) as well as the Department and provide a range of options, with pros/cons, and costs to consider. (Value: Provides early Market Research alternatives for the KC-46 to consider as the program formulates future modernization plans.)		312-785-8962	AFLCMC/WKE		john.slye@us.af.mil	John	Slye	
172	USAF support equipment and its impact on weapon system performance and mission accomplishment	Explore the impact that the USAF Support Equipment & Vehicle (SE&V) and Automatic Test Systems/Stations (ATS) inventory equipment items have on weapon system performance. Is there a direct and quantifiable correlation between the mission capability status and condition of support equipment and the actual aircraft weapon system mission capability/performance and related mission accomplishment itself? USAF support equipment is broken down into two categories: peculiar (also referred to as unique) and common. Both the SE&V and ATS Program Offices reside within the AFMC's AFLCMC ACS/PEO community, located at Robins AFB, GA. There are numerous S&V and ATS support equipment items required to support the troubleshooting, repair, and testing of aircraft (and other support equipment) discrepancies. Additionally, there are numerous support equipment items required for the testing and loading of various armament and armament systems. Many support equipment items are aged, face obsolescence issues, and are in need of replacement, overhaul, and service life extensions. Given the understandable no-fail approach taken by the aircraft maintenance & munitions communities, it is rare (given what is at stake) that degraded support equipment conditions are "allowed" to practically manifest itself in degraded aircraft weapon system performance and mission accomplishment. ISSUE: USAF "support" equipment remains in need of refresh or replacement during its life cycle and the life cycle of the weapon system the equipment is supporting. While the maintenance and sustainment communities may be able to provide readiness statistics on the equipment itself, until a more direct and quantifiable correlation can be drawn between support equipment life cycle degradation-related issues and the impact on weapon system performance and mission accomplishment, it continues to remain a challenge to obtain critical funding within the support equipment arena. Can a direct and quantifiable correlation between degraded support equipment and weapon system performance/mission accomplishment be derived?	986-3965	937-656-3965	A4M		donald.neal.5@us.af.mil	Don	Neal	Civ
173	Viability of Current OSD Strategic Planning and Potential Options	a.) Perform an overall assessment of OSD and service-level strategic planning b.) Assess impact of guidance on subordinate planning and acquisition activities c.) Evaluate options to improve strategic planning to better align subordinate activities with the strategic plan d.) Evaluate implementation options on existing organizations and programs. (Expectation is to address planning down to at least the service capability and development planning levels and PPBS funding streams/processes.)	875-5908		AFLCMC/XZW		gregory.barnette@us.af.mil	Greg	Barnette	Civ

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174	Development of patient preparation criteria for movement/transport IAW exisiting joint cargo guidance	Examine the Joint Inspection of Cargo process and developed similar criteria/preparation guidance for patient movement		618 229-6205	HQ AMC/SGX	Scott AFB	linda.guerrero@us.af.mil	Michaelle	Guerrero	Col
175	12. F-35 Platform Transition Beddown	Successful beddown requires careful management and consideration of permanent party and TDY personnel and their training. Late program changes and increased personnel throughput (permanent party and TDY) can adversely affect beddown success. JSF-unique maintenance and program details can introduce considerations not experienced during other weapon system beddowns. While lessons from other platforms (F-22, MQ-1/9) are beneficial, utilizing experienced F-35 personnel is instrumental.	312-260-7735	571-256-7735	LeMay Center/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
176	How might the USAF accurately determine reliability of Nuclear Command, Control and Communications (NC3) systems?	Nuclear-capable bombers, weapons and Intercontinental Ballistic Missile weapon systems have documented, validated reliability metrics. These metrics are supported by data collection and integrated to provide Weapon System Reliability statistics of sufficient granularity to inform planning decisions. Although AFGSC has made significant recent progress in collecting Nuclear Command, Control and Communications system metrics through a variety of means and sources, documenting overall reliability for NC3 systems, and therefore the system of systems, remains difficult. AFGSC/A3 requests the Air University devote research into what metrics should be collected on individual systems to document their reliability, and how system reliability can be tied to system-of-systems reliability.	781-9954	318-456-8681	AFGSC/A3Y	Barksdale AFB	montague.samuel.3@us.af.mil	Montague	Samuel	Mr.
177	What are the extents of effects of nuclear bursts on communications across the electromagnetic spectrum (EM)?	There is little consolidated written information regarding the effects of electromagnetic pulse (EMP) and scintillation of the atmosphere following nuclear burst(s), especially when the nuclear events are expected to be separate, isolated events. AFGSC needs better understanding of how proximity, yield, and altitude of burst affect the EM spectrum, especially those portions used for communications. Research should answer how long communication recovery times will be based on a variety of nuclear burst attributes and scenarios. Documentation of the geographic extent of nuclear effects on communications is also desired. This information will be used by AFGSC to make planning and budgeting decisions for sustainment and acquisition activities for Nuclear Command, Control and Communication systems.	781-9954	318-456-8681		Barksdale AFB	montague.samuel.3@us.af.mil	Montague	Samuel	Mr.
178	Acquisition of Nuclear Systems in an Interagency Environment	The acquisition, modernization, and/or sustainment of nuclear weapon systems are an interagency endeavor. The delivery platform, of the weapon system, is developed/modernized/sustained by the DoD (specifically the Department of the Air Force and the Department of the Navy). The warhead, however, is developed/modernized/sustained through the DOE (specifically the National Nuclear Security Administration, NNSA). To bridge the current seams, interagency groups exist, called the Project Officer Groups (POGs) co-chaired by a DoD representative and an NNSA representative. The study should review the strengths/weakness of the existing process and recommend a range of improvements, up to and including a wholesale change in the construct outlined in DoDI 5030.55.		505-846-1678	AFNWC/ST	KIRTLAND AFB	edward.jakes@us.af.mil	Edward	Jakes	Col
179	Reestablishing the Air Force Nuclear Enterpriseâ€"An Action Plan to Make Lasting Change in the areas of Requirements and Resources	RESEARCH OBJECTIVE: â€¢ Articulate and summarize the NDO mission set and driving regulations and treaties to include leadership guidance/intent â€¢ Understand and depict the requirements generation process for the Nuclear Enterprise â€¢ Summarize the adequacy of current resourcing for the existing NDO mission â€¢ Define the minimum acceptable requirements for future NDO systems and the adequacy of the current plan and anticipated programmatics â€¢ Depict and articulate the competing/complimentary roles of the various stakeholders â€¢ Identify overlapping efforts within the Service which contributes to Enterprise inefficiencyâ€"Identify gaps which are not being adequately addressed, but could be if we reallocated resources (from overlapping efforts) to better address the capability gaps â€¢ Provide recommendations with alternatives and suggested Lead OPRs to ensure operational relevancy to the far-reaches of the planning horizon (30 years) ADDITIONAL BACKGROUND: â€¢ The USAF Nuclear Enterprise (NE) is composed of the Air Force nuclear forces, supporting logistics structure, command and control organizations, weapons sustainment and modernization activities, and activities of relevant headquarters, agencies, and centers. â€¢ Multiple MAJCOMs, operational stakeholders and critical staff organizations are involved in the management, direction, and oversight of the NE; however, there is a deficiency which precludes a single voice and continuity in message when it comes to resources and requirements â€¢ The objective of this effort is to establish a vision for how the NE can best ensure a single and consistent message with regards to requirements and resources from a Title 10 perspective, which is so critical to USAF organize, traine and equip responsibilities â€¢ Key source document include: The Creedon Report, General Welch and Admiral Harvey Independent Report, the Rand Report, The Defense Science Board Review, The Air Force Comprehensive Assessment of Nuclear Sustainment, and other Joint/Service Strategies and Studies.		505 853-7711	AFNWC/XP	Kirtland AFB	gregory.kern.5@us.af.mil	Gregory	Kern	GS 14
180	Cyber Deterrence	What is cyber deterrence? What would it look like? What would the US attempt to achieve? How would the US communicate it cyber prowess to deter others? How would the US know it had been achieved? Is cyber deterrence another mutual assured destruction?		703-697-0447	AF/A5R	Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ
181	Deterrence in Cyberspace	How best should we achieve deterrence in cyberspace operations? Do we overclassify some capabilities that could better be used to demonstrate credible deterrent capability?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	PETERSON AFB	william.mcculley@us.af.mil	William	McCulley	Lt Col
182	Impact of Military Health System's Electronic Medical Records (AHLTA and CHCS) on Patient Safety outcomes	Determine if current Military Health System's Electronic Health Records (AHLTA and CHCS) improving overall Patient Safety Outcomes		808-388-3405	PACAF SG	JB Pearl Harbor-Hickam	joseph.anderson@us.af.mil	Joseph	Anderson	Col
183	Accuracy Comparison: Detailed Ground-Up/Engineering Costing Methodology vs. Analogy Based Methodology	Cost estimating is approached with two methods: detailed ground-up/engineering and the analogy based methodology. Is it possible to improve estimating results, and do so with less work by using an analogous approach to the estimate instead of a detailed approach? For the most part, estimates follow one of two paths: the detailed ground-up engineering based estimate and the analogy based estimate. Research supports that the more detailed estimates accrue more error and therefore produce less satisfying outcomes. This study should compare the two approaches to analyze which method produces more accurate estimates over a given time frame with milestones at the 1 year point, 3 year point and 5 year point. Accuracy should be defined as how close the estimate comes to the program actuals. This effort should involve going back to the original cost estimate, characterizing it as a highly detailed or analogous estimate as well as follow the actuals over time; trends should develop after repeating multiple times.		937-656-5469	AFCCMC/FZCE	Wright Patterson AFB	jimmie.crowell@us.af.mil	Jimmie	Crowell	GS-14
184	Organic versus CLS Depot Maintenance Cost Comparison	Current insight into the relative costs of organic and CLS sustainment options is low due to due to a lack of controls (e.g., fleets either sustained one way or the other, but not both, CLS contracts fully funded while organic efforts are typically not, etc.). A study that would normalize effects of the lack of controls would be useful in the strategic decision-making process.		937-904-5710	AFCMC/OZA	Wright Patterson ARB	samuel.wright.6@us.af.mil	Sam	Wright	Dr. (GS-14)
185	Implications of Price Escalation in Projecting Lifecycle Costs	The current push to include price escalation (formerly cost growth above inflation) in lifecycle cost estimates is intended to better describe actual future system costs; however, the inability to fully appreciate the meaning of price escalated future dollars leads long-lived programs to appear unaffordable, without an increase in program requirements. This practice could lead to bias against programs with longer lifecycles. A study is needed to fully investigate the validity of using price escalation when reporting lifecycle (particularly the sustainment portion) costs.		937-904-5710	AFCMC/OZA	Wright Patterson AFB	samuel.wright.6@us.af.mil	Sam	Wright	Dr. GS-14
186	Compare/Contrast/Assess methodologies for BPC, SFA, and FID	Compare/Contrast/Assess the methodologies used by the service components to Program, Plan, Budget, and Execute their respective BPC, SFA, and FID programs. This topic will specifically address the process in which competing priorities among COCOMs are de-conflicted and resourced.		850-883-4322	6 SOS/DO	Hurlburt Field	michael.hreczkosij@us.af.mil	Michael	Hreczkosij	Lt. Col
187	Aeromedical Staging Facilities (ASFs): a casualty of war. The lost and/or forgotten competency of a garrison capability.	ASFs morphed to CASFs (Contingency ASF) (new term ERPSS - enroute patient staging system) at the outset of OIF. Although OIF and OEF have long ended and casualty flows from current overseas operations are significantly on the decline why do CASFs remain? Is it because those responsible for making the decision don't know or don't remember the true capabilities of an ASF? Did our 12 years of OCO erase it? Can a generation of medical Airmen who have never known an ASF or been part of an ASF execute its mission? Is there an ASF reconstitution plan? Why isn't there only a CASF (ERPSS 44-165) unifying concept of operations and not an ASF one?	314-480-7310	314-480-7310	USAFE/SG2	APO	Barbara.Jones@us.af.mil	Jones	Barbara	Col
188	Transparency in Healthcare	The impact of transparency in healthcare delivery and what makes a healthcare organization transparent?		703-681-6896	AFMSA SG 3/5	Falls Church	lisa.a.davison.mil@mail.mil	Lisa	Davison	Col
189	Healthcare Literacy	The impact of patient health literacy on the delivery of safe care and what programs or interventions can and should be used to improve patient health literacy and engagement in their health.		703-681-6896	AFMSA SG 3/5 ON	Falls Church	lisa.a.davison.mil@mail.mil	Lisa	Davison	Col

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190	Healthcare workplace bullying	The impact of workplace bulling on safe healthcare delivery and how to identify and stop workplace bullying in the healthcare environment		703-681-6896	AFMSA SG 3/5 ON	Falls Church	lisa.a.davison.mil@mail.mil	Lisa	Davison	Col
191	Patient management strategies for medical operations in denied environments	Considering the potential for decreased patient survivability and decreased advanced surgical trauma care, conduct research and analysis on potential expectations, ethical dilemmas, and patient management strategies for medical operations in denied environments		808-388-8791	PACAF/SGR HQ	JB Pearl Harbor-Hickam	james.sandvig.1.ctr@us.af.mil	James	Sandvig	Dr
192	Increases in RPA CAPs with less manpower per CAP	How can the AF get more RPA CAPs with less manpower per CAP (automation, multi aircraft control or Monitored Transit Operations etc)	260-4292	571-256-4292	HAF/A3OI	Washington	travis.a.burdine.mil@mail.mil	Travis	Burdine	Lt Col
193	Enduring presence in AFG: do we need to keep BAF open for longer than currently planned?	With the ever changing climate and uncertainty in AFG (and in all likelihood, GIROA will request continued US support beyond our current commitment), does it make sense to plan now for an enduring presence at BAF?	965-5802	803 895-5802		Shaw AFB	jeffrey.fallesen@afcent.af.mil	Jeffrey	Fallesen	Colonel
194	Advanced Airman Assessment and Mission Alignment Process to support USAF's Future Operating Concept of Multi-domain Operations	Propose an advanced selection process to enhance Airman assessment, selection, mission-alignment, mission readiness, and retention. Give consideration to the recent advancements over the past decade in psychological/psychiatric assessment and modeling, molecular and biological sciences, advanced training capabilities, nutrient research, etc. Starting with the current AF selection process as a baseline, estimate the benefits/return on investment of the proposed process; and identify major issues that need to be considered / addressed in order to adopt the new process.		937-255-3784	711 HPW/CL	Wright-Patterson AFB	nancy.kelley-loughnane.1@us.af.mil	Nancy	Kelley-Loughnane	Dr.
195	EXAMINATION OF BIAS AMONG MILITARY AND CIVILIAN SUPERVISORS TOWARDS INDIVIDUALS WITH DISABILITIES	TOPIC DESCRIPTION: This project would be to assess whether there are biases among Air Force civilian and military supervisors towards employees with disabilities, specifically individuals with targeted disabilities (IwTDs), the reasons why biases exist, and the impact on retention. Agencies have an ongoing legal obligation to prevent discrimination on the basis of race, sex, color, national origin, religion, age, disability, genetic information, and reprisal, and to eliminate barriers that impede free and open competition in the workplace. Barrier analysis is the process by which agencies uncover, examine, and remove barriers to equal opportunity at all levels of the workforce. A barrier is a specific agency policy, procedure, or practice that limits employment opportunities for members of a particular diverse group. An effective barrier analysis would not merely identify a â€œselection processâ€ as the barrier, but would pinpoint the particular phase or facet of that process that is causing the workforce discrepancy (i.e., â€œtriggerâ€). The research would focus on the retention of Individuals with a Disability (IwDs), with a focus on IwTDs, as retention of this group of employees is far lower than employees without disabilities. Research would entail looking for possible connections between the triggers in the workforce statistics and potential attitudinal, administrative, architectural, and/ or programmatic barriers. Recommend undertaking the following activities: 1. review Air Force exit and retention survey data and comments for FY14 and FY15; 2. assess requests for reasonable accommodation; 3. review MD715 data tables for the past five years to assess trends in the representation rates of IwDs and IwTDs by grade level in the major occupations ; 4. meet with selecting officials to examine their experiences at various stages of employment, i.e., recruitment, selection, performance, and advancement to discuss their experience and perception of IwDs and IwTDs; 5. hold focus groups; 6. examine whether retention issues exist in other agencies. RESOURCES AVAILABLE: Other Resources (access to data through AFPC, disability employment data available from the US Dept. of Labor, and the Department of Defense Annual Disability Employment Status Report) NOTE: This is one of three proposed topics submitted by Mr Corsi on behalf of the Air Force Barrier Analysis Working Group.		240 612-4006	AF/A1Q	Andrews AFB	kendra.m.duckworth.civ@mail.mil	Kendra	Duckworth	AF Disability Program Mgr
196	Research Air Worthiness certifications	The Air Force Acquisition community is concerned with Air Worthiness as it is used for the military, however as commercial aircraft with military mission modifications have been adopted for military use, there are some circles that push for maintaining an FAA certifications in addition to the military type and airworthiness certification. The competition and acquisition of the KC-46 ultimately resulted in a three part certification determination: 1. Amended Type Certificate, 2. Supplemental Type Certificate, and 3. Military Type Certificate; along with a military airworthness certification. In spite of previously granting FAA part 145 repair station certification to the Air Force for KC-10 paint shops at Tinker AFB, and having a memorandum of agreement with the USAF for Space transportation and Range Activities, the FAA has maintained that they would not grant FAA part 145 repair station certification to support an FAA certifications for military aircraft. In addition there is much confusion as to what extent can a commercial aircraft with military mission modifications be called an FAA certificated aircraft in terms of both a FAA type and/or FAA or military airworthness certificates. As a result, some users have determined that the extra oversight of maintaining "FAA certified-like" processes results in greater efficiency and surety for a non-compromised supply chain and sustainment practices. Others have argued that the additional oversight is not as value added in the military sustainment activities. Recommend one individual or team of students be assigned to develop tactics and procedures for assessing the benefits to the Air Force Enterprise of pursuing employment of these FAA Type/Airworthness and/or FAA-like type/airworthness certifications versus military type/airworthiness for the commercial aircraft with military mission modifications or next generation military technologies of the future. Each need a requirements analysis and development of implementation plan for a variety of scenarios. They should work with the Air Force Materiel Command, Air Combat Command, and Air Mobility Command to understand the pros of cons of implementing various type certificates for existing and planned fleets.		7036936524	AQD	Washington	diana.s.bednara.civ@mail.mil	Diana	Bednara	GS-14
197	What are the implications of 24/7 ANG missions?	Manpower requirements for a traditional force accomplishing a full-time mission? Balance of full-time personnel to part-time personnel. Balance of current, full-time operations to surge capacity. How are support functions provided? Base infrastructure support. Personnel support functions (medical, chaplains, civil engineering, etc.). How can ANG tailor the missions to retain ANG cost-effectiveness and its part-time personnel model?	703-222-1977	703-692-1977	NGB/CF	Washington D.C.	sean.f.conroy.civ@mail.mil	Sean	Conroy	Mr.
198	What are primary lessons for ANG after 20+ years of combat operations?	Guard Airmen, their families, and employers have adapted to increased operational tempo, it is time to examine the adaptations made on the fly. What is the potential impact upon ANG? Are ANG units properly organized to meet future demand?	703-222-1977	703-692-1977	NGB/CF	Washington D.C.	sean.f.conroy.civ@mail.mil	Sean	Conroy	Mr.
199	Joint Patient Evacuation System C2	1. Examine C2 relationships for all casualty evacuation platforms. 2. Examine how a Joint C2 structure could enhance Medical Operations in warfighting environments. 3. Examine the impact a Joint C2 structure might have on patient hold capabilities during future engagements. 4. Explore how integrating Joint capabilities would allow for a more limited footprint while expanding capabilities and reducing health service support redundancies.		703-681-7877	AFMSA SG3X	Falls Church	julie.a.skinner18.mil@mail.mil	Julie	Skinner	Maj
200	AFMS Response to Viral Outbreaks in Deployed Settings	Anaylze current AFMS ability to respond to widespread infectious (including contagious human to human transmissible) biological agents in deployed settings. Identify gaps, challenges, and recommendations across the DOTMLPF spectrum related to typically fielded UTCs (personnel and equipment), current policies, likely medical interventions, AE limitations, existing plans, and medical logistics. Review historical scenarios for applicable lessons learned- SARS, Avian Flu, H1N1, Ebola, Norovirus, etc. Include considerations for operations in A2/AD environments.		703-681-7837	AFMSA/SG3X	Falls Church	trinette.flowers-torres@us.af.mil.	Trinette	Flowers-Torres	Maj
201	The Shifting Culture of Religion in the Military	Research is needed to better understand the relationship between religion and non-federal entities. Due to changes across the religious landscape of America (i.e. executive orders and the repeal of DADT and DOMAâ€™s decision that DADT is unconstitutional and its impact upon religion in the military), the relationship between the military chaplaincy and non-faith entities have been seen as adversarial. Research in this area could help to provide insights for future relationships with regard to the shifting culture of religion in the military.		571-256-7656	AF/HCX	Washington	darren.b.duncan.mil@mail.mil	Darren	Duncan	Major/Chaplain
202	Determine the viability of a 30-year retirement as an option to the current 20 year retirement construct.	â€¢ The 30 years would be cumulative, vice consecutive, allowing individuals to depart the service entirely for periods of time. Only periods of satisfactory performance in the military would be considered as a qualifying year. This time could be comprised of a combination of full time Active Duty, full time Reserve, or part time Reserve. â€¢ Like the Reserve Component retirement system currently in place, retirement pay would be based on the individuals rank and the number of active duty points accrued during the 30 year period. Pay could start immediately upon satisfaction of 30 qualifying years, or similar to the current Reserve Component retirement system, at the age of 60 (unless reduced do to active duty support of a named contingency). Recommendations would require a corresponding cost benefit analysis. Considerations: â€¢ Effects to time in grade requirements â€¢ Health benefits â€¢ Law modifications â€¢ Risk assessment â€¢ Barriers â€¢ Cost			AU/RF		barbara.lee.1@us.af.mil	Barbara	Lee	Colonel

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203	ROI associated with developing new methods for Airman selection, mission-alignment, mission readiness, and retention	What is the return on investment associated with developing new methods for Airman selection, mission-alignment, mission readiness, and retention, to include enhanced psychological/ psychiatric assessments and identification of predictive genetic and biological markers for the major career fields (Air, ISR, Cyber, RPA, Spec Ops) across the Airman's lifecycle? Develop enhanced aptitude assessment to optimize personnel and the career field matching process across the enterprise.	785-4340	937 255-4340	711HPW/XPT	WPAFB	william.nelson.35@us.af.mil	Todd	Nelson	Chief, Strategic Planning
204	Understanding & Adopting Acquisition Lessons	- How do we learn lessons in acquisition? Should the USAF adopt acquisitions doctrine? Why do we continue to repeat acquisition mistakes? Why canâ€™t streamline acquisition? Why does it take so long? - Objectives -- Review, analyze and improve the acquisition process - Goal -- How to improve USAF processes	312-986-7274	937 656-7274	AFRL/RX	WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
205	Resource scarcity and the impact on SOF operational capabilities: Competition and conflict	Water is becoming the new oil. Resource scarcity and specifically potable water scarcity is projected to be a major driver of conflict in many parts of the world where USSOF operate. How will competition over resources shape conflict in the future, and what are the implications for USSOCOM? SOF forces are expected to operate in environments where potable water shortages are pervasive. How will SOF capabilities be impacted when operating in water-scarce environments? Research can focus broadly on analysis of current SOF capabilities for operating in water scarce environments, as such, what future technological advances should USSOF be cognizant of that can help small SOF units operate successfully? What are the potential â€œmine, save, and recycleâ€ alternatives? Is â€œharvesting fog,â€ a method of retrieving moisture in coastal areas, still a viable practice in other environments? How does resource scarcity affect Joint Intelligence Preparation of the Operating Environment doctrine â€œsystems perspective?â€ What are the land use issues and implications for the local populations?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
206	Physical Effects to the Body after Prolonged Exposure to Counter Radio-controlled IED Electronic Warfare (CREW) Systems	Throughout the past 13 years of combat operations in Iraq and Afghanistan, ground combat forces rapidly fielded multiple CREW systems from JIEDDO to mitigate transmission signals that initiated IEDs. Both vehicular and back pack mounted CREW systems placed high power, radio frequency transmission antennas inches to several feet from the operator's body and head. No scientific medical data was provided when formally requested through program managers, the US Army, the US Navy, the DoD, or JIEDDO since 2008. Known or expected medical ailments need to be identified and briefed to service members and documented exposers included in the medical records. JIEDDO will need to modify CREW equipment to ensure the maximum safety for future operations. In the last four years, several cases of brain tumors and cancers have been surfacing in young USAF service members that were directly exposed to CREW systems. Identify the effects of high power radio frequencies associated with the current and legacy CREW systems after prolonged and multiple exposures to the human body. Study should focus on 21 - 60 year old populace that performed missions in theater as SOF, EOD, and Transportation Convoy Operators (CE and LRS). Exposed personnel should be identified and contacted to ensure medical treatment and screening is completed for known ailments as a result of this study.	523-6853	(850) 283-6853	AFCEC/CXD		john.olive.1@us.af.mil	John	Olive	Dr.
207	The Data Rights Tipping Point	DoD and Air Force statutory and regulatory policy is in place for the procurement of all data solely paid for or required by the Government for system operations and sustainment. Also within the DoD, "owning the technical baseline" has become a fundamental expectation for all acquisition programs. Furthermore, significant DoD funds are allocated to company-executed IR&D. Through all of these activities, there continues to be a chasm of difference between Industry and the Air Force on data rights and IP. This study, using KC-46 experience (and other recent program experience as applicable), would focus on what exactly the Government can and should expect relative to data rights based on statutory and regulatory policy (to include IR&D efforts). (Value: Air Force wide benefit in developing acquisition strategies and negotiating with Industry regarding data rights.)		312-785-8962	AFLCMC/WKE		john.slye@us.af.mil	John	Slye	
208	Digital Thread Implementation	Investigate the implementation of the digital thread concept across the services and industry. Propose the evaluation of a set of digital thread standards that considers the types and uses for digital thread data to include potential use for additive manufacturing. Study should also look at potential lifecycle cost benefits analysis of a spectrum of alternatives from not retaining, retaining access to, or taking delivery of detailed development, manufacturing, and operational data as compared to the cost of storing large volumes of digital data over the lifecycle of a weapon system.	336-3528	405-736-3528	AFSC/EN		Edward.ayer@us.af.mil	Wayne	Ayer	
209	Identification and Analysis of Key Demographic, Socioeconomic, Geographic, and Technological Indicators of Incompatible Developmental Activities Adjacent to Air Force Installation Complexes and Ranges	Since their inception, Air Force bases have been economic centers of gravity for local and regional communities, which at times, attract incompatible activities causing encroachment. Encroachment causes an erosion of capability for the Air Force to utilize its installations, airspace, MTRs, and ranges to their fullest extent. Efforts to combat encroachment involve leveraging USAF, DOD, and other programs at the cost of tens of millions of dollars and thousands of man-hours per year. Current Air Force Encroachment Management program actions track activities across 13 encroachment "challenge areas." The 13 challenge areas span beyond simple urban growth and attempt to provide a more comprehensive review of activities which compete for resources like water availability and frequency availability. Renewable energy projects such as wind and solar can also impact operations. While the current Encroachment Management Plans and the 13 challenge areas are a marked improvement in how the USAF identifies and engages encroachment activities, they are still reactionary. This proposed research project would identify, catalogue, and analyze the demographic, socioeconomic, geographic, and technological drivers which "feed" the activities covered by the 13 challenge areas. By identifying the "leading indicators" for each of the 13 challenge areas, analyst would be able to identify local and regional (or national) trends and forecast where and what type of challenges the Air Force will face over a given time horizon. This will allow Air Force Encroachment Managers to engage with local, regional, and national policy makers to develop strategies to mitigate the impact of incompatible activities at a lower cost (policy adjustments) versus current programs (buying controlling interest in land). An additional benefit of this research would be the ability to predict "types" of developmental pressures that Air Force Civil Engineer Center could utilize to target public-private partnerships, Enhanced Use Lease opportunities. This would allow the Air Force to shape development in a compatible way utilizing existing programs.	969-8825	(210) 395-8825	AFCEC/CPPR		charles.cyr@us.af.mil	Charles	Cyr	Civ
210	Non-TSPR (Total System Performance Responsibility) Acquisition Environment	In the 1990 the Weapons System Acquisition and Sustainment offices were directed to use the TSPR construct as a national defense strategy to minimize government manpower. During the TSPR execution the manpower shifted from the Government Office to Defense Contractors, to perform various roles; such as Engineering Management, Program Management, Configuration Management, Documentation Management and Logistic Management. The long term contracts that utilized this concept are closing and the management of the weapons systems is now returning to Government Program Offices for management. However, the manpower depletion from the program offices do not allow such a workload shift. Increasing manpower needed to properly manage weapon systems require an innovative approach to function efficiently and effectively. Suggest a study to: 1) Assess AF program offices current ability to effectively manage weapons systems in peacetime and wartime 2) Identify a plan to identify changes in processes, policies and procedures to streamline reducing the workload burden. a) Identify plans to cross flow personnel into shortage career fields b) Identify plans to reduce meetings c) Identify plans to reduce travel d) Identify policies to allow cross flow data between Disciplines (Logistics, Engineering, Financial & Contracting) 3. Harnessing key technology to: a) Identify automated systems to self-populate documentation (Financial, Contracting, Logistics) b) Identify technology to cross utilize data (Financial, Contracting, Logistics & Engineering) c) Assess supplier databases accessibility to increased available information 4) As part of the study, identify the highest payoff technology to enabled capabilities that would help the AF close potential gaps.	834-8595	719-556-8595	AFLCMC/HBQP		james.keller@us.af.mil	James	Keller	Civ
211	Understanding Cost of Late Air Logistics Complex Production	What is the cost of late Air Logistics Complex production? There is currently no good way to estimate the dollar impact of an aircraft, and-item, etc. being produced a day / week / month late from the depot. Frequently, there is a desire to identify a return on investment (ROI) for a particular action at the depot. When the action is designed to ensure parts, equipment, etc. are available when needed to meet production requirements, a major element (cost of delayed production) cannot be included because it's never been definitively determined. Having this information would allow senior leaders to make intelligent choices about investments and priorities, with a true understanding of the cost of the options under consideration.	777-6064	801-775-6064	419SCMS/CL		Russell.taylro.11@us.af.mil	Russel	Taylor	

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
212	Cost Benefit Analysis - Reliance on Automated Tools and Centralized Help Desk for Office IT Support versus Organic, In-House Capability	In the past, offices had in-house, organic manpower to provide IT support for office IT tools/systems. With the manpower reductions of the past several years, offices must now rely on automated tools (vESD) and a centralized Help Desk (base-level in the case of WPAFB). Anectdotal information indicates that the current lack of in-house, organic support is driving increased costs and productivity degradation (downtime, redundancy from each individual having to address their IT issues without kowing if someone else in the office already has a fix, excessive wait time for fixes or new user access, high-graded employees' time diverted to working through the IT support process vs mission, etc.). Would it be more cost effective to fund some level of organic, in-house IT support?	986-0380		AFMC/PKX		martin.trent@us.af.mil	Martin	Trent	
213	Cost of Clinical Currency and Readiness	There have been concerns across the services regarding sustainment of clinical and surgical currency for physicians, nurses, technicians and extender providers/allied health personnel. There are fewer inpatient platforms, less exposure to critical and complex case mixes and stronger focus on business plans/access/patient experience. The military health system by nature of its missions cannot function with a civilian business model. There needs to be an assessment of the prioritization of routine in-garrison care, regularly rotating personnel to get required clinical experience for medical readiness (usually not available within the MTF), required UTC-driven readiness training, deployment requirements and development of a business model that is inclusive of all the disparate requirements.	986-3642	937-656-3642	AFMC/SGR		janet.robinson@us.af.mil	Janet	Robinson	Col
214	Measures of Effectiveness (MOE) for Clinical Currency Training	There have been concerns across the services regarding sustainment of clinical and surgical currency for physicians, nurses, technicians and extender providers/allied health personnel. There are fewer inpatient platforms, less exposure to critical and complex case mixes and stronger focus on business plans/access/patient experience. Military healthcare personnel are expected to be clinically ready for all contingencies and the JIT model of training could not work for clinical, hands-on, patient treatment experiences. Much work is going into developing clinical currency programs within all DoD branches, however, defining specific currency requirements and frequency of currency experience has been a challenge. Identifying/developing MOEs for clinical patient treatment experiences is critical to development of effective training programs to meet our medical readiness needs.	986-3642	937-656-3642	AFMC/SGR		janet.robinson@us.af.mil	Janet	Robinson	Col
215	Effects of Recent Organizational Changes to Base-level Personnel Morale	Research effects of most current/recent organizational change to base-level operational efficiency and discover disconnects during change transition, especially focused on personnel morale and retention. Identify issues if any and suggest mitigation procedure/process.	969-8053	(210) 395-8053	AFCEC/CPPD		rodelio.villegas@us.af.mil	Rodelio	Villegas	Civ
216	Partnerships for Cloud Computing, Big Data Analytics and Cyber Threat Sharing	Research how the Air Force can utilize existing infrastructure and best practices exhibited by the government, private sector and academia in the areas of cloud computing, big data analytics and cyber threat sharing to support Air Force mission at lower costs. These items are at the forefront of many high technology related Air Force mission areas. Yet numerous gains have already been made outside of DoD. What can the Air Force learn from these best practices? Are there any existing data centers or other infrastructure the Air Force can securely tap into without having to spend funds to build their own facility? Can the Air Force share and receive unclassified cyber threats from non-DoD entities through confidential models such as the Advanced Cyber Security Center?		781-225-0387	CSEP, CISSP, Air Force Li	Hanscom AFB	tim.rudolph@us.af.mil	Tim	Rudolph	Dr.
217	Operational Information Flow from Units to HQ USAF	Historical OPREP reporting procedures frequently contain insufficient information to meet the needs of Air Staff leadership based on the need to contact the reporting units for more information. Commanders periodically bypass the OPREP reporting channel and provide information directly to senior leaders.	312-260-7735	571-256-7735	LeMay Center/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
218	Cyberspace Maintenance	How do we define cyberspace maintenance and distinguish it from operations what are the impacts to professional development, AFSCs, and training?		719-554-6002	HQ AFSPC/A2/3/6WD	PETERSON AFB	william.mcculley@us.af.mil	William	McCulley	Lt Col
219	Cyberspace Organization Structure	What is the optimal organization structure for cyberspace operations units? Should we consider the composite unit structure used briefly in the 1990s, etc.?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	PETERSON AFB	william.mcculley@us.af.mil	William	McCulley	Lt Col
220	Cyberspace Superiority vs Supremacy	Is it possible to achieve â€œsupremacyâ€br â€œsuperiorityâ€In the cyberspace domain? Is local superiority more achievable than on a global scale?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	PETERSON AFB	william.mcculley@us.af.mil	Wiiliam	McCulley	Lt Col
221	Cybermindedness	- How can we develop "Cyber Mindedness" in regards to how we approach OCO? What are the implications for force structure, equiping, training, force presentation, service resourcing? What are some recommendations on how to do or not do it? - How can we develop a "cyber mindedness" approach to economics, security and homeland defense? - Should the integration of military and civilian cyber operations be coordinated and jointly overseen in order to support and defend U.S. national interests?	719-554-3338	719-554-3338	A2/3/6C	PETERSON AFB	corey.ramsby@us.af.mil	Corey	Ramsby	Col
222	Comm Squadron next	How do we Implement and evolve Comm Squadron next?	719-554-3338	719-554-3338	HQ AFSPC/A2/3/6C	PETERSON AFB	corey.ramsby@us.af.mil	Corey	Ramsby	Col
223	LeMay Center -- operational issue	5) Close Air Support - do we have an effective strategy for the future?								
224	Measures of Effectiveness of AFMS Global Health Engagements	Review the way AFMS measures the effectiveness of Global Health Engagements. Determine if leaders are provided valuable decision points necessary for evaluating mission success.		703-681-6986	AFMSA/SG3X	Falls Church	juan.i.ubiera.mil@mail.mil	Juan	Ubiera	Lt. Col
225	The Impacts of a High Fidelity Simulator for RPA Training and Distributed Mission Operations Network Integration	Advantages/Disadvantages of training with high fidelity simulator connected to the DMO network and integration with other airborne assets.		757-225-3366	HQ ACC/A3	JBLE	joe.joyce.1.ctr@us.af.mil	Joe	Joyce	Mr.
226	How should the Air Force address test and training infrastructure modernization challenges?	Aging platforms are not the service's only modernization concern, and in some cases not even the most pressing concern. The service has made a commitment to live-virtual-constructive training to support its modernization efforts. The Air Force may need to think of its testing and training infrastructure part of the weapon systems they serve, or as weapon systems in their own right. Does aging test and training infrastructure constitute a readiness concern as well as a modernization concern as the newest platforms and munitions arrive? What tradeoffs should the Air Force contemplate to preserve or replace these vital test and training capabilities?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
227	Smoothing the Transition from CLS to Organic Support	Many weapon systems are purchased with CLS support contracts in place for reasons such as political expediency, inducing contractors to bid on production, program office reasons, etc. Eventually, though, many of these same systems go through a transition to organic support. Assuming we canâ€™t go directly to organic support after purchase, are there things that can be done upfront to smooth the eventual transition from CLS to organic support? Certainly obtaining extensive data rights is one area of valueâ€¦are there others?		937-904-5952	AFLCMC/OZA	Wright Patterson AFB	kelvin.utendorf@us.af.mil	Kel	Utendorf	Dr. (GS-14)
228	Properly Pricing Product Support Costs	The question is--how does the Corporate Air Force properly incentivize individual Program Offices to incorporate all costs into their product support decision-making processes? Of course, this begs other questions--what process(es) can Corporate Air Force put in place to correctly determine good product support strategies and how can it determine the cost(s) of not doing so? During the weapon system acquisition process, Program Offices typically make product support decisions based on what is best (and most affordable) for the program at a specific point in time. However, the Corporate Air Force might be better served with a decision contrary to that made by a Program Office acting individually. Consider new technology "X." Since the AF has no experience with sustaining "X," the Program Office chooses contractor support for "X" despite the expense. From the Corporate Air Force perspective, "X" will be a technology incorporated in nearly all future programs so developing organic sustainment capabilities for "X" is important. So, even though the Program Office is making a correct decision for its specific program, it is making a bad decision from the Corporate Air Force perspective. From an economic point of view, the individual Program Office is not incorporating all of the costs into its product support decision.		937-904-5952	AFCMC/OZA	Wright Patterson AFB	kelvin.utendorf@us.af.mil	Kel	Utendorf	Dr. (GS-14)
229	AF Hiring Process	Industry and other agencies can hire much faster than the Air Force. The Air Force needs an independent body to investigate what is needed to streamline the AF hiring processes. In particular, in the hiring of scientists and engineers (S&E), we can not compete with industry, who can hire in days/weeks in comparison to months. The independent body should investigate not just the speed of the existing process but the value, and benchmark our process against industry. The study's finding could substantiate changes to current OPM or statutory requirements.		405-736-3184	AFSC/EN	Tinker AFB	kevin.stamey@us.af.mil	Kevin	Stamey	SES

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230	Rising cost of Information Assurance (IA) compliance to IT systems Operations & Maintenance (O&M) sustainment	Rising cost of Information Assurance (IA) to IT systems Operations & Maintenance (O&M) sustainment budget. Paper should focus on rising costs of IA compliance make, impacts to reduced funding for fixes and enhancements.		757-225-4145	HQ ACC/A5	Hampton	john.swartz.4@us.af.mil	John	Swatrz	Mr. (GS-13)
231	Diversity: Does it really make us better?	Diversity has become the military's new mantra. Is a diverse force actually a better fighting force? If so, by what metric? What are the advantages and disadvantages of a culturally diverse force. Can a truly diverse force be created in a fair manner? What are the challenges in leading a diverse force. Is there a "sweet-spot" for how diverse an organization should be?	493-7938	334-953-7938	DEW	Montogomery	gene.kamena@us.af.mil	Gene	Kamena	AD-25
232	Capturing the investment of intellectual capital	Implement an accounting system to estimate the value of the intellectual capital invested to complete a tasker/project As resources decline, the refrain of â€œmore with lessâ€ becomes more audible. How much more? How much less? It is uncommon in the military â€œcan doâ€ culture to attempt to quantify the investment of intellectual capital in a project, perhaps since such work is seen as requiring â€œwhatever it takes.â€ Yet the time available in a given week or day, or available for an individual project is finite. With a measure of the value of intellectual capital invested, leaders can decide whether the result attained warranted the investment. Such a measure also gives a method for improving support efficiency when an organization desires a certain product/project but cannot "afford" the intellectual capital price. As and example, can the Spaatz Center do it less expensively? Professionals such as engineers, accountants, lawyers and consultants must accurately record the time invested each day on various projects so they can bill the correct client. While any such accounting system is a good start, this report recommends calculating a dollar value based on a simplified system which equates the hours invested by different ranks (GO, Col, FGO, CGO, enlisted and civilian equivalents) to a "billing dollar figure." Eschewing false precision (and the emotional distaste of attempting to assign a dollar value to an individual's work), the metric need only be an approximation sufficient to capture the relative value of an intellectual capital investment. Some will understandably argue against a system using dollar values as counter to a military ethos where, unlike the business world, the value of results are sometimes intangible or even incalculable (i.e. deterrence, operating safely, a successful wingman intervention, education(?)). But for the Spaatz Center and many other organizations in government, such a system could enable leaders to make better resource decisions. Using such a system, the estimate of intellectual capital expended in an hour-long ESS weekly staff meeting is $450. Hypothetically, the DS could discover through such data that Spaatz is investing $1000 in intellectual capital to approve a $300 expenditure. Such a result should drive a process change to make the $300 expenditure decision more efficiently. There are many other examples that the researcher could use to provide additional rationale for doing this research and they need further exploration in this current more with less culture.	493-6529	334-953-6529	AU/CA	Maxwell AFB	john.carter.52@us.af.mil	John	Carter	Mr.
233	Health Leadership Development - Partnerships w/Academia and Department of Defense	Anything related to the development of future Military Health Leaders with a focus on National Health Strategies, Public and Global Health and strategic alignment to US foreign policy goals. What is the optimal method of developing medical military statesmen?		703681-8091	AFMSA/SG5	Falls Church	Kevin.R.Kupferer2.mil@mail.mil	Kevin	Kupferer	Maj
234	Training curriculum development for AFMS International Health Specialists	Evaluate and compare existing training paradigms for Global Health Specialists in Academia and DoD to MHS strategic objectives and current capabilities to determine the optimal training and occupational experience required for Regional International Health Specialists in a new Joint Environment		703681-8091	AFMSA/SG5	Falls Church	kevin.r.kupferer2.mil@mail.mil	Kevin	Kupferer	Maj
235	Acquisition Career Field for BSCs	Currently MSC has dominated the acquisition certified position space because of the Acquisition Career field. Medical Research and Acquisition Leadership roles are lacking the highly technical skillsets needed for innovation, the BSC should include Acquisition as a career path. Research the value and importance of technical and engineering career fields in Medical Research and Acquisition Leadership roles. Research an implantation strategy.		703 681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15
236	Strategic Medical Research Implications of the 'Pivot to the Pacific'	Research the potential medical gaps and capture opportunities for AFMS niche areas (e.g. Human Performance and En-Route Care) for medical research investment		703 681-8187		Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15
237	Global Health Engagement - AFMS case study	Pick a country; Identify and examine DoD, non-DoD, non-government, and host nation initiatives (including studies, crisis events, international community presence, diplomacy etc.) that relate to both public health, security, and security cooperation; Analyze country 'landscape' to answer - is the international harmonious in its efforts? Is the international community able to identify what works? Is the international community able to measure it's progress? Refer to Policy Guidance for DoD Global Health Engagement (AMHS 3.1.3 12.14.0.1), HHS National Health Security Strategy and Implementation Plan 2015- 2018, AFTTP 3-42.9 GHE and IHS Teams, Global Health Security Agenda, and Global Health Initiatives		703 681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15
238	AFMS Foreign Military Sales/Transfer	Paper context should include Theater Security Cooperation and Global Health Engagement and International Health Specialist Teams role in the Foreign Military Sales/Transfer .		703 681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15
239	Global Health Strategic Communication	Global Health Engagement (GHE) activities and Humanitarian/Disaster Assistance gives AFMS access to unique scenarios worldwide to support National Security Goals. Paper should include what is needed to promote GHE and ensure the program aligns with other military services and Defense Health Agency (DHA) GHE activities.		703 681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15
240	Global Health Strategic Communication	Paper should include strategic communication strategies with DoD, non-government organizations, other government organizations within Global Health Engagement/Initiative Activities in foreign partner host nations		703 681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15
241	Can Operational Leadership reshape the Military Health System in todays political and economic environment	Discuss current MHS challenges from strategic and operational level and overarching political and strategic goals to evaluate the feasibility of effective Operational Leadership (reference Joint Forces Quart. iss. 77). Has the MHS appropriately or inappropriately applied relevant business models? Are the current models the optimal mix for future budgeting and manpower requirements, or would a different model enhance performance. Include Measures of Effectiveness and the appropriateness of those MOEs for the MHS vs. other DoD entities.		703 681-8091	AFMSA/SG5	Falls Church	kevin.r.kupferer2.mil@mail.mil	Kevin	Kupferer	GS-15
242	Resiliency of Deployed Critical Care Nurses	Quantify the Mental Health effects of multiple deployments on Critical Care and Emergency Room nurses. Is their attrition, MEB, profile rates significantly higher than other AFSCs? Are there any proven support tools for this population that leaders should incorporate after deployments?		850-883-8164	96 IPTS/SGIC	Eglin AFB	carole.farley@us.af.mil	Carole	Farley	Col

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243	Reducing costs by defining tailored environmental test programs for different ranges of satellite masses	This study seeks to determine an analytic method to appropriately tailor the satellite environmental testing requirements outlined in TR-RS-2014-00016. Given that satellite test programs are shaped by the complexity of the satellite, the cost of any given test, and the perceptivity of that test, a relationship should be able to be devised that prescribes the appropriate satellite testing. Previous research suggests that mass may be an effective quantitative measure of complexity, and if true, the appropriately tailored test program could perhaps be defined as a function of satellite mass.	225-3549	703-695-3549	SAF/AQSE	Washington	brian.m.flusche.mil@mail.mil	Brian	Flusche	Maj
244	Mitigating SOF suicides: Susceptibility and risk factors	According to a 2014 New York Times article, â€œIn the past two and a half years, 49 Special Operations members have killed themselves, more than in the preceding five years. While suicides for the rest of the active-duty military have started to decline after years of steady increases, they have risen for the nationâ€™s commandos.â€ SOF suicides continue to happen, even with focused attention from the current USSOCOM commander (as stated in his confirmation hearing) and throughout the chain of command. Whatâ€™s driving the increase? What has been overlooked? Are the current statistics an anomaly or a gauge for concern? What indicators correlate with susceptibility to suicide? Are there unique risk factors associated with SOF suicides? Are SOF suicides precipitated by different factors among the specialties within the SOF community? What preventive measures can be taken to reduce suicide in the SOF community?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
245	IDENTIFYING SOLUTIONS TO THE INABILITY TO ATTRACT AND RETAIN WOMAN AND MINORITIES IN THE RATED CAREER FIELDS	Women and minorities enter the rated career fields at a lower rate than white men, and those that do select those career fields leave the Air Force at a higher rate at the end of their initial service commitment. Only six percent of the rated force, which includes not only pilots but also navigators, air battle managers and combat systems officers, are female. As of August 2014, this six percent amounted to 1,339 female rated officers, who represented just 10% of the USAF female officer corps. Getting women and minorities to select and remain in rated career fields is essential to increasing the diversity of the Air Forceâ€™s senior officer corps. For example, although rated officers only represent 33% of the total USAF officer corps they account for 62% of the general officers and currently nine of the twelve USAF 4-stars. Work has been done, by RAND and others, into factors influencing career field selection and officer retention and their impact on Air Force diversity. However, too little work has been done on what policy changes could be made to reverse those outcomes. The research would focus on a barrier analysis of the policies, practices and procedures that impede the entry into and retention in the rated career fields by women and minorities. Barrier analysis is the process by which agencies uncover, examine, and remove barriers to equal opportunity in the workforce. A barrier is a specific agency policy, procedure, or practice that limits employment opportunities for members of a particular diverse group. An effective barrier analysis would not merely identify a â€œselection processâ€ as the barrier, but would pinpoint the particular phase or facet of that process that is causing the workforce discrepancy (i.e., â€œtriggerâ€). The research would seek to identify specific policies and practices that could be revised to change the current outcomes. Note: this is the second of three proposed topics submitted by Mr Corsi on behalf of the Air Force Barrier Analysis Working Group.		703-693-9503	SAF/AA	Washington	heather.k.meyer.civ@mail.mil	Heather	Meyer	Associate Director
246	BARRIERS TO WOMEN ADVANCING TO SENIOR LEVEL CIVILIAN POSITIONS (GS13-15 AND SES) IN THE AIR FORCE	This project would focus on analysis of barriers to advancement (or â€œglass ceilingsâ€) for female civilian Airmen (Black, Hispanic and White women) to executive positions which are normally found in the Senior Executive Service (SES) and equivalent rank in pay systems other than the General Schedule, as well as in the feeder grades for those positions (GS-13 through 15). Agencies have an ongoing legal obligation to prevent discrimination on the basis of race, sex, color, national origin, religion, age, disability, genetic information, and reprisal, and to eliminate barriers that impede free and open competition in the workplace. Barrier analysis is the process by which agencies uncover, examine, and remove barriers to equal opportunity at all levels of the workforce. A barrier is a specific agency policy, procedure, or practice that limits employment opportunities for members of a particular diverse group. An effective barrier analysis would not merely identify a â€œselection processâ€ as the barrier, but would pinpoint the particular phase or facet of that process that is causing the workforce discrepancy (i.e., â€œtriggerâ€). The research would focus on glass ceiling and blocked pipeline barriers for women in general, and for Hispanic and Black women in particular. It would entail looking for possible connections between the triggers in its workforce statistics and any policies, procedures, or practices that might be causing discrepancies. Recommend undertaking the following activities: 1. identify the typical background and experience of individuals selected to the senior grade levels (SES, SL/ST, DISES, DISL, and the feeder grades of GS-13 through GS-15); 2. review the qualifications of women seeking career advancement; 3. examine the recruitment of women into the senior grade levels and management positions (including applicant flow logs); 4. investigate every phase of the merit promotion process and career development programs beginning at grade GS-13; 5. conduct a longitudinal review of applicant flow statistics found in Report Tables A7, A9, and A12 of the EEOC Management Directive MD-715 Report submitted annually by the Air Force; 6. review the participation of women in general, and Hispanic and Black women in particular by grade level in the major occupations with upward mobility (for example, Black females encountered a trigger in the 0301 series, while Hispanic females experienced triggers in three of the occupations (0301, 0343, and 2210)); 7. meet with selecting officials to examine their experiences in the hiring process and to discuss their perception of female candidates; and 8. examine whether this phenomenon of lower than expected participation rates of women in executive or senior leadership positions occurs in other agencies. Note: This is the third of three topics submitted by Mr. Corsi on behalf of the Air Force Barrier Analysis Working Group.		240 612-4113	AF/A1Q	Andrews AFB	james.h.carlock.civ@mail.mil	James	Carlock	Dir AF Equal Opportunity
247	Bringing back the Warrant Officers	I see four reasons for revisiting Warrant Officers in the Air Force. These are: 1) Personnel costs represent a substantial portion of the Service budgets; 2) the Air Force, compared to the other Services, has a very high officer-to-enlisted ratio; 3) the Air Force is uniquely technical requiring longer-serving, experienced personnel; and 4) an officer-heavy Service increasingly seems to reinforce, if not create, unnecessary class differences in the Service. Should the Air Force re-create the Warrant Officer and replace a number of officer billets with Warrant Officer positions.	493-8596	953-8596	ACSC/DEI	Maxwell AFB	jonathan.arnett@us.af.mil	Jonathan	Arnett	Lt Col
248	Tactical Strategic Communication	Has the AF appropriately trained, resourced and engaged leadership at all levels in appropriately engaging Airmen across available media sources in a timely and effective manner? For example, are squadron commanders given the tools and knowledge to engage their unit(s) through Facebook, Twitter, etc... My assessment, based on the way we've collectively handled media issues recently, is our leadership is not prepared to engage Airmen apart from commander's calls and MBWA... ps-I'm retiring, so won't be at this email/phone for long.		334-953-6306	ACSC/DL	Maxwell AFB	jody.dow@us.af.mil	Jody	Dow	Lt Col
249	ANG as innovative organization	This is a lot of commercial and academic information on how to create and sustain an innovative/learning organization. How might these organization theories be adapted by ANG?	703-222-1977	703-692-1977		Washington D.C.	sean.f.conroy.civ@mail.mil	Sean	Conroy	Mr.
250	What will the 21st Century Airman need to balance to perform the mission sets of the operational Air Guard?	The Air National Guard of the 21st century is operational. There are several Requirements to maintain an operational force a Traditional member of the Air Guard Must complete. Members must balance fulfilling these requirements as well as meet family and employer needs. Are these requirements an accurate reflection of what is needed to maintain an effective operational force? Are we expecting too much of our Traditional force? What is the best balance and mix of deployments a Traditional Guard Member should expect? Is an operational Air Guard sustainable in its construct? Is the Air Guard set up as an organization to be operational, is it fiscally, functionally as well? Should it look different than it does today? If so, how?	703-222-1977	703-692-1977		Washington D.C.	sean.f.conroy.civ@mail.mil	Sean	Conroy	Mr.
251	Effectiveness of Disassociating TFI Units	The process of approving Total Force Initiatives should include a review of disassociations. The number of disassociations often rivals the number of associations considered. As each association and disassociation action can drive substantial bills, the AF can examine the effectiveness of associated units and the process to approve association and disassociation actions.	312-260-7735	571-256-7735		Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
252	Child Combatants in Africa: POW Status and Medical Care Requirements.	What are the ethical challenges associated with the imprisonment of child combatants? What are the requirements for medical care of child combatants? What military assets are presently dedicated and/or most appropriate for this mission? What limitations exist? How might the US Government establish international norms of behavior regarding imprisonment and medical care of children in POW status? What are the international, US governmental and AFMS impacts of child combatants and how do we best prepare as a military for this developing requirement.		210-395-9146	AFMOA/SGHM	San Antonio	donald.lane@us.af.mil	Donald	Lane	Col

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253	PEO Lifecycle Cost Accountability	- How should we hold USAF PEOs more accountable for lifecycle costs? - Objectives -- Help our organization deliver affordable Capabilities and Weapons - Missions -- Air Dominance - Desired Insights -- Best transition and acquisition processes to maximize value	312-986-7274	937 656-7274		WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
254	USAF Weapons Review	Why have weapons been overlooked in the USAF in the past several decades? - Objectives -- Refocus USAF attention on weapons development, utilization and optimization and determine where the development broke down. - Missions -- Air and Space Dominance - Desired Insights -- Highlight opportunities for increased Lethality	312-986-7274	937 656-7274		WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
255	Africa is the new frontier: Learning from recent interventions	Comparatively speaking, Africa has become the new frontier and an area in which USSOF are active or becoming more active, in particular in the Sahel and the Horn of Africa. It is a huge continent with unique challenges. This topic looks at the differences and uniqueness in SOF operations in Africa versus the Middle East, Europe, or other regions. Other considerations: â€¢ What are the greatest obstacles to SOF effectiveness in Africa, and how can they be overcome? Have other regions encountered the same issues? If not, why not? â€¢ What can USSOF learn from historical and recent French, Canadian, and British interventions in Africa? â€¢ What regional dynamics are of greatest concern? What problems cross multiple regions of the continent? â€¢ What unique logistical and operational problems does Africa present? What are the dynamics of religious and cultural conflict?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
256	Preventing, countering, and disrupting foreign fighter flow (FFF) to include the impacts of FFF returning to destabilize the home front	The steady state of FFF across and into various Geographic Combatant Command (GCC) areas of responsibility continues to be a concern, as an example, into and out of Syria. This flow has been attributed to a range of factors, including the recruiting campaigns orchestrated by violent extremist groups and the ease with which militants from the Middle East, North Africa, and Europe can access this region. The same is true of FFF across Southeast Asia and the relationship of VEOs with the FFF phenomenon. This research topic seeks to explore the antecedents of FFF with a focus on the social, environmental, and psychological factors that deter or motivate foreign fighters to join or support extremist causes in any of the regions/GCCs and across GCC areas of responsibility. What efforts have been made to deter, disrupt, and destroy these foreign fighter threats? Have they been successful? Additionally, the study should address FFF-defeat and countering- FFF operations. Other considerations: â€¢ How do kinetic operations, such as airstrikes, impact these antecedents? â€¢ How might influence operations weaken these causal factors? â€¢ What are the information environmentâ€™s most appropriate leverage points for deterring or disrupting FFF? â€¢ How do SOF identify, track, and monitor the activities of those foreign fighters that return home to do damage to the home front?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
257	The Unfunded Mandate and Other Acquisition Initiatives	There remains a dichotomy between lifecycle execution and emerging initiatives within the DoD. Oftentimes, new mandates are released with expectation that all active programs comply with urgency. Frequently, these expectations are incongruent with the PPBE process, limiting the ability of programs to comply and perpetuating belief that these mandates are being ignored. This study would explore recent changes in policy (e.g., Human Systems Integration, System Security Engineering, Cybersecurity) and provide alternatives on how best to launch initiatives within the PPBE structure in order to ensure both requirements and funding are properly aligned. (Value: Air Force wide improvement in planning, programming, and budgeting for overarching requirements/mandates.)		312-785-8962	AFLCMC/WKE		john.slye@us.af.mil	John	Slye	
258	AF Hiring Process	Industry and other agencies can hire much faster than the Air Force. The Air Force needs an independent body to investigate what is needed to streamline the AF hiring processes. In particular, in the hiring of scientists and engineers (S&E), we can not compete with industry, who can hire in days/weeks in comparison to months. The independent body should investigate not just the speed of the existing process but the value, and benchmark our process against industry. The study's finding could substantiate changes to current OPM or statutory requirements.	336-7966	405-736-7966	AFSC/ENR		jeffery.catron@us.af.mil	Jeff	Catron	
259	Government IP and Patents - Their Role in and Influence on Technology Transition, Commercialization, and Warfighter Impact	Major emphasis is being placed on ensuring that intellectual property generated by government in-house or contracted R&D is properly documented and protected. More specifically, government resarchers are being increasingly encouraged to seek patents for work they perform or lead. However, it is unclear whether the cost-benefit assessment for IP protection and patenting is in the government's favor. Do patents increase the probability that a government-developed technology will be transitioned; that commercialization of products using such technology will be easier or more profitable to the government; or that (for DoD-sponsored work) benefits to the Warfighter are greater or more rapidly realized for patented technologies than for unpatented ones?	785-9656	937-255-9656	AFRL/RXAN		thomas.nelson.15@us.af.mil	Tom	Nelson	
260	Product Support Business Case Analysis (PS BCA) Effectiveness	In response to DoD 5000.02, Enclosure 6, AFI63-101_20-101 charges the PM with performing a PS BCA to validate the program's product support strategy is cost effective, financially feasible, and optimizes system readiness. The AFI further states that the analysis should "begin as early as practical in the acquisition life cycle and be completed prior to MS C" and that the PM should revalidate the business case prior to "any change in the product support strategy or every five years, whichever occurs first." In compliance with this guidance, AFLCMC program offices have been executing PS BCAs for applicable programs over the last several years; however, it is unclear if the PS BCA process is providing the intended financial and operational benefits, if approved recommendations are being implemented effectively, or if the proposed revalidations cycle is set at the appropriate interval. Desired results: 1) Determine if the PS BCA policy is adding value to the decision making process and leading to implementation of optimal best value product support strategy that are cost effective, financially feasible, and optimize system readiness; 2) Determine what/if barriers exist that are impeding the implementation of the recommended/approved product support strategy; 3) Determine when is the appropriate time to complete an initial PS BCA (to include focus of the analysis) and subsequent reviews (to include the 5-year review cycle).	674-7230	937-904-7230 (937) 255-7171	AFLCMC/LG-LZ		amanda.woodruff@us.af.mil & trixie.brewer@us.af.mil	Amanda	Woodruff	Civ
261	The True Cost of Military Type Certifying a Commercially Certified System	There exists a common misconception that the USAF can simply and easily back away from an FAA Type Certificate (TC) during the O&S phase of a program's lifecycle and obtain a Military Type Certificate (MTC). This misconception does not consider that both an FAA TC and a MTC are design-based certifications that require enduring configuration control/management. This study would evaluate the feasibility and costs incurred by a program if the decision was made to convert an FAA Type certified design to a Military Type Certificate. (Value: Provides current and future commercial derivative programs a definitive cost to re-certify a system.)		312-785-8962	AFLCMC/WKE		john.slye@us.af.mil	John	Slye	
262	Is our global basing footprint suited for our emerging operational environment?	Most of our legacy bases overseas (Kadena, Ramstein, Lakenheath) owe their existence to WWII. They have remained static over the years and become a heavy logistical burden (with schools, gyms, restaurants, bowling alleys etc). In the near future, they will also become increasingly difficult to defend, and will require large investments in passive and active defensive mechanisms. Is it time then to move to a new paradigm for AF overseas basing of lighter, more expeditionary, and survivable locations?		703-697-9604	AF/A8XX	Washington	david.e.ellis2.civ@mail.mil	Fernando	Manrique	Mr. / Civ
263	Federated, rotationally manned operations: The impact of AFCENT C2 structure on operational effectiveness.	What impact, positive or negative, does USAFCENTâ€™s C2 and manpower structure have on the Componentâ€™s operational effectiveness? This would inform USAFCENT decisions on whether to keep a split staff, to inform efforts to gain more permanent manpower (versus 179-day AEF) on the staff, and investigate the impact of the structure on roles & responsibilities between the AFFOR staff and CAOC staff. This research could be applied to other C-NAFâ€™s exploring a similar C2 and manpower structure as part of their theater operations.	965-3430	803-895-3430	AFCENT A3/A3TW	Shaw AFB	matthew.mccarty.1@afcent.af.mil	Matthew	McCarty	Lt Col

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264	Perceived risks in the use of Genetic/Genomic Information for Personalized Medicine in the Air Force	As genomic and genetic testing becomes more mainstream, there are concerns about information security and potential misuse of genetic information. There may be additional concerns on behalf of Active Duty members as the 2008 Genetic Information Nondiscrimination Act (GINA) prevents discrimination based on genetic information for employment and health coverage in the civilian population, but does not apply to members of the DoD. This study could look at perceived risks among Active Duty Air Force members with regards to genetic testing, as well as potential risks associated with Commandersâ€™ access to this information and their subsequent career progression. As a benefit, this study could provide Air Force service members with awareness on current policy and protections.		703-681-6030	AFMSA/SG#PM	Falls Church	ruth.brenner.mil@mail.mil	Ruth	Brenner	Maj
265	UEWR Object Classification (OC) Improvements	The early warning sensor classification of tracks is an area where improvements are needed to more accurately characterize the objects when they are lethal (RV), or delivery system parts (tanks or Post Boost Vehicles (PBV)), or debris pieces (leftover items once RV is deployed). To date the Object Classification (OC) efforts on the Upgraded Early Warning Radar (UEWR) sensors has focused on funding large defense contractors with the implicit assumptions that the state-of-the-art is mature, they know precisely what has to be done, and with no fundamental research necessary to put the models together. These assumptions are inherently flawed, and the products obtained by funding such projects are typically financially expensive and fail to meet the desired end results or expectations. Typically current OC efforts "train" their Databases (DB) to certain selected attribute or feature sets, which work well for the simulated training sets of trajectories and complexes, for specified physics of the underlying object scintillation. Any significant deviation from the training set, or scintillation characteristics, and application to new missile complexes can render the DBs useless. Even for the same complexes, if the objects in the training set emanate from different locations and/or fall into a different part of the globe compared to the trajectories being tested, the performance can be significantly different. Maps are created in multi-feature dimensions, and then to see if the contours associated with those maps can provide distinction or separation for different types of objects. Despite best efforts, the map contours of different types of objects may not distinctly separate out even in multi-dimensions of features once all the cases are merged into a single DB. Adding algorithmic complexity in the interest of tightly mapping a selected training set can actually backfire in those cases where simpler algorithms had worked in the past. A fundamental study needs to be carried out where additional innovative features need to be evaluated to see if they can provide enhanced distinction between objects. As an example, in addition to size based features (actual features are classified), one needs to examine how those size based features vary as distance from the sensor (e.g., size divided by distance squared), or with time (e.g., size change per unit time), or tumbling rate (e.g., size variation as a function of aspect angle), or other innovative features. The current approaches also bin each track to the same feature space contour maps, without considering the interdynamics of the objects. For example, if we know that certain tracks belong to a single complex (since they perhaps originated from a single track before splitting), and if each complex is known to have precisely a single lethal object, knowing that very basic fact should allow one to devise algorithmic refinements in assigning probabilities when the underlying single map based mechanism predicts multiple RVs as part of the same complex. The current approaches have also limited the OC determination to a single thread computation. The compute power is cheap, multiple software threads can be considered on different feature spaces, each providing their results to an executive thread with probability of classification, which will make the final determination of the object type. It is entirely possible that certain threads, in less number of size based features (perhaps even in one or two dimensions) may provide very good distinction for some objects (distinction between objects would be converted to a probability scale), whereas for some objects more dimensions may be needed if the simple approach does not yield adequate discriminating results. The simple or complex calculations should be immaterial if they are running on independent parallel threads, as long as each thread is able to enter to the real time requirements of the sensor.		781-225-0395	AFLCMC/HBQR		mehtab.pervaiz.ctr@us.af.mil	M. Max	Pervaiz	Dr.
266	Operational impacts of cloud computing versus C2 needs for positive control of source data.	Paper should focus on the impact software engineering pushing DoD to invest in clouding computing where positive control of C2 data may not be possible, how C2 doctrine will be affected and if traditional C2 doctrine for positive control remains operationally sound.		757-225-3366	HQ ACC/A5	Hampton	john.swartz.4@us.af.mil	John	Swartz	Mr.
267	Intelligence Support to the Test and Evaluation Community	"Anticipate and plan for responsive and emerging threats by building stronger partnerships of acquisition, intelligence and requirements communities." (Kendall, 2015). While progress has been made the specific sub-discipline of Test and Evaluation has not been adequately considered for intelligence needs. Intel support to test and evaluation is an important piece of the acquisition enterprise. Intelligence provided to Test and Evaluation could possibly influence key milestone decision points, effect cost, schedule, & performance decisions, identify risk and assist in mitigation & trade-off analysis for a program. For example, the Test and Evaluation Master Plan (TEMP) documents the overall structure and objectives of the T&E program, which provides a framework to generate detailed T&E plans. Additionally, the TEMP documents schedule and resource implications associated with the T&E program. The TEMP identifies the necessary DT&E,OT&E, and LFT&E activities. These activities should have accurate and timely intelligence data to adequately test against. Currently, intel offices within Air Force Test Center provide intelligence support at the operational level. These offices are not resourced or trained to support the TEMP and have no input into the development of the TEMP or review of the draft product prior to signature. AFLCMC may be positioned to support the TEMP, but have documented resource constraints that limit or prevent TEMP support. Program offices rarely have organic intelligence staff. Since program office staff provide the preponderance of manpower for test offices, there are no intelligence staff to support the test offices. Conduct a study to: 1) Document existing organization and manpower, with emphasis on interfaces between test and intelligence communities. 2) Document existing processes & products for both test and intelligence, with emphasis on interfaces between test and intelligence processes & products. 3) Identify the provenance of intelligence products or services used by the test community, with emphasis on discovering any products or services that are not provided by or sourced through AFMC intelligence offices. 4) Evaluate test products and processes for potential improvement through new or enhanced intelligence support. Include a review of Air Force lessons learned with a focus on intelligence support issues related to test and evaluation. 5) Interview a representative sample of the AFMC workforce for both the test and intelligence communities. The interview should have multiple objectives and result in a summary report. The objectives should include: a. Identify trends in positive or negative bias between the two cultures of test and intelligence. b. Identify trends in perceived friction points and their perceived sources. c. Identify trends in recommendations to improve partnership between intelligence and test communities.		937-257-2869	HQ AFMC/A2		daniel.atkins@us.af.mil	Daniel	Atkins	Dr.
268	Assessment of the Methodology for Determining Stressed Career Fields	An assessment of the methodology for determining stressed career fields and the associated manner in which the AF Corporate Structure is informed of the varying limitations and consequences of lead/lag time to support operational requirements. Given the disconnect between the A1 community "these are our stressed AFSs," the A4 community "we are short maintainers," and the A3 community "rated (particularly 11F) manning is a train-wreck," ... what are the processes, from accession to retention, by which, manpower is appropriately resourced, given the current and future force structure.	314-224-0404	703-614-0404	AF/A3OR	Washington	thomas.k.livingston.mil@mail.mil	Thomas	Livingston	Col
269	Understanding the Global Health Landscape to identify "trigger" events to assist in Military Medical Operation Planning and Humanitarian Operations	Research the possible connection/correlation with the spread of infectious diseases (epidemic and pandemic) and the occurrence of mass atrocity events		703 681-8171	AFMSA/SG5	Falls Church	Brian.d.dmccarty2.civ@mail.mil	Brian	McCarty	GS-15
270	Restoring the High/Low Mixture of Forces - Developing a Analysis Based Methodology	Much force development in recent years has been towards "Cadillac systems" like the F-35, Carrier Strike Groups, and other high end systems; high-end forces with highly concentrated capability sets. Some systems with high capability are needed in the future major conflicts, but there is a canary in the coalmine with past work using Lanchester's laws and the Salvo Equations, that suggest if cost to equip is a constraints that applying national resources to a mixture of high-low forces may present a more survivable and capable force using cost as a constraint. Recent technological trends such as cheap swarm-based drones, highly networked sensor-shooters, and additive manufacturing may swing the pendulum towards fielding inexpensive platforms with "diffused capability" featuring mixed medley of a lot of single- or few-capability platforms. Is there a way to develop an analysis based method to plan for future forces recognizing cost to equip and combat effects on the dollar? A case study developed with a limited Joint mission set like Combat Air Patrol, or Close Air Support with some projected force mixtures may be revealing...?		757-225-4180	HQACC/A5	JBLE	oliver.easterday@us.af.mil	Oliver	Easterday	Maj

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271	Development of US Air Force Fatigue Risk Management System Instruction (Policy	Human fatigue remains a ubiquitous and pervasive threat throughout the Air Force and to national security. Numerous aviation and ground mishaps cite human fatigue as causal or contributory. Human fatigue continues to plague Air Force 24/7 operations. A study by Rand, Sleep Problems and Their Impact on U.S. Servicemembers, published 6 Apr 2015, stated "Not only was it rare for servicemembers to get the recommended seven to eight hours of sleep per night, but around 31 percent reported getting five hours or less - an amount linked to an increased risk of mental and physical health problems. This rate is much higher than that reported in the general population...Somewhat surprisingly, there were few statistically significant differences in sleep problems or sleep-related behaviors according to deployment history." Multiple Air Force Instructions define duty limits to at least partially mitigate fatigue (AFI 11-202V3, AFI 11-2MDS-V3, AFI 21-101, AFI 44-119). Numerous programs and resources provide sleep physiology and fatigue management training (Aerospace & Operational Physiology, Airmen Resiliency, Safety, etc.). There have been multiple attempts to integrate policy and requirements into various career fields (i.e. maintenance, intelligence and security forces). However, there is no overarching Air Force system		703-681-7554	AFMSA/SG3/5PT	Falls Church	james.w.lasswell2.mil@mail.mil	James	Lasswell	Col
272	Can autonomous software be designed and licensed like a pilot is trained and licensed?	- Today: Certify platforms and license operators (pilots). - Future: Certify platforms and license Autonomous algorithms Applies to the V&V and Certification of all near future Autonomy based DoD systems. - Investigate current processes for training autonomous system operators, identifying requirements for documenting the â€œpedigreeâ€Ïof an Autonomy algorithm (in design or as it learns) as it relates to the â€œpedigreeâ€Ïor â€œcompetencyâ€Ïof a human operator - Identify tech gaps, social implications, military advantages, should approach be pursued within DoD	312-785-8483	937 255-8483	AFRL/RQQ	WPAFB	matthew.clark.20@us.af.mil	Matthew	Clark	Electronics Engineer
273	Human Capital - A Critical Look at Developing Better Thinkers	Identify the kinds of thinking required for the Air Force's effectiveness (critical, creative, and systems thinking), ways to measure our thinking skills today, and how to recruit, retain, incentivize, and develop Airmen with a tendency for disciplined thought. Background: The AF incorrectly uses the term critical thinking to cover all forms of rigorous and disciplined thinking. In fact, there are several different styles of thinking and we need to harmonize them for the most effective organization. If we say we are going to develop better thinkers, then what is our baseline? what level do we want them to reach? how will we measure that? how will we ensure the AF continues to weave rigorous thought into the operational AF and make it more than a single instruction period at PME? A recent AWC paper applied a quantitative methodology to measure the critical thinking skills of ACSC and AWC students, finding no statistically significant difference between the two populations. Furthermore, they scored at only the 35th percentile when compared to a normative group with a master's degree. This suggests that we are not developing critical thinking skills (most likely generalizable to creative and systems thinking) through officer leadership and staff experience, and that we are not very good at it in the first place.	312-493-1371	334-953-1371	LeMay Center/IN	Maxwell AFB	adam.stone@us.af.mil	Adam	Stone	Lt Col
274	Implications of Middle East Diaspora on US relations with NATO/Europe	With Europe under an unprecedented Middle East diaspora, what are the short and long term implications to the US-NATO alliance? Does this diaspora have the potential to undermine NATO credibility/resolve to counter Russian behavior/aggression? What steps can the US and NATO alliance take now to mitigate/shape any negative trends driven by this diaspora?		703-697-0447	AF/A5R	Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ
275	LeMay Center -- operational issue	2) Bridging the gap between Air Force Tactics/Techniques/Procedures and Doctrine. Airmen know TTPs, but do not know Doctrine - how do we (Air Force) fix it?								
276	LeMay Center -- operational issue	6) How to make the acquisition system more effective and efficient (and timely).								
277	Correlation of cognitive and physiological metrics with Airman Performance in support of assessing Integrated Operational Support impact on mission accomplishment	Describe an approach for determining the impact of integrated operational support on mission outcomes in one or more high interest populations such as special or virtual operators. Determine what current Air Force mission outcome measures from training or operational data are available and amenable to correlation with cognitive or physical performance measures? Is current mission outcome data collected and measured in a way that allows for real-time analysis of mission progress/success or predominantly analyzed post-hoc? Do other services (USN/USMC/USA) currently conduct correlation of intra/post mission outcomes to cognitive and physical performance metrics.		937-938-2804	USAFSAM/FH	Wright-Patterson AFB	ryan.mayes.2@us.af.mil	Ryan	Mayes	Dr.
278	Are manning cuts in the Acquistion career field counter-productive for cost savings	DoD Acquisitions, like all other career fields, have been under significant manning pressure; most acquisition and base contracting centers are undermanned. At what point do manning cuts cost more than they save? Compare program performance and cost stability/increases relative to manning levels. Is the DoD paying more in poor acquisition management than it is saving in manpower costs?		801-777-5781	AFNWC	HIll AFB	dylan.monaghan.1@us.af.mil	Dylan	Monaghan	Maj
279	Innovative and Agile	- What should the USAF do to make us more innovative and agile? What policies/processes can we streamline to make our research efforts more agile?Â - Objectives -- Independent review and analysis of USAF Policies/Processes and possible suggestions to make USAF more agile. Missions -- Air Dominance Desired Insights -- Recommendations for streamlining and enhancing Productivity and Military Capability	312-986-7274	937 656-7274	AFRL/RX	WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
280	Training SOF for the future: Identifying skill gaps and seams	The future operating environment is defined by an increasingly interconnected global commons paired with the increasing effects of non-state actors. SOF preparing to operate within this environment are bound by fiscal constraint, decreasing resources, and manpower limitations amongst an era of expanding SOF requirements. While the characteristics of warfare within this environment will continue to evolve, what are the skills not yet currently present within special operations that are assessed as necessary for success? How can USSOCOM effectively prioritize training efforts while addressing the risks assumed with inaction? Given the likely requirement for Foreign Internal Defense (FID) and UW missions, how critical are language capabilities? How does culture and cultural intelligence play a role? What are the current training gaps, and what are the future training requirements? Should training be broadened throughout all SOF or focused on specific SOF specialties?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
281	Unintended Consequences that Modernizing the Military's Retirement System Will Have on Physician Retention Rates Within the Military Health System	Physicians already receive large professional pay bonuses and yet we have trouble retaining them past their initial commitment. With the ability to leave the service with a significant TSP balance, will we see even lower physician retention rates? Will the professional pay have to be further increased to retain physicians?		801 586-9516	75th Medical Group	HIll AFB	jeffrey.cook.3@us.af.mil	Jeff	Cook	Lt. col
282	What impact will a low cost attritable aircraft have for the USAF for warfighting, maintenance, and for the industrial base?	The concept of a low cost attritable aircraft has implications for future US strategy and warfighting. In addition, producing these aircraft on demand using multiple sources and equipping them with a variety of low cost payloads will impact the industrial base, manufacturing, and supply chains. Furthermore, changes to aircraft integrity and reliability requirements driven by low cost attritable designs will also impact maintenance and sustainment approaches. Research on this aircraft concept should address one or more of these areas that it may impact.		937-656-7274	AFRL/RX	Wright-Patterson AFB	monica.poelking@us.af.mil	Monica	Poelking	Civ
283	Electronic Readiness Tracking	Analyze current commercial/industry standards and practices for electronically tracking personnel, equipment, and training (e.g. GPS, scanning bar codes, etc.) and how data is collected and analyzed (use of analytical software). Also analyze other DoD/service (i.e. Navy) capabilities/tools used to track readiness. Identify initial costs, long term benefits, and risks involved in implementing an AF wide system and develop a phased implementation plan.		719-554-0563	HQ AFSPC A2/3/6OR	Peterson AFB	jerome.white@us.af.mil	Jerome	White	lt. col
284	Microbiome and Human Performance nexus	Investigate connections and linkages between the microbiome and human performance. Explore how microbial community influence and regulate human performance. The basis of the study should examine the claims that having the "right" microbiome make-up in the gut could have beneficial effects on your performance. Explore the role of prebiotics, probiotics and other nutritional tools to manipulate the microbiome to enhance human performance in airmen.	785-8222	937-255-8222	711 HPW/CL		rajesh.naik@us.af.mil	Rajesh	Naik	Dr.
285	The Application of Export Control Laws to Defense Research	Examine the costs and benefits of applying the International Traffic in Arms Regulation (ITAR), Arms Export Control Act (AECA), and Export Administration Regulations (EAR) laws to the products of DoD 6.2 and 6.3 research efforts. Objective: Determine whether or not these laws are being appropriately applied to various categories of Defense Research; if not then there is considerable waste of effort and lost productivity from overly restricting R&D collaboration with international and domestic commercial and academic partners		937-528-8290	RYAT		vincent.velten@us.af.mil	Vincent	Velten	
286	What Impact Does the Air Force's Lack of Family Practice Physicians Have on Patient Safety	As the Air Force Medical Service struggles with retaining Family Practice Physicians, one of the answers is to hire healthcare extenders (Nurse Practictioners and Physican Assistants). Although extenders are very capable, they are not physicians. Will this have an effect on patient safety?		801 586-9516	75 MDG	HIll AFB	jeffrey.cook.3@us.af.mil	Jeff	Cook	Lt. Col

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287	Patient management strategies for medical operations in denied environments	Considering the potential for decreased patient survivability and decreased advanced surgical trauma care, conduct research and analysis on potential expectations, ethical dilemmas, and patient management strategies for medical operations in denied environments		808-388-8791	PACAF SGR	JB Pearl Harbor-Hickam	james.sandvig.1.ctr@us.af.mil	James	Sandvig	Dr
288	What is the mpact of synthetic biology and low-cost gene splicing technologies on the defense enterprise?	Carlson curve predicts acceleration of DNA read and write technologies similar to Mooreâ€™s Law. DNA is the software that controls the cell, and these technologies promise to enable complete â€œread-writeâ€Ï capabilities. Biology then becomes a programmable factory or machine. What are the implications of this emerging technology revolution from critical material supply chains to weaponization? What policies and technologies are required to ensure AF use of these capabilities?		937-656-7274	AFRL/RX	Wright-Patterson AFB	monica.poelking@us.af.mil	Monica	Poelking	Civ
289	The identification of toxic leadership behaviors and how to facilitate change to those behaviors.	First, providing information on how organizations and individuals identifiy toxic leaders. Second, providing individuals and organizations with information and resources for facilitating changes in those behaviors.		801-777-7500	75 ABW	HIll AFB	linda.mckenzie_bergloff.2@us.af.mil	Linda	McKenzie Bergloff	Dr.
290	The identification of bullying and other nonsexual harassment behaviors and how to facilitate changes to those behaviors.	The identification of bullying and other nonsexual harassment behaviors and how to facilitate changes to those behaviors.		801-777-7500	75 ABW	HIll AFB	linda.mckenzie_bergloff.2@us.af.mil	Linda	McKenzie Bergloff	Dr.
291	Volatility Analysis of Earned Value Data	The purpose of this study is to apply Volatility Analysis to earned value reports and test the accuracy of the estimates at the completion of testing. Volatility Analysis is a subset of technical analysis which employs various methodologies in forecasting the direction of prices for financial securities. This type of analysis compares the historical standard deviation of a sevurityâ€™s prices to its current or short run standard deviations; the greater the difference, the greater the volatility. Using this information, probabilities can be assigned to a range of potential outcomes.		937-656-5477	AFRL	Wrigth Patterson AFB	john.stedge@us.af.mil	John	Stedge	GS-13
	Production Cut-Ins: near and Long Term Impacts	How do new cut-ins to production aircraft impact the learning in the near term and/or long term? The MQ-9 is a prime example where actuals on production existed but the configuration was in constant flux. The hours associated with the new cut-ins were added but the learning curve slope remained unchanged and the additional hours ran down the same curve based on the previous configuration. These new hours were applied to the learning curve and calculated off the current unit instead of starting that subset of hours off at unit 1, thus understanding and flattening the learning. The analysis should be broken out by areas of the aircraft affected (i.e. avionics bay vs landing gear).		937-656-4357	AFLCMC/FZCE	Wright Patterson AFB	anthony.munafo@us.af.mil	Anthony	Munafo	GS12
	OPIR Industrial Base Strategy	Current material of choice for OPIR sensors is difficult to manufacture, resulting in low yields and increased costs. Problem Statement: Current material of choice for OPIR sensors is difficult to manufacture, resulting in low yields and increased costs. Task: Identification of an AF strategy to secure the industrial base or to divest of HgCdTe infrared material focal plane array technology.		719 554-6605		Colorado Springs	michael.bracchi.2@us.af.mil	Mike	Bracchi	GS-13
	Establishment of military bases overseas	Identify the history on how and why military bases were established overseas		405 739-2678	PZAA	Tinker AFB		Deborah	Smith	GS-14
	Additive Manufactoring (Incorporate new technology into the logistics and maintenance community)	Develop a sound policy / practice of developing new technology and required policy, training, certification and documentation of implementation and execution. Link AFI21-102, AFI21-101, and AFI63-101 requirements into Life Cycle guidance and policy so new technology becomes a viable process for depot and field level repair with clear direction on how technology is used, and technical guidance and training is meets users needs for safe execution.		937-251-1270	HQ AFMC A4f	WPAFB	robert.eardley@us.af.mil	Robert	Eardley	Mr.
	Current AF fitness standards	Research current AF fitness standards/(theater physical training) to determine suitability for performance in a denied environment.		808-388-8791	PACAF SGR	JB Pearl Harbor-Hickam	james.sandvig.1.ctr@us.af.mil	James	Sandvig	Dr.
	National and International policy overview concerning transit of potentially CBRN contaminated aircraft	Recent events related to the 2014 Ebola and 2011 Operation Tomodachi contingency response operations highlight the difficulty ensuring aircraft can transit international borders and return to the United States. There are many stakeholders in the public policy regarding transit of aircraft in these circumstances. With the advent of dispersed operations in A2/AD environments, the issue will become even more complex. The objective of this research topic is to identify the relevant public policies and regulatory framework for aircraft transiting international borders, and domestically within the United States, that may be CBRN contaminated or suspected of CBRN contamination. The author is encouraged to make recommendations for future tactics, techniques and procedures to facilitate the safe transit of aircraft while complying with applicable regulatory standards.		757-225-8481	HQ ACC/SG	JBLE	acca10oOperations@us.af.mil	Randolph	Smith	Col
	Operationalizing the Combat Cloud	Determine future Combat Air Force capability requirements and employment considerations to support the full range of military operations		757-225-8371	HQ ACC/A3	JBLE	acca10oOperations@us.af.mil	Russell	Vieira	Mr.
	Assessing Information Assurance and Mission Effectiveness	What does information sharing contribute to mission effectiveness and how can it be assessed? The advent of the Joint Information Environment (JIE), Mission Partner Environment (MPE), and other DoD and USAF initiatives (Unified Capabilities, Cloud, Cyber, Mobile Devices, ISR Information Architecture, etc.) all emphasize the need for information sharing (IS). This carries with it a need for a common data framework, federated information architectures, integration of system of system (SoS) construct functions to provide needed information sharing capabilities, and interoperability (structural, syntactic and semantic) of information across Air Force Service Core Functions (SCF); among domains, organizations and users (Joint, coalition, allied); throughout ROMO. Information sharing is more than simply a process of connecting networks and nodes or information exchange requirement (IER) identification related to mission. The IS chain (gather, post, process, archive, dispose) and the IS capabilities delivered along that chain, needs to be linked to the mission chain (plan, execute, monitor, assess) in order to categorize, quantify, qualify, and evaluate the contribution of IS capabilities to mission accomplishment within an operational context and along a mission thread.		757 764-6272	ACC/A6	JBLE	hugh.way@us.af.mil	Hugh	Way	Mr.
	Space and Cyberspace Domains	Space and cyberspace domains are becoming increasingly contested, as alluded to in the comments by CDR AFSPC, Gen Hyten, since he took command. These domains should be viewed as warfighting domains that could potentially be supported by, rather than supporting, the traditional warfighting domains. How does the AOC need to evolve to better incorporate space and cyberspace into its operations and provide C2 of space/cyberspace when they are the supported domains? Does there need to be a new construct to C2 space and cyberspace and coordinate with other domains the way the AOC C2s and coordinates Air operations?	312-692-7633	719-554-7633	AFSPC/A5XC	Peterson AFB	randall.gardner.1@us.af.mil	Randall	Gardner	Major
	In the context of a contested cyberspace domain, what will Cyberspace Superiority actually look like?	US Armed Forces are well-versed in gaining and maintain Sea Control, Land Control and Control of the Air, with detailed understanding of what is required in terms of specified and implied tasks, what the consequences and risks are, and what capabilities must be brought to bear to achieve these objectives. Arguably, however, we have never had to fight and win Cyberspace Superiority. The essence of the topic requires an analysis of the similarities and differences between Cyberspace Superiority and Control of the traditional warfighting domains. It should also examine what cyberspace capabilities should be employed and how cyberspace forces should be postured to most effectively fight and win Cyberspace Superiority given the unique nature of the domain.	312-692-2413	719-554-2413	AFSPC/A8XP	Peterson AFB	SEAN.LANGRISH.GB@US.AF.MIL	Sean	Langrish	O-4/Sqn Ldr

As of 25 Jul 2016

Air University -- Prioritized Research Topic List (Vector 1: Provide Effective 21st-Century Deterrence)

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
12	EMP survivability of all essential aircraft, systems, and facilities AF-wide	Examining the AF as a whole, how prepared are we for an electro-magnetic pulse (EMP) event. What aircraft and systems would survive such an event and which ones would we need to respond to such an event?		757-225-8481	HQ ACC/A10	JBLE	acca10oOperations@us.af.mil	John	Anderson	Lt. Col
13	The future of USAF international partnerships and coalitions	Are there new long-term alliances that can enhance U.S. national security and global stability? Will existing alliances produce the needed partnerships for the future environment? How do engagements with current partners need to change/evolve to meet future USAF security goals? Are there other partnerships that can be established not based purely on geography? Based on the changing world and increased challenges in in fielding a globally dominate force, the U.S. must be willing to critically examine its current partnerships, as well as be creative with establishing new, mutually beneficial, alliances.		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
14	Cyber Sneak Attacks	Are we prepared to defend against a Cyber Pearl Harbor or 9/11 type attack? ACC depends on the availability and security of the cyber domain to execute combat missions. Currently 24 AF is designated AFCYBER and is tasked with the safeguarding of our networks and information systems. Has USAF or AFSPC as the lead for Cyber, adequately resourced 24 AF to defend the cyber terrain, or are we vulnerable to a surprise attack that could render our technical advantage useless?		757 764-6272	ACC/A6	JBLE	hugh.way@us.af.mil	Hugh	Way	Mr.
18	Implications of Very Low Yield Precision Nuclear Weapons	Examine the issue of credibility enhancement versus higher possibility of actual use in light of the Russian doctrine of escalate to deescalate. Current US nuclear policy allows for the modernization of weaponry but does not allow for increased mission capability. Is it prudent to modify this policy in order to produce very low yield weapons which would enhance the credibility of our Nation's nuclear deterrence posture without being provocative given Russian doctrine?		301-981-9833	AF/A5SW	JB Andrews	gregory.p.bailey2.ctr@mail.mil	Greg	Bailey	Civ
19	Tactics and Procedures Development for Long Range Cruise Missiles	The Air Force Science and Technology (S&T) community is developing several technologies that could provide options for improving the speed, range, and flexibility of future weapons. These include low cost and hypersonic cruise missile technologies which will allow users to engage targets at long range, and will require new tactics and procedures for employment. Hypersonics are one of the game changers that could provide high-speed options to engage time sensitive targets, while improving the survivability of Air Force systems. These systems can be boosted to hypersonic speeds and fly to the targets powered by an airbreathing engine, or boosted and then glide to targets. Recommend student teams be assigned to develop strategies, tactics, and procedures for employment of these new weapon technologies. Each need a requirements analysis and development of concept of operations for a variety of scenarios. They should work with the Air Force Research Laboratory to understand the capabilities of these low cost and hypersonic cruise missiles.		571-256-0329	SAF/AQRT	Washington	john.j.pernot.civ@mail.mil	John	Pernot	Dr.
20	Proliferation of Global Navigation Satellite Systems (GNSS), Pseudolites, and Beacons	What policies, if any, should the U.S. implement to manage the proliferation of GNSS systems, and especially the proliferation of air and ground-based pseudo-satellites (pseudolites) and positioning beacons? GNSS systems with at least some satellites on-orbit include GPS, GLONASS (Russia), Galileo (EU), and Beidou (China). Regional satellite navigation systems underway include QZSS (Japan) and IRNSS (India). These systems are being augmented by air and ground based pseudolites and positioning beacons including the Locata system being deployed on Air Force test ranges, and Japan's Indoor Messaging System (IMES). Pseudolites and beacons may be widely proliferated, especially for indoor use. Questions to consider include: â€¢ What policies should be developed concerning spectrum use, including: o Use and issuance of pseudo-random noise codes o Incorporating message or other data capability into navigation signals o Compatibility/interoperability standards? o Spectrum bands appropriate for use by pseudolites and beacons for various applications â€¢ Which capabilities should DoD explore further for possible use and why? â€¢ How does the need for coalition interoperability affect these policies? â€¢ What are the advantages and disadvantages of incorporating various allied (or potential adversary) GNSS signals into U.S. GPS user equipment?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
28	Affordable Defense of Forward Operating Bases	a.) Determine the full range of threats posed against our forward operation bases b.) Assess the capabilities of current systems and strategies to defend them c.) Evaluate the military utility of alternate strategies and materiel solutions, such as enhanced mobility, hardening, additional counter-TBM systems/airborne TBM/CM weapons d.) Determine cost benefit ratios to assess options in light of current fiscal constraints	875-5908		AFLCMC/XZW		gregory.barnette@us.af.mil	Greg	Barnette	Civ
34	Policy and Foreign Relations Implications of <1 Day Launch on Demand	- AFRL/RQ is working with AU LeMay Wargame center to quantify AU/CCâ€™s vision for a CONUS based platform to deliver air power globally in about 1 hour (called Air Guardian) - Topic scope includes examining implications of delivering air power (e.g. weapons, supplies, troops, etc) anywhere on the globe via an extra-atmospheric vehicle to national and international policy - Example potential policy concerns are 1) foreign air space violations, 2) projecting weapons through space, and 3) perception of a nuclear ICBM launch	937-255-3088	937-255-3088	AFRL/RQQD	WPAFB	barry.hellman@us.af.mil	Barry	Hellman	Strategic Planning
37	Impact of Global Space Endeavors on International Space Security	International space activity is increasing in scope and activity from a relatively small number of well-known players to many emerging nations and other new entrants. With this awareness, the recent Strategic Portfolio Review (Space) identified the ability of the United States to work in alliances and international partnerships as a great national strength. The development of U.S. space strategy would benefit from an improved understanding of spacefaring nationsâ€™ political context, and an assessment of their national and corporate policies, strategies, and trends, to supplement the more conventional approach of documenting space hardware development efforts. Avenues for investigation include: â€¢ An analysis of official policy contrasted with observed activity â€¢ Pursuit of or investments in innovative or breakthrough technology â€¢ Impact of the proposed International Code of Conduct for Outer Space Activities â€¢ Incentives and likelihood of adhering to internationally established norms of behavior â€¢ Long-term impact of policies departing from treaty language limiting territorial or sovereignty claims on space bodies (i.e., property rights in space and the implications for economic, political, and military exploitation).	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
39	1. Small Satellite Concerns	The proliferation of small satellites (smallsats) is a growing problem for the national security space community. In 2013, there was a 269% increase in the launch of 1kg-to-50kg smallsats over the previous year. Substantial annual growth in numbers of these satellites is projected to continue, based on existing programs and announced plans of developers. By one estimate, between 2,000 and 2,750 smallsats of this size are expected to be launched from 2014 to 2020. A single launch vehicle can deploy dozens of cubesats. The International Space Station (ISS) also has the ability to deploy small payloads routinely. New services, intended to be operational before the end of this decade, are being developed to place an increasing number of smallsats in orbit at decreasing cost. The growth is primarily driven by rapidly expanding non-governmental activity. Attracted by low-cost commercial off-the-shelf (COTS) technology, greater access to space via increased rideshare opportunities, a growing industrial base, and sophisticated satellite buses that are declining in cost, smallsat companies are carving out a market niche and academic institutions are embracing the hands-on learning opportunities. As greater numbers of smallsat constellations are deployed, issues of maneuverability (or the lack of it), active and passive identification, and end-of-life disposition must be addressed. The U.S. regulatory regime for these operations is still in its development stage. There is also no agreed-upon international standard or code of conduct addressing this activity. The research project should explore policy and safety considerations; identify impact, if any, to orbital debris standards compliance (nationally and internationally); assess the effectiveness of advocating and adopting appropriate international norms of behavior; and evaluate other remedies which might ease the potential space traffic management problems associated with the proliferation of small satellites in low Earth orbit.	7036147725	7036147725	SAF/SP EA-5	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
40	Establishment of military bases overseas	Identify the history on how and why military bases were established overseas		405 739-2678	PZAA	Tinker AFB		Deborah	Smith	GS-14
53	The impact of Chinese expansionist policies on U.S. national security interests	What is a greater threat to U.S. interests in the Pacific, Chinese expansion to the West, to the South, and beyond? The South China Sea dominates the news, however, it is worth examining the implications of the Chinese expanding West into the Middle East, and beyond (e.g., into Africa and South America) for U.S. national security interests.		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
56	What is the impact of DLA supply planning practices on long term sustainment health of the B-1, B-52, KC-135 weapon systems since 2000	DLA has implemented several supply planning practices based upon their internal metrics. Sometimes those practices fail to meet the needs of supplies on the shelf for long term sustainment of older weapon systems. Can any increase of MICAPs or decrease of Aircraft Availability be correlated to these supply practices.		405-736-3033	448 SCMW/QA	Choctaw	joel.clay.1@us.af.mil	Joel	Clay	Mr.
60	Identify Weapon System Sustainment (WSS) Sustaining Engineering (SE) Funding Shortfalls across the Nuclear Enterprise.	To conduct a study on the unique risks to nuclear weapon systems by underfunding sustaining engineering. AFCANs IV Chapter 3 requires AFMC conduct a study that: 1) Identifies the risks to the nuclear weapons systems by underfunding sustaining engineering, 2) provides alternate solutions to better fund sustaining engineering, 3) performs root cause analysis of sustaining engineering (AFCANS IV 3.7a) funding shortfalls.		937-257-4963	AFMC/A10SP		deborah.hileman@us.af.mil	Deborah	Hileman	
62	AFMS contributions to AF Global Partnership Strategy	Review how AFMS Global Health engagements link and support the USAF Global Partnership Strategy (SAF/IA).		703-681-6986	AFMSA/SG3X	Fairfax	juan.i.ubiera.mil@mail.mil	Juan	Ubiera	Lt. Col
69	Mapping the Value of AF Bioenvironmental Engineering:Â Comparison(s) to Other Federal Models	AF Bioenvironmental Engineering (i.e., AFSCs 43E and 4B) arose from the Army Sanitary Corps to eventually build capability and capacity spanning the following constituent OPM Occupational Series: 0690 (Industrial Hygiene), 0801 (General Engineering and Architecture), 0819 (Environmental Engineering), 1306 (Health Physics), and 1310 (Physics).Â Apparently no other element of the DoD, DOE, HHS, or any other department or agency of the USG consolidates so many occupations into one career field to execute Occupational and Environmental Health (OEH), Health Risk Management (HRM), and Radiation Safety/Protection Officer (RSO/RPO) roles.Â Does the value of the Bioenvironmental Engineering model create more efficiency for the warfighter (and taxpayer) than more specialized approaches?Â How can this value best be quantified, tracked, and analyzed? Â Â		703 681-6988	Â AFMSA/SG3PB	Falls Church	anthony.j.cagle.mil@mail.mil	Anthony	Cagle	Maj
78	Strategic Stability in an Unstable World: Potential Military Aspects of Strategic Stability in the Contemporary Geopolitical Environment	During the Cold War, the term â€œstrategic stabilityâ€referred to the nuclear balance between the two superpowers. In recent years, strategic stability has generally referred to the strategic relationship between the major nuclear powers â€" including, but not limited to, the relationship between their nuclear forces. Recent U.S. government efforts to open â€œstrategic stabilityâ€dialogues with Russia and China have not gained traction. With US-Russian relations facing increasing challenges â€" and US-China relations increasingly complex â€" what measures (whether, unilateral, bilateral, or multilateral), if any, could the U.S. military propose to U.S. policymakers bolster strategic stability in the nuclear, space, or cyberspace domains?	703-676-8019	703-676-8019	AF/A10-SI (CTR)	Arlington	justin.v.anderson4.ctr@mail.mil	Justin	Anderson	Contract Research Spc
79	Assessing Potential Space Arms Control Agreements	Should the U.S. support a new space arms control treaty and, if so, what type of treaty limitations, restrictions, information exchanges, and verification measures would be beneficial to US security? Current U.S. space policy strongly supports developing multilateral mechanisms to address issues that represent common challenges to all space-faring nations, to include the potential negotiation of space arms control agreements. U.S. policy also states, however, that it will only consider space arms control agreements that are â€œequitable, effectively verifiable, and enhance the national security of the United States and its allies.â€Since the Outer Space Treaty entered into force in 1967, attempts to develop space arms control agreements have proven unsuccessful. Space arms control proposals have generally failed to pass the â€œequitable, effectively verifiable, and enhance [US national security]â€test. This proposed paper would assess whether a future space arms control agreement could meet these standards, and, if so, would further investigate the potential parameters of this agreement with regard to central limits, information exchanges, and the verification regime it would need to employ.	703-676-8019	703-676-8019	AF/A10-SI (CTR)	Arlington	walter.m.conrad.ctr@mail.mil	Walt	Conrad	Strategic Research Contr
80	What is the best mechanism for AF to command and control (C2) conventional and nuclear forces simultaneously, when all forces are forward deployed in a geographic combatant commanderâ€™s AOR?	AF executes C2 for conventional forces very well. AF executes C2 for nuclear forces very well. However, AF does not have the capability, including both forward deployed equipment and trained personnel, to C2 a conflict that begins as a conventional war, escalates to include a limited nuclear strike, and de-escalates back to a conventional war. Examples of these limited nuclear operations executed in conjunction with enabling conventional air operations could include JASSM-ER support to ALCM, JASSM-ER support to B-2 nuclear operations, or F-16 SEAD support to NATO-led F-15E nuclear operations. National Command Authority (NCA) retains C2 of nuclear forces, while the Air Operations Center (AOC) retains C2 of conventional forces. AOCs do not receive nuclear Emergency Action Message (EAM) execution and termination orders, and NCA C2 nodes are not co-located with AOCs. An example of one of the challenges is communication and coordination of mission efforts related to survivability and the acceptable level of risk (ALR) to air operations. The President retains sole execution and termination authority; as such, the airborne mission commander during a nuclear sortie does not have the authority to deviate from Presidential authorizations. However, during this mission the enabling conventional support assets may face a threat environment greater than allowed by the mission ALR. At that point coordination would be required back to NCA to terminate the nuclear mission, but airborne mission commander platforms in theater may not have the capability to do so, especially in a communications denied or degraded environment. Proposed research would address appropriate mechanisms to simultaneously C2 nuclear and conventional forces worldwide; and include analysis of issues such as trained deployable manpower, associated equipment, training, large scale exercise test beds, etc.	703-693-9747	703-693-9747	AF/A10	Arlington	usaf.pentagon.af-a10.mbx.af-a10-workflow@mail.mil	Joel	Douglas	USAF Major
81	Effects of Hypersonic Weapons on Deterrence	Hypersonic weapons increase the speed of warfare, decreasing time available for national leadership to observe, orient, decide, and act (OODA). Nuclear deterrence relies on time factors to observe a threat and react, while preserving capabilities to message increasing postures, and provide retaliatory strikes in the event of surprise. If hypersonic weapons decrease our ability observe and react, will a new fundamental approach be needed for deterrence, or is a retaliatory capability sufficient?		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
82	Space Domain Deterrence â€"Tactics, Techniques, and Procedures Across the Spectrum of Warfare?	There are logical subtopics which may themselves constitute meaningful areas of study: a. What are appropriate peacetime norms of behavior in space, and how would the Law of War apply to a war extending to space? [Note: The two parts of this topic could be worked by separate subgroups on a single research team]. b. How can we achieve sufficient (credible) superiority in multi-domain power to create a calming effect in space? c. How to create effective deterrent strategies in Contested, Degraded, and Operationally-limited (CDO) space and cyberspace environments? [Objective success criteria may be achieving conditions when certain assets are understood by both sides to be strategic only, and that attacks on them will be considered sufficient cause to initiate strategic exchanges]. d. How can we partner with commercial providers and allies most productively? [Objective success criterion is to determine a measurable balance between getting the most benefit from partnering without giving up too much ability to act unilaterally]. e. What role, if any, should manned spacecraft play in a space war? [Objective success criterion is to identify deterrent leverage that such assets possess which unmanned vehicles do not]. f. Devise strategies for deciding what to reveal and what to conceal in space deterrent capabilities and operations. g. What security architectures should be incorporated in deterrent measures which extend to the space domain?	719 554-3582	719 554-3582	HQ AFSPC/A2/3/6Q	PETERSON AFB	kevin.whaley@us.af.mil	Kevin	Whaley	Lt Col
115	National and International policy overview concerning transit of potentially CBRN contaminated aircraft	Recent events related to the 2014 Ebola and 2011 Operation Tomodachi contingency response operations highlight the difficulty ensuring aircraft can transit international borders and return to the United States. There are many stakeholders in the public policy regarding transit of aircraft in these circumstances. With the advent of dispersed operations in A2/AD environments, the issue will become even more complex. The objective of this research topic is to identify the relevant public policies and regulatory framework for aircraft transiting international borders, and domestically within the United States, that may be CBRN contaminated or suspected of CBRN contamination. The author is encouraged to make recommendations for future tactics, techniques and procedures to facilitate the safe transit of aircraft while complying with applicable regulatory standards.		757 764-1209	HQ ACC/SGPB	Joint Base Langley-Eustis	randolph.smith.3@us.af.mil	Randolph	Smith	Col
116	AFMS contributions to Aviation Enterprise Development	Review how AFMS Global Health engagements link and support the Aviation Enterprise Development.		703-681-6986		Fairfax	juan.i.ubiera.mil@mail.mil	Juan	Ubiera	Lt. Col
130	Strategic Planning and Performance Measurement for the USAF Nuclear Enterprise	Research for this topic is aimed at gaining a better understanding of how resourcing and policy decisions impact readiness and mission execution in the USAF Nuclear Enterprise. A natural extension of this line of inquiry is the construction of a framework for strategic planning and performance measurement based on such a plan. The result of this research, which could be multiple research efforts, should provide senior decision-makers insight into setting priorities, measuring and managing performance and achieving the desired level of readiness and success in mission execution.	703-693-9747	703-693-9747	HAF/A10	Arlington	david.d.odonnell.civ@mail.mil	David	O'Donnell	GS-15
148	Global Security and National Security implications of the acceleration of life science and biomedical technologies and	Analyze the acceleration of life science and biomedical technologies and capabilities and the associated risks. Examine 'dual -use dilemmas' of current and future capabilities within AFMS/MHS research programs including exploitation of 'big data'. Apply a risk and benefit assessment framework for each individual scenario along with the mitigation strategies.		703681-8187	AFMSA/SG5	Falls Church	brian.d.mccarty2.civ@mail.mil	Brian	McCarty	GS-15

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
158	Linking an Exposure Science Data Analytics/Informatics IMS to AF Mission Sets and Major Weapons Systems	Establishing an Individual Longitudinal Exposure Record (ILER) for members/veterans of the Armed Forces remains a major initiative for ASD Health Affairs.Â AF Bioenvironmental Engineering (i.e., AFSCs 43E and 4B) plays a key role in data collection, analysis, and entry for the ILER; and continues to shape and populate the Defense Occupational and Environmental Health Readiness System (DOEHRS).Â How does the AFMS transition from an exposure repository to an Information Management System useful in real-time analysis of mission sets and weapons systems against Bioenvironmental Engineering exposure science work?Â		703 681-6988	AFMSA/SG3PB	Falls Church	anthony.j.cagle.mil@mail.mil	Anthony	Cagle	Maj
176	How might the USAF accurately determine reliability of Nuclear Command, Control and Communications (NC3) systems?	Nuclear-capable bombers, weapons and Intercontinental Ballistic Missile weapon systems have documented, validated reliability metrics. These metrics are supported by data collection and integrated to provide Weapon System Reliability statistics of sufficient granularity to inform planning decisions. Although AFGSC has made significant recent progress in collecting Nuclear Command, Control and Communications system metrics through a variety of means and sources, documenting overall reliability for NC3 systems, and therefore the system of systems, remains difficult. AFGSC/A3 requests the Air University devote research into what metrics should be collected on individual systems to document their reliability, and how system reliability can be tied to system-of-systems reliability.	781-9954	318-456-8681	AFGSC/A3Y	Barksdale AFB	montague.samuel.3@us.af.mil	Montague	Samuel	Mr.
177	What are the extents of effects of nuclear bursts on communications across the electromagnetic spectrum (EM)?	There is little consolidated written information regarding the effects of electromagnetic pulse (EMP) and scintillation of the atmosphere following nuclear burst(s), especially when the nuclear events are expected to be separate, isolated events. AFGSC needs better understanding of how proximity, yield, and altitude of burst affect the EM spectrum, especially those portions used for communications. Research should answer how long communication recovery times will be based on a variety of nuclear burst attributes and scenarios. Documentation of the geographic extent of nuclear effects on communications is also desired. This information will be used by AFGSC to make planning and budgeting decisions for sustainment and acquisition activities for Nuclear Command, Control and Communication systems.	781-9954	318-456-8681		Barksdale AFB	montague.samuel.3@us.af.mil	Montague	Samuel	Mr.
178	Acquisition of Nuclear Systems in an Interagency Environment	The acquisition, modernization, and/or sustainment of nuclear weapon systems are an interagency endeavor. The delivery platform, of the weapon system, is developed/modernized/sustained by the DoD (specifically the Department of the Air Force and the Department of the Navy). The warhead, however, is developed/modernized/sustained through the DOE (specifically the National Nuclear Security Administration, NNSA). To bridge the current seams, interagency groups exist, called the Project Officer Groups (POGs) co-chaired by a DoD representative and an NNSA representative. The study should review the strengths/weakness of the existing process and recommend a range of improvements, up to and including a wholesale change in the construct outlined in DoDI 5030.55.		505-846-1678	AFNWC/ST	KIRTLAND AFB	edward.jakes@us.af.mil	Edward	Jakes	Col
179	Reestablishing the Air Force Nuclear Enterpriseâ€"An Action Plan to Make Lasting Change in the areas of Requirements and Resources	RESEARCH OBJECTIVE: â€¢ Articulate and summarize the NDO mission set and driving regulations and treaties to include leadership guidance/intent â€¢ Understand and depict the requirements generation process for the Nuclear Enterprise â€¢ Summarize the adequacy of current resourcing for the existing NDO mission â€¢ Define the minimum acceptable requirements for future NDO systems and the adequacy of the current plan and anticipated programmatics â€¢ Depict and articulate the competing/complimentary roles of the various stakeholders â€¢ Identify overlapping efforts within the Service which contributes to Enterprise inefficiencyâ€"Identify gaps which are not being adequately addressed, but could be if we reallocated resources (from overlapping efforts) to better address the capability gaps â€¢ Provide recommendations with alternatives and suggested Lead OPRs to ensure operational relevancy to the far-reaches of the planning horizon (30 years) ADDITIONAL BACKGROUND: â€¢ The USAF Nuclear Enterprise (NE) is composed of the Air Force nuclear forces, supporting logistics structure, command and control organizations, weapons sustainment and modernization activities, and activities of relevant headquarters, agencies, and centers. â€¢ Multiple MAJCOMs, operational stakeholders and critical staff organizations are involved in the management, direction, and oversight of the NE; however, there is a deficiency which precludes a single voice and continuity in message when it comes to resources and requirements â€¢ The objective of this effort is to establish a vision for how the NE can best ensure a single and consistent message with regards to requirements and resources from a Title 10 perspective, which is so critical to USAF organize, traine and equip responsibilities â€¢ Key source document include: The Creedon Report, General Welch and Admiral Harvey Independent Report, the Rand Report, The Defense Science Board Review, The Air Force Comprehensive Assessment of Nuclear Sustainment, and other Joint/Service Strategies and Studies.		505 853-7711	AFNWC/XP	Kirtland AFB	gregory.kern.5@us.af.mil	Gregory	Kern	GS 14
180	Cyber Deterrence	What is cyber deterrence? What would it look like? What would the US attempt to achieve? How would the US communicate it cyber prowess to deter others? How would the US know it had been achieved? Is cyber deterrence another mutual assured destruction?		703-697-0447	AF/A5R	Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ
181	Deterrence in Cyberspace	How best should we achieve deterrence in cyberspace operations? Do we overclassify some capabilities that could better be used to demonstrate credible deterrent capability?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	PETERSON AFB	william.mcculley@us.af.mil	William	McCulley	Lt Col

As of 25 Jul 2016

Air University -- Prioritized Research Topic List (Vector 2: Maintain Robust and Flexible Global Intelligence, Surveillance and Reconnaissance)

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
1	Exploitation of commercial and international space capabilities to conduct military operations	The portfolio of space capabilities available both commercially and internationally is growing rapidly, particularly in remote sensing and satellite communications. For example, commercial entities are exploiting small satellites to deliver persistent high-resolution imagery and full motion video. In satellite communications, numerous companies are planning to blanket the world with communications services that provide fiber-like throughputs. In the context of information dominance, access to these growing capabilities is critical to military operations. Moreover, potential adversaries will also be capable of using these resources. The current DoD policy landscape may present challenges in exploitation of these resources due to security implications and inflexible procurement rules. In light of these challenges, the following issues require investigation: Will capabilities indigenous to the United States and those of close allies be sufficient to deliver the required space capabilities to achieve information dominance in support future military operations? How can the elements of national power (diplomatic, informational, military, economic) be used to ensure access to emerging foreign space capabilities while denying them to potential adversaries? How can the use of foreign space capabilities be balanced with the risk of dependence on them?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
17	Cyber / EW relationship	- How does effective spectrum dominance and directed energy integrate with cyberspace dominance and are the two mutually exclusive? - How do the services utilize offensive and defensive cyberspace effects using spectrum dominance through electronic warfare? - With the continued expansion of wireless networking and the integration of computers and radio frequency communications, should EW be looked at as a supporting function of cyberspace operations or vice versa?	719-554-3338	719-554-3338	HQ AFSPC/A2/3/6C	PETERSON AFB	corey.ramsby@us.af.mil	Corey	Ramsby	Col
24	Leveraging Commercial Space Assets for DoD Space Needs	In 1960, only the US and the Soviets flew spacecraft. Today, due to an explosion in the commercial marketplace, DoD is a minority player in space with 95% of all GEO spacecraft owned and operated by commercial entities. The commercial marketplace has also expanded from communications, to ISR and SSA with major new entrants such as Google, PayPal (SpaceX), PlanetLabs, Skybox and other poised to launch 1000's of new spacecraft. To maintain our military advantage, it is imperative for the USAF to tap into these data sources for through commercial leveraging. We have been using this approach effectively for wide-band communications in the last 10 years, but now must expand into space and ground SSA, ISR, and C2. This poses major new technical challenges such as trusting the commercial data, fusing it with legacy AF /NRO data, injecting the data and capability into historically closed AF systems, and developing acquisition approaches to quickly adapt to a rapidly changing commercial market to best take advantage of this opportunity. What are the ramifications to leveraging commercial space assets for DoD space needs? How could this be utilized to enhance DoD missions?		505-853-1889	AFRL/RV		alexander.howard@us.af.mil	Alex	Howard	
29	Battle Management and C2 in A2AD Environments	The A2AD environment presents major challenges for battle management, command, and control (BMC2) as traditional BMC2 assets such as AWACS and JSTARS will be pushed beyond the A2 boundary where they are ineffective due to excessive range and low grazing angles. Concepts are evolving for performing non-traditional ISR, strike, and electronic warfare in A2AD environments using penetrating platforms, but BMC2 represents a major problem that will need to be addressed in a substantially different manner than in more permissive environments. This proposed study addresses future alternative concepts for addressing these challenges.		937-528-8548	AFRL/RYM		david.curtis.6@us.af.mil	Dave	Curtis	
41	The future of tasking multi-role airpower assets	What is the optimal way to task and prioritize the missions of multi-role assets? Currently ISR assets are tasked via ISR-D and the RSTA while CAS and Interdiction sorties are tasked via the ATO. B-1â€™s and F-15â€™s are often conducting ISR while Predators and Reapers are regularly conducting deliberate strikes and CAS. Does the fluidity and mission flexibility of multi-role assets warrant a new way to prioritize and task missions?		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
43	What are the operational implications of conducting battle damage assessment (BDA) through sampling and extrapolation versus 100% post-strike confirmation?	Given the current accuracy and reliability of precision munitions can battle damage assessment (BDA) be effectively and reliably be conducted through sampling and extrapolation versus 100% post-strike confirmation? Can this approach along with a tighter integration with operational campaign effects assessments provide a risk averse decision maker acceptable BDA? How would this approach impact the operational commanderâ€™s risk calculus and what criteria are necessary to gain a commanderâ€™s trust in such an approach? This effort would support the AFRL/RI Full Spectrum Targeting Program, Automated Battle Damage Assessment Project by providing operational insights and an initial feasibility assessment on alternative approaches to conducting BDA and would further guide the development of technologies supporting BDA. The current BDA paradigm is highly risk averse in that targets are presumed live until proven dead. Target status typically verified though combat assessment of the effectiveness of individual strikes, most often based on analysis of EO imagery. Due the risk averseness of decision makers and the quality of BDA provided by EO imagery, decision makers often refuse to accept BDA not based on this source. Under this current paradigm the demand for a high degree of confirmation of individual strikes would quickly exceed the capacity of the ISR enterprise during a large major combat operation. Given the current accuracy and reliability of precision munitions this high degree of post-strike verification may in fact be an unnecessary use of valuable ISR resources. In addition, air campaign operational effects assessments are often similarly based on combat assessments of individual targets. Operational effects are usually inferred through counts of targets killed versus observation of the desired effects themselves. An alternative could be to extrapolate BDA results from the assessment of a sample of representative targets within a large scale attack or target complex. This could be complemented by a refocusing of the operations assessment effort from the individual targets to the overall effects which may lend themselves to verification by a broad spectrum of collection methods other than EO imagery. A tightly coordinated and synergistic effort between the BDA cell and the operations assessment team could provide the commander a holistic and decision quality assessment of the air campaign. This approach could be enabled by new data analytic and information fusion technologies. Such a refocusing from individual targets to effects could require a fundamental change in the commanderâ€™s understanding and calculus of operational risk. This has to be understood as well as the criteria necessary to gain a decision makerâ€™s trust in such a process. This proposed research would consist of a deep dive into and extensions of approaches considered in the 2002 School of Advanced Air Powers Studies thesis titled â€œAssessing Airpowerâ€™s Effects: Capabilities And Limitations Of Real-Time Battle Damage Assessmentâ€ authored by Lieutenant Colonel John T. Rauch, Jr. In light of new technological developments in precision munitions, data analytics, and data fusion a relook at these BDA alternatives might yield fruitful insights.		315-330-4263	AFRL/RIED	Rome	joseph.raquepas@us.af.mil	Joseph	Raquepas	Dr
53	The impact of Chinese expansionist policies on U.S. national security interests	What is a greater threat to U.S. interests in the Pacific, Chinese expansion to the West, to the South, and beyond? The South China Sea dominates the news, however, it is worth examining the implications of the Chinese expanding West into the Middle East, and beyond (e.g., into Africa and South America) for U.S. national security interests.		703-697-0775	AF/A5SG	Washington	ryan.a.link.mil@mail.mil	Ryan	Link	Lt Col/Deputy Director
54	OPIR Industrial Base Strategy	Current material of choice for OPIR sensors is difficult to manufacture, resulting in low yields and increased costs.		719 554-6606	AFSPC/ST	Falls Church	michael.bracchi2@us.af.mil	Mike	Bracchi	GS-13
87	Define the pros and cons of Manned and Unmanned ISR and propose an appropriate USAF ISR force mixture.	Topic Description: The purpose of this study is to examine the pros and cons of manned and unmanned ISR. Based on findings, the researcher should propose an ideal USAF ISR force mixture. The researcher should not make recommendations based on personal opinion or bias, but rather should conduct an in-depth analysis of factors such as doctrine, operational requirements, manning considerations, platform efficiencies, cost, geopolitical considerations, basing, command and control, and the relative capabilities of both.	312-579-7181	850-884-7181		Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans

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88	How do we address the differences between Strategic and Tactical Indications and Warning from the CONOPS, leadership and technical execution perspectives as well as across and between levels of command?	Indications and warning, or I&W, is a process used by the defense and intelligence communities to detect foreign developments that could potentially threaten U.S. military, political or economic interests or U.S. citizens abroad. The process includes forewarning of enemy actions or intentions, imminent hostilities, insurgencies, attacks on the United States or its forces or allies, hostile reactions to U.S. reconnaissance activities, terrorist attacks and other events. While the importance of I&W across all echelons is clear, the delineation between tactical and strategic I&W remains ill defined. The goal of the this proposed effort is add clarity to this delineation in order to inform and guide AFRL/RIâ€™s technology development approaches for both the current Automated Indications and Warning Program and the follow-on Strategic Indications and Warning Program. Under the Automated Indications and Warning program AFRL/RIED has developed and delivered key machine learning and data fusion technologies providing the warfighter and decision maker with tactical I&W capabilities. In preparation for the FY18 new start Strategic I&W Program key questions will need to be addressed concerning the nature of tactical warning versus strategic warning. Is the transition from tactical to strategic warning fundamentally an issue of scalability to longer time scales and broadened scope or context? Or are there key conceptual differences which demand new technological approaches? What are the key differences in CONOPS? What are the differences in leadership roles both in tasking the I&W enterprise and in the use of I&W for decision making? How do the warning problem sets differ fundamentally between levels of command? How do we posture the warning enterprise and what technologies are needed to automatically anticipate a possible range of possible futures for rare events that are of interest to national security? A clear understanding of these topics will help ensure the success of AFRL/RI I&W programs at delivering the right technologies to the warfighter and decision maker.		315-330-7147	AFRL/RIED	Rome	carolyn.sheaff@us.af.mil	Sheaff	Carolyn	Civ
89	Deep Learning for ISR	Recent advances in machine learning, particularly deep-learning, have produced near human-level performance in tasks such as: image object classification, natural language processing, and speech recognition. Interest and investments from commercial and academic entities provided the catalyst for research and have been motivated by ability to infer meaning from "Big Data". The following are needed for the USAF to maintain technical superiority in computer vision and machine learning: a) survey of current use of deep learning in relevant large data-intensive commercial and non-DoD government enterprises as well as the intelligence community to assess their use and effectiveness for detection, characterization, and prediction, b) comparison of characteristics of data streams from Air Force ISR assets with those of such other enterprises that may impact or limit Air Force ability to utilize deep learning, and c) an assessment of the abilities of deep learning methods to address aspects of ISR processing, exploitation, and analyses currently done by humans. The results of such activities would allow for two products: 1) Determination of the extent to which deep learning can enable improved processing, exploitation, and analyses of multi-source ISR data to support improved operational decision-making, and 2) Recommendations and prioritization of areas for research and development needed to enable deep learning suited to characteristics of the global integrated ISR environment.		937-528-8328	AFRL/RYAT		james.patrick.1@us.af.mil	Jim	Patrick	
114	Establishment of a Space Traffic Management capability	As space is increasingly becoming congested, an inter-agency proposal recommends the establishment of a Space Traffic Management capability, possibly building on the model of the International Civil Aviation Organization (ICAO) as it pertains to aviation. Areas for consideration include: â€¢ Are there inherently non-military activities currently performed by U.S. Strategic Command (USSTRATCOM) that can be better accomplished by a civil or commercial entity? â€¢ What is the best construct between civil organizations and DoD? Consider the following: o The Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST) is the U.S. licensing authority for non-federal launch and re-entry. o USSTRATCOMâ€™s Joint Functional Component Command for Space is the only U.S. entity with the analytical staff and space surveillance capacity to effectively monitor space traffic. â€¢ What are the benefits and risks of transferring responsibilities for conjunction assessments and advisory notices to a civilian agency?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
123	Improving Cybersecurity Intelligence Support to Weapon System Acquisition	New cyber threats to weapon systems require intelligence to help inform, manage, and mitigate threats. These threats are similar to those which threaten traditional information technology networks but whose effects can be dramatic, if successfully executed, in wartime. While the Intelligence Reform and Terrorism Prevention Act of 2004 encourages the intelligence and counter intelligence/law enforcement communities to share data more closely, maturation of this for cyber security of Air Force Weapon Systems is diffuse and needs to be addressed. As a result of this study, a roadmap for the Air Force to receive more comprehensive and holistic cyber threat assessments from both the intelligence and counter intelligence/law enforcement communities will be provided. This will empower program managers and supporting security, intelligence, and engineering personnel) to better understand and mitigate cyber security risks with higher confidence, deliver more effective weapon systems due to lower cybersecurity risk, and avoid potential costs by designing systems with better knowledge of the comprehensive threat environment.		781-225-2795	AFLCMC/AQ		Linda.Haines.1@us.af.mil	Linda	Haines	
124	Improving Air Force Ability to Meet IMD Requirements	The weapon systems demand for intelligence mission data (IMD) far exceeds Intelligence Community (IC) production capacity. Further, adversaries are increasingly able to utilize software and hardware to dynamically alter their signatures thus rapidly rendering static IMD ineffective. Can saliency and sufficiency testing identify Air Force IMD characteristic priorities thus reducing cost and timelines? What strategies can Air Force acquisitions pursue leading to dynamically reactive or adaptive capabilities that reduce dependency on costly pre-positioned and technically detailed IMD while still establishing the means to maintain the decisive strategic advantage?		937-257-2869	HQ AFMC/A2		daniel.atkins@us.af.mil	Daniel	Atkins	Dr.
149	Improving Air Force Ability to Meet IMD Requirements	The weapon systems demand for intelligence mission data (IMD) far exceeds Intelligence Community (IC) production capacity. Further, adversaries are increasingly able to utilize software and hardware to dynamically alter their signatures thus rapidly rendering static IMD ineffective. Can saliency and sufficiency testing identify Air Force IMD characteristic priorities thus reducing cost and timelines? What strategies can Air Force acquisitions pursue leading to dynamically reactive or adaptive capabilities that reduce dependency on costly pre-positioned and technically detailed IMD while still establishing the means to maintain the decisive strategic advantage?		937-257-2869	HQ AFMC/A2/5	Ludlow Falls	daniel.atkins@usaf.mil	Dan	Atkins	Dr. (SES)
150	Information Operations Capability and Sustainment	Review AF IO capability in light of personnel reductions and budget cutbacks for formal training. Understand the impact of conducting this mission with personnel from different AFSCs. (AF does not have a single, unified AFSC for IO.) Understand the impact of personnel with no prior IO experience receiving just-in-time training prior to deployment to joint IO positions. Look at the impact on oversight for IO capability in the wake of lead MAJCOM staff reductions.	312-260-7735	571-256-7735	LeMay Center/LL	Washington	paul.d.mcvinney.civ@mail.mil	Paul	McVinney	CIV
230	Rising cost of Information Assurance (IA) compliance to IT systems Operations & Maintenance (O&M) sustainment	Rising cost of Information Assurance (IA) to IT systems Operations & Maintenance (O&M) sustainment budget. Paper should focus on rising costs of IA compliance make, impacts to reduced funding for fixes and enhancements.		757-225-4145	HQ ACC/A5	Hampton	john.swartz.4@us.af.mil	John	Swatrz	Mr. (GS-13)

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
267	Intelligence Support to the Test and Evaluation Community	"Anticipate and plan for responsive and emerging threats by building stronger partnerships of acquisition, intelligence and requirements communities." (Kendall, 2015). While progress has been made the specific sub-discipline of Test and Evaluation has not been adequately considered for intelligence needs. Intel support to test and evaluation is an important piece of the acquisition enterprise. Intelligence provided to Test and Evaluation could possibly influence key milestone decision points, effect cost, schedule, & performance decisions, identify risk and assist in mitigation & trade-off analysis for a program. For example, the Test and Evaluation Master Plan (TEMP) documents the overall structure and objectives of the T&E program, which provides a framework to generate detailed T&E plans. Additionally, the TEMP documents schedule and resource implications associated with the T&E program. The TEMP identifies the necessary DT&E,OT&E, and LFT&E activities. These activities should have accurate and timely intelligence data to adequately test against. Currently, intel offices within Air Force Test Center provide intelligence support at the operational level. These offices are not resourced or trained to support the TEMP and have no input into the development of the TEMP or review of the draft product prior to signature. AFLCMC may be positioned to support the TEMP, but have documented resource constraints that limit or prevent TEMP support. Program offices rarely have organic intelligence staff. Since program office staff provide the preponderance of manpower for test offices, there are no intelligence staff to support the test offices. Conduct a study to: 1) Document existing organization and manpower, with emphasis on interfaces between test and intelligence communities. 2) Document existing processes & products for both test and intelligence, with emphasis on interfaces between test and intelligence processes & products. 3) Identify the provenance of intelligence products or services used by the test community, with emphasis on discovering any products or services that are not provided by or sourced through AFMC intelligence offices. 4) Evaluate test products and processes for potential improvement through new or enhanced intelligence support. Include a review of Air Force lessons learned with a focus on intelligence support issues related to test and evaluation. 5) Interview a representative sample of the AFMC workforce for both the test and intelligence communities. The interview should have multiple objectives and result in a summary report. The objectives should include: a. Identify trends in positive or negative bias between the two cultures of test and intelligence. b. Identify trends in perceived friction points and their perceived sources. c. Identify trends in recommendations to improve partnership between intelligence and test communities.		937-257-2869	HQ AFMC/A2		daniel.atkins@us.af.mil	Daniel	Atkins	Dr.
283	Electronic Readiness Tracking	Analyze current commercial/industry standards and practices for electronically tracking personnel, equipment, and training (e.g. GPS, scanning bar codes, etc.) and how data is collected and analyzed (use of analytical software). Also analyze other DoD/service (i.e. Navy) capabilities/tools used to track readiness. Identify initial costs, long term benefits, and risks involved in implementing an AF wide system and develop a phased implementation plan.		719-554-0563	HQ AFSPC A2/3/6OR	Peterson AFB	jerome.white@us.af.mil	Jerome	White	lt. col

As of 25 Jul 2016

Air University -- Prioritized Research Topic List (Vector 3: Ensure a Full-Spectrum Capable, High-End Focused Force)

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	Email	Org Name	First Name	Last Name	Rank
1	Exploitation of commercial and international space capabilities to conduct military operations	The portfolio of space capabilities available both commercially and internationally is growing rapidly, particularly in remote sensing and satellite communications. For example, commercial entities are exploiting small satellites to deliver persistent high-resolution imagery and full motion video. In satellite communications, numerous companies are planning to blanket the world with communications services that provide fiber-like throughputs. In the context of information dominance, access to these growing capabilities is critical to military operations. Moreover, potential adversaries will also be capable of using these resources. The current DoD policy landscape may present challenges in exploitation of these resources due to security implications and inflexible procurement rules. In light of these challenges, the following issues require investigation: Will capabilities indigenous to the United States and those of close allies be sufficient to deliver the required space capabilities to achieve information dominance in support future military operations? How can the elements of national power (diplomatic, informational, military, economic) be used to ensure access to emerging foreign space capabilities while denying them to potential adversaries? How can the use of foreign space capabilities be balanced with the risk of dependence on them?	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
2	Unity of Effort for National Security Space	There has been recent movement within the Department of Defense and Intelligence community to explore some level of space operational integration to better posture the United States to fight a war that could extend to space. Paper should explore such concepts as: - What is the implied requirement/benefit of integration? - What levels of integration should be on the table (ranging from information sharing, to a single, unified commander for all DOD/IC capabilities) - Is there benefit to including commercial, civil, allied participation in the concept? - What level of integration would be appropriate for commercial, civil, allied participation? - What authorities would be required to implement the concept? - What would be the downside to this type of integration? - What would be implications to PPBE? - What would be pros/cons from a terrestrial warfighting perspective--would air/land/maritime domains benefit or be harmed from this concept? - What are the greater geopolitical implications for operational integration? Would this notion drive an adverse reaction among other states? If commercial/civil/allied were included, would that change the geopolitical reaction? Would allied integration serve as a deterrent to aggression against the US or US space systems?		7036935838	HAF/A3S	TODD.W.GOSSETT.MIL@MAIL.MIL	AF/A3/5	Todd	Gossett	Colonel
3	Operational Contract Support (OCS)	OCS is a critical component of total force capability. Across Defense components and functional areas, we share responsibility for OCS readiness. A plan must be implemented to shape the work which must be done for the joint force to depend on OCS throughout the range of military operations. OCS spans numerous functional areas and all phases across operations. It can be a decisive factor in major combat operations; irregular warfare; and stabilization, reconstruction, and transition missions. Listed below are attributes which may assist in an effective implementation of OCS: - OCS comprises the planning, synchronization and integration of contracted support, contractor management, and contracting in a geographical combatant commander's theater, and when directed in a joint operations area (JOA). - The overall result will be more responsive, effective, and accountable contracted support to the Joint Force Commander (JFC). - Leaders must routinely consider the risks, benefits and implications of contracted support when planning, executing and assessing all phases of operations. - Commanders will operate in a future security environment characterized by constrained military budgets, reduced uniformed capability and capacity, economic uncertainty, and increased competition for resources. - This concept proposes OCS as an essential part of an affordable force mix where contracted support will be rapidly integrated into military operations and will be as accountable and responsive as military forces. - OCS JC solution framework will significantly provide benefits via a reduced military footprint; optimized capabilities with increased cost consciousness; more agile transitions between operational phases; improved operational risk assessments and mitigation measures associated with contractor support; improved requirements management; improved contract management planning; more responsive contracting; and greater accountability in managing contractors and the associated financial processes. Research Goals: 1. Develop and explore ideas for the need for OCS, while obtaining buy-in from USAF leadership and functional areas that this is a total force issue. 2. Advantages and disadvantages of OCS implementation. 3. Implementation of an affordable mixture of functional resources operated within a financially constrained environment. A fully supported recommendation on implementation amongst all functional areas of the USAF. 4. Develop recommended DOTMLP-F (doctrine, organization, training, materiel, leadership and education, personnel and facilities) changes to institutionalize OCS in the AF. 5. How an OCS planner is developed and what constitutes an effective OCS planner.	260-2400	571-256-2400	SAF/AQCX	melissa.j.applegate.civ@mail.mil	SAF/AQ	Melissa	Applegate	Chief, Contin/Frc Mgt Div
4	Future High-Low Weapons Mix -- Capability/Quantity Optimization	Future Anti-Area/Area Denial (A2/AD) scenarios stress current tactical reconnaissance-strike capabilities to meet campaign objectives. Successful future counter-A2/AD capabilities will likely involve an optimized mix of capabilities that are manned and unmanned, stealth and EW, stand-off and close-in, as well as precision and wide-area in nature. Key drivers in these scenarios include: a large anticipated target set, costs associated with fielding and stocking new weapons systems, and the necessity to attack across the enemy A2/AD kill chain in time and space. Given these drivers, developing, procuring, and employing the optimal mix of munitions becomes critical. In the munitions area, various future concepts include hypersonic air-breathing cruise missiles, tactical boost glide weapons, supersonic cruise missiles compatible with F-35 internal carriage, GBU-X, swarming hunter-killers, and more. This proliferation of potential munitions types creates a conundrum of determining what would be the best mix to pursue and in what quantities based on reasonable price points. The purpose of this study would be to explore the tradespace of future weapons mixes to identify the most promising in terms of types, quantities, and costs so as to better guide S&T and RDT&E investments that produce a viable counter-A2/AD capability at an affordable overall cost. Short of that, identification of the salient analytical characteristics (most insightful measurands, proper scenario vetting/selection, sensitivities, etc.) would be highly useful.		937-656-2808	AFRL/RQ	arthur.huber@us.af.mil	Air Force Research Lab	Art	Huber	Col
5	Operationalizing the Combat Cloud	Determine future Combat Air Force capability requirements and employment considerations to support the full range of military operations		757-225-8371	HQ ACC/A3	acca10oOperations@us.af.mil	HQ Air Combat Command	Russell	Vieira	Mr.
6	What are the Air Force's counter-small unmanned air system strategy and regulatory approaches, and how can they be improved?	The objectives are to: 1) describe the Air Force's current strategy and regulatory approaches in an area with fast-breaking technology and a growing, but uncertain threat, and 2) propose approaches that account for likely technology changes, and domestic (local, state, federal), foreign, and international law. [Primary POC: Mr. Charlie Williamson, SAF/GCI, 703-693-9292, charles.w.williamson12.civ@mail.mil]		703-697-0883	SAF/GCI	craig.a.smith5.civ@mail.mil	Missing Organization	Craig	Smith	SES, Dep. General Counsel
7	Innovative cyber resiliency approach	Electronic devices are susceptible to malicious manipulation. The manipulation could disclose, deny, deceive, disrupt, or destroy the electronic device or anything the device is connected to. Existing solutions to protect electronic devices from the outside using a multi-layer defense approach but not the inside. Consider applying systems engineering processes and appropriate confidentiality, integrity, and availability levels to achieve cyber resiliency from an inside out perspective.		703-697-0447	AF/A5R	david.e.ellis2.civ@mail.mil	AF/A5	David	Ellis	Mr. / Civ

8	Air Force Logistics Numbered Air Force	Enhancing AFMC Contingency Planning, Execution, Monitoring, and Control processes for more effective warfighter support Was submitted for study by RAND in 2015 and in 2012 requested a study on topic: "Reducing Risk in Operational Planning: Recognizing ACS Enterprise-Level Capabilities or Constraints and Resource Allocation Impacts." For 2016 we submit this topic as a next step. Description is a single Air Force (AF) entity that links the Logistics enterprise and provides responsive, well integrated and intelligent end-to-end Logistics Command and Control (LOG C2), across all classes of supply (total asset visibility), with intelligent and operations C2 interoperability, to deliver combat power globally, using a common operating picture. This issue is a current and enduring concern to AF senior leaders who see centralized command, distributed control, and decentralized execution as key to conducting joint operations today, in the future and understand we need to advance our C2 capabilities. Strategically, by 2035 at the operational level, AF C2 forces are planned to organize around a multi-domain operations center and the AF LOG NAF can evolve to be that center and provide the tools necessary to exercise a dynamic C2. Also, the Chief of Staff , Air Force (CSAF) has said "Unless we get better tools in the hands of our logisticians we will not WIN in highly contested and denied environments where distributed and "lilly pad" operations will be the norm. To meet the Air Force strategic guidance, the AF Logistics Board identified the AFSC/CC lead for "Multi Domain LOG C2" Capabilities and inclusion as a "top four" priority in the FY19 Planning & Programming process (CFSPs and POM). The AFSC/CC's initial assessment is that an organization and infrastructure, which does not exist today, is needed to evolve the capability as a global Logistics enterprise and this topic is the vehicle to reach what is now AF and AFMC strategic objectives. The Log NAF concept is crosscutting and aligns with AF Strategy and links to four of the five strategic vectors that identify priority areas for investment, institutional change, and operational concepts. For example, vector 2 (Global ISR): LOG NAF (C2) will receive and assess intelligent information and present best supportable options to ops to employ agile multi-domain solutions. Vector 3 (Full-spectrum capable force): The LOG NAF (C2) adds the agility and resiliency to Logistics and sustainment to provide capability across the spectrum of operations from humanitarian relief to full scale conflict. Vector 4 (Multi-Domain Approach): The Log NAF (C2) will integrate and employ capabilities operating in or through the cyberspace and space domains in addition to air capabilities. Vector 5 (Game-Changing Tech): The LOG NAF concept in itself is a game changer and will drive radical improvements in technology. That, when combined with the new approaches and organizational change, will expand or amplify the enduring effects that underpin our advantages in air, space, and cyberspace. The topic task is to deliver an "Employment Concept," which should include critical capabilities, enabling capabilities, transition from peace time ops to combat ops in multi-domains and disengagement. In addition depict Logistics NAF end state with IT architecture and interoperability with mission partners (joint, industry, etc.). The study should also inform senior leaders if a Logistics NAF is the best organizational structure, as a single entity (centralized C2), to provide intelligent end-to-end LOG C2, across all classes of supply to effectively support the warfighter. There are several disparate AF efforts addressing this topic via concept of operation papers, but no one is doing a study that will shape the entire enterprise. The Air Force is challenged to investigate and conduct studies of this magnitude,	339-7008	405-739-7008	AFSC/LGX	joseph.betsill@us.af.mil		Joseph (Tony)	Betsill	
9	Cyber Key Terrain for the Joint Force commander	what is it, how do you seize or defend it?		703-695-5426	AF/A3CO/A6CO	michael.p.mahan3.mil@mail.mil	AF/A3/5	MICHAEL	MAHAN	Lt Col
10	Military Operations and National Policy for Cyberspace	identify gaps and challenges in our nation's approach to using cyberspace for military operations and policy recommendations to improve our ability to defend the nation		703-695-5426		michael.p.mahan3.mil@mail.mil	AF/A3/5	MICHAEL	MAHAN	Lt Col
11	Offensive Cyberspace Operations for the Air Force	should we have an "Airmindedness" to how we approach OCO; implications (force structure, equip, training, force presentation, service resourcing) and recommendations on how to do or not do it		703-695-5426		michael.p.mahan3.mil@mail.mil	AF/A3/5	MICHAEL	MAHAN	Lt Col
12	EMP survivability of all essential aircraft, systems, and facilities AF-wide	Examining the AF as a whole, how prepared are we for an electro-magnetic pulse (EMP) event. What aircraft and systems would survive such an event and which ones would we need to respond to such an event?		757-225-8481	HQ ACC/A10	acca10oOperations@us.af.mil	HQ Air Combat Command	John	Anderson	Lt. Col
13	The future of USAF international partnerships and coalitions	Are there new long-term alliances that can enhance U.S. national security and global stability? Will existing alliances produce the needed partnerships for the future environment? How do engagements with current partners need to change/evolve to meet future USAF security goals? Are there other partnerships that can be established not based purely on geography? Based on the changing world and increased challenges in in fielding a globally dominate force, the U.S. must be willing to critically examine its current partnerships, as well as be creative with establishing new, mutually beneficial, alliances.		703-697-0775	AF/A5SG	ryan.a.link.mil@mail.mil	AF/A5	Ryan	Link	Lt Col/Deputy Director
14	Cyber Sneak Attacks	Are we prepared to defend against a Cyber Pearl Harbor or 9/11 type attack? ACC depends on the availability and security of the cyber domain to execute combat missions. Currently 24 AF is designated AFCYBER and is tasked with the safeguarding of our networks and information systems. Has USAF or AFSPC as the lead for Cyber, adequately resourced 24 AF to defend the cyber terrain, or are we vulnerable to a surprise attack that could render our technical advantage useless?		757 764-6272	ACC/A6	hugh.way@us.af.mil	HQ Air Combat Command	Hugh	Way	Mr.
15	C2 Operational impact of 5th generation platforms reporting in SAP/SAR domain	C2 Operational impact of 5th generation platforms reporting in SAP/SAR domain. Paper should focus on operational impacts in the C2 community where SAP/SAR is not employed, nor operators cleared for this information. Paper can consider impact on rising number of beyond secret clearances required to implement as 4th gen and earlier systems retire and are replaced by newer platforms.		757-225-4145	HQ ACC/A5	John.swartz.4@us.af.mil	HQ Air Combat Command	John	Swartz	Mr. (GS-13)
16	Combat Cloud and the Air Force's role as Services provider	As part of the development of the Combat Cloud concept, should DoD and Service cyber assets retain a services provider role or transition to the role of services consumers in a cloud enabled environment? We are looking for an optimal approach determined from a set of possibilities of how to have the benefits of cyber services as we move to a cloud architecture.		757 764-6272	ACC/A6	hugh.way@us.af.mil	HQ Air Combat Command	Hugh	Way	Mr.
17	Cyber / EW relationship	- How does effective spectrum dominance and directed energy integrate with cyberspace dominance and are the two mutually exclusive? - How do the services utilize offensive and defensive cyberspace effects using spectrum dominance through electronic warfare? - With the continued expansion of wireless networking and the integration of computers and radio frequency communications, should EW be looked at as a supporting function of cyberspace operations or vice versa?	719-554-3338	719-554-3338	HQ AFSPC/A2/3/6C	corey.ramsby@us.af.mil	Air Force Space Command	Corey	Ramsby	Col
18	Implications of Very Low Yield Precision Nuclear Weapons	Examine the issue of credibility enhancement versus higher possibility of actual use in light of the Russian doctrine of escalate to deescalate. Current US nuclear policy allows for the modernization of weaponry but does not allow for increased mission capability. Is it prudent to modify this policy in order to produce very low yield weapons which would enhance the credibility of our Nation's nuclear deterrence posture without being provocative given Russian doctrine?		301-981-9833	AF/A5SW	gregory.p.bailey2.ctr@mail.mil	AF/A5	Greg	Bailey	Civ
20	Proliferation of Global Navigation Satellite Systems (GNSS), Pseudolites, and Beacons	What policies, if any, should the U.S. implement to manage the proliferation of GNSS systems, and especially the proliferation of air and ground-based pseudo-satellites (pseudolites) and positioning beacons? GNSS systems with at least some satellites on-orbit include GPS, GLONASS (Russia), Galileo (EU), and Beidou (China). Regional satellite navigation systems underway include QZSS (Japan) and IRNSS (India). These systems are being augmented by air and ground based pseudolites and positioning beacons including the Locata system being deployed on Air Force test ranges, and Japan's Indoor Messaging System (IMES). Pseudolites and beacons may be widely proliferated, especially for indoor use. Questions to consider include: â€ What policies should be developed concerning spectrum use, including: o Use and issuance of pseudo-random noise codes o Incorporating message or other data capability into navigation signals o Compatibility/interoperability standards? o Spectrum bands appropriate for use by pseudolites and beacons for various applications â€ Which capabilities should DoD explore further for possible use and why? â€ How does the need for coalition interoperability affect these policies? â€ What are the advantages and disadvantages of incorporating various allied (or potential adversary) GNSS signals into U.S. GPS user equipment?	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
21	LeMay Center -- operational issue	7) Threat Swarming (air and maritime) - is the threat real, and do we have an effective strategy to mitigate that threat?								
22	What are the strategic, operational, and policy implications and boundaries of an Autonomous Loyal Wingman (ALW) and supplementary UAS/autonomous weapons concept?	The objective of this research is twofold. The first goal is to determine the strategic and operational implications of the automation of an ALW teamed with small unmanned aerial systems (UAS) assets designed to complement a manned fifth generation fighter. The second goal is to uncover the policy boundaries associated with the prosecution of adversary targets using autonomous weapon systems operating in the ALW concept. For this topic, autonomy is defined as â€œthe ability to function as an independent system, unit or element over an extended period of time, performing a variety of actions necessary to achieve predesignated objectives while responding to stimuli produced by integrally contained sensorsâ€[1]. This research shall consider the strategic, operational, and policy implications of the automation of an ALW teamed with small unmanned aerial systems (UAS) assets designed to complement a manned fifth generation fighter. While no AFRL resources are anticipated to be required to complete research for this proposed topic, AFRL personnel anticipate a 1-2 day trip to Maxwell AFB to assist faculty members and students in further refinement of this topic. Secondary POC: Lloyd Clark, AFRL/RYAA, (937) 713-8291, lloyd.clark.2@us.af.mil		937 713-8585	AFRL/RYAA	marshall.haker.2@us.af.mil	Air Force Research Laboratory	Marshall	Haker	Dr.
23	How should the Air Force prepare for the proliferation of Remotely Piloted Aircraft?	The proliferation of cheap RPA technology provides any actor with access to off the shelf RPA capabilities that could disrupt military operations. These capabilities will challenge the air component's ability to deliver air superiority to joint force commanders. What types of counter-RPA capabilities should the Air Force invest in to address this issue? What would be viable concepts of operations for countering the adversary RPA threat to air superiority?		703-697-0775	AF/A5SG	kelly.d.burt.mil@mail.mil	CSAF's Strategic Studies Group	Kelly	Burt	Lt Col

24	Leveraging Commercial Space Assets for DoD Space Needs	In 1960, only the US and the Soviets flew spacecraft. Today, due to an explosion in the commercial marketplace, DoD is a minority player in space with 95% of all GEO spacecraft owned and operated by commercial entities. The commercial marketplace has also expanded from communications, to ISR and SSA with major new entrants such as Google, PayPal (SpaceX), PlanetLabs, Skybox and other poised to launch 1000's of new spacecraft. To maintain our military advantage, it is imperative for the USAF to tap into these data sources for through commercial leveraging. We have been using this approach effectively for wide-band communications in the last 10 years, but now must expand into space and ground SSA, ISR, and C2. This poses major new technical challenges such as trusting the commercial data, fusing it with legacy AF /NRO data, injecting the data and capability into historically closed AF systems, and developing acquisition approaches to quickly adapt to a rapidly changing commercial market to best take advantage of this opportunity. What are the ramifications to leveraging commercial space assets for DoD space needs? How could this be utilized to enhance DoD missions?		505-853-1889	AFRL/RV	alexander.howard@us.af.mil		Alex	Howard	
25	How will airpower impacts on Operation INHERENT RESOLVE shape future operations for US and partner nation air forces?	This is a two-part question; responses to either portion support AFCENTâ€™s objectives â€“ Part 1: â€œWhat has airpower impacted in Operation INHERENT RESOLVE?â€ AFCENT seeks to identify the mechanisms through which USAF support to Operation INHERENT RESOLVE (OIR) has shaped: operations against the Islamic State of Iraq and the Levant within Iraq and Syria; operations supporting Iraqi Security Forces (ISF) in Iraq; and operations against ISIL in Syria by non-Syrian Regime forces. Potential questions include: â€œHow have US and/or Coalition air operations shapedâ€¦â€ (1) ISIL ability to maneuver in Iraq? (2) ISIL basing and freedom of movement in Iraq and Syria? (3) ISF operations against ISIL in Iraq? (4) Coalition support to OIR? (5) Non-Syrian Regime forces combatting ISIL in Syria? The research goal is to identify how airpower has shaped OIR, both at the tactical and operational level, for the enemy (ISIL and associated organizations) as well as friendly forces (ISF, Coalition partners). Part 2: â€œHow will these impacts shape future US and partner nation air force operations?â€ AFCENT seeks to identify implications OIR portends for future US and partner nation air operations. Potential questions include: â€œHow will air operations in OIR shapeâ€¦â€ (1) Future joint air operations, to include strategies and tactics? (2) Future combined air operations with partner nations, to include political sensitivities based on religion, sect and/or patronage? (3) Future use of airpower in counter-insurgency or irregular-type conflicts where the US is supporting a host nation without capable ground forces and/or political legitimacy?	965-4122	803 895-4122	USAFCENT/A2	9AF/A2/Orgbox.US@afcent.af.mil	US Central Command	Scott	Murray	Colonel
26	Cost-benefit analysis of current cyberspace security models vs other models	The current USAF Strategy in Cyberspace is to secure information, networks, and weapon systems utilizing a layered or bastion defense model. This model has led to costly and often ineffective technical-based solutions. It has also led to security TTPs that are cumbersome, vulnerable to user error, and restrictive for information sharing. What is the potential risk/reward of alternative strategic concepts for information security like deterrence, deception, and maneuverability? For example, logistics security relies on manueverability and unpredictability. Force Protection creates constantly changing security posture through Random Anti-terrorism Measures. In both cases the goal is to increase the OODA (observe, orient, decide and act) Loop of the adversary while reducing the OODA Loop for those that provide security. Both models accept a higher level of risk in some dimensions, but the rewards have been substantial with reduced frequency and cost of security breeches. Is it possible that these or other security models could provide a better model for security in cyberspace?		937-257-2869	HQ AFMC/A2	daniel.atkins@us.af.mil		Daniel	Atkins	Dr.
27	Achieving the right balance between real and synthetic flight time. Advantages, disadvantages and side effects of the extensive use of flight simulators for pilot training and mission/combat readiness.	Air Forces around the world are constantly relying on synthetic flight training. This increasing trend is directly linked to shrinking budgets not allowing the same level of live training that Air Forces had always experienced. Moreover, while the use of flight simulators allows for more complex scenarios (sometimes impossible to perform live), taking this practice to the extreme might induce unexpected results on flight crews (not exposed to real flight condition as they used to). The scope of this research is to give an answer to the matter of finding the right balance between live and synthetic flight time using objective criteriaâ€™s thus exploring advantages and disadvantages of both type of training and potential side effects of the extensive use of flight simulators.	555-555-5555	555-555-5555	OF-4	luca.gargiulo@am.difesa.it	Italian Air Force	Luca	Gargiulo	LtCol
28	Affordable Defense of Forward Operating Bases	a.) Determine the full range of threats posed against our forward operation bases b.) Assess the capabilities of current systems and strategies to defend them c.) Evaluate the military utility of alternate strategies and materiel solutions, such as enhanced mobility, hardening, additional counter-TBM systems/airborne TBM/CM weapons d.) Determine cost benefit ratios to assess options in light of current fiscal constraints	875-5908		AFLCMC/XZW	gregory.barnette@us.af.mil		Greg	Barnette	Civ
29	Battle Management and C2 in A2AD Environments	The A2AD environment presents major challenges for battle management, command, and control (BMC2) as traditional BMC2 assets such as AWACS and JSTARS will be pushed beyond the A2 boundary where they are ineffective due to excessive range and low grazing angles. Concepts are evolving for performing non-traditional ISR, strike, and electronic warfare in A2AD environments using penetrating platforms, but BMC2 represents a major problem that will need to be addressed in a substantially different manner than in more permissive environments. This proposed study addresses future alternative concepts for addressing these challenges.		937-528-8548	AFRL/RYM	david.curtis.6@us.af.mil		Dave	Curtis	
30	AF Operations in the Future Megacity	Within the next 20 years, the US may be required to conduct operations within large urban environments. This may require AF forces to conduct operations in support of joint requirements. This study should examine the range of activities the AF may be required to support and the capabilities required to perform AF operations in the future urban sprawl known as the megacity. Specifically, the following are areas for consideration: What capabilities are required to conduct AF operations in the urban environment? Can the AF conduct,mobility, precision strike, C2, and/or PR in an urban environment? What potential new missions should the AF examine to support these future operations?		850 884-7181	AFSOC/A8X	billy.montgomery.3@us.af.mi.	AF Special Operations Command	Billy	Montgomery	GS-14
31	The Future of Organic Supply Chain	The Air Force's future organic supply chain will be shaped by the sustainment decisions made today for weapon systems such as the KC-46, F-35, T-X, J-STARS recap, and LRS-B among others; therefore, a RAND study is recommended for Air Force logistics leaders to plan the supply chain business processes, capabilities, and infrastructure today to respond to future SCM demands. If the outsourcing of SCM that started in the 1990s continues, the organic supply chain will become obsolete or at a competitive disadvantage when the legacy weapon systems, which constitute the bulk of organic supply chain business, eventually retire. The retirement of legacy weapon systems, coupled with continued outsourcing of SCM, will ultimately render the organic supply chain working capital fund unsustainable. It is imperative we formally display the impacts and aggressively communicate or mandate actions to prevent the organic and/or core supply chain demise. Ref: White Paper, The Future of the Air Force Organic Supply Chain, 15 Oct 2015, Captain Joe Mercurio	339-3708	405-739-3708	AFSC/LXGB	shannon.wagner.1@us.af.mil		Shannon	Wagner	
32	The Future of Proximity Operations in Space	Rendezvous and proximity operations (RPO) are specific processes where two resident space objects are intentionally brought close together for operational purposes. Such operations pose a safety concern as well as raise the specter of adversary interference with our critical space assets. However, proximity ops are poised to expand to multiple government and private sector entities pursuing a variety of applications. In the future we will likely see on-orbit activities such as satellite servicing (repair, refueling, and station-keeping/orbit adjustment), debris removal, robotic assembly of structures, cooperative distributed systems, and operation of habitable facilities for research and industrial purposes. Future space development will undoubtedly see increases in the frequency and sophistication of RPO. As proximity operations become routine we will likely see an operational environment in which the high sensitivity of this activity will seem increasingly out of place. At the same time, the recent strategic portfolio review for space calls for resilience and agile defense in an environment of evolving threats. Questions to consider: â€¢ What are the national security space implications of increasingly common RPO, and how could we mitigate risks? â€¢ Which types of proximity operations are of greatest concern, and how could they be detected, monitored, and if necessary, discouraged? â€¢ How should national policies and international agreements evolve to accommodate a future in which numerous global players are actively engaged in proximity operations? â€¢ Are there lessons to be learned from the gradual loosening of restrictions in other high-sensitivity space activities, such as high-resolution commercial remote sensing?	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
33	Viability of Trusted Manufacturing for DoD Space and Cyberspace Infrastructure	Faulty and/or counterfeit components in space and cyberspace not only have a detrimental impact to operations within their domains, but are additionally very costly to detect and replace. Problem Statement: Faulty and/or counterfeit components in space and cyberspace not only have a detrimental impact to operations within their domains, but are additionally very costly to detect and replace. Task: Explore the need and utility of trusted manufacturing of components for use in DoD systems, specifically those which support space and cyberspace operations.		719-554-3135	AFSPC/ST	Donald.Rhymer@us.af.mil	Air Force Space Command	Don	Rhymer	Lt. Col

34	Policy and Foreign Relations Implications of <1 Day Launch on Demand	- AFRL/RQ is working with AU LeMay Wargame center to quantify AU/CCâ€™s vision for a CONUS based platform to deliver air power globally in about 1 hour (called Air Guardian) - Topic scope includes examining implications of delivering air power (e.g. weapons, supplies, troops, etc) anywhere on the globe via an extra-atmospheric vehicle to national and international policy - Example potential policy concerns are 1) foreign air space violations, 2) projecting weapons through space, and 3) perception of a nuclear ICBM launch	937-255-3088	937-255-3088	AFRL/RQQD	barry.hellman@us.af.mil	Air Force Research Laboratory	Barry	Hellman	Strategic Planning
35	What are the Challenges in Integrating 5th Generation Air Power Capabilities in to a Seamless Force?	The USAF and RAAF (and other western Air Forces) have either begun the process of introducing fifth generation air power systems, or have (USAF F22) done so. Fifth generation air power systems provide revolutionary capabilities that will require, inter alia, transformation in concepts, organisation and personnel training and education to ensure these capabilities are used to best operational effect in a future fully integrated force. These same western Air Forces will continue to operate legacy systems in some cases for decades to come. There will therefore be significant challenges in integrating fifth generation air power capabilities such that a seamless, secure and fully connected joint force is developed, which fully caters for and integrates the capabilities of legacy systems. The aim of this research topic is to better understand the challenges inherent in fully integrating fifth generation air power capabilities, and to identify solutions to better enable the required transformation in the Air Forces concerned.		334 953-3916		Sanu.Kainikara@defence.gov.au	Australian Air Force	Sanu	Kainikara	Doctor
36	Additive Manufactoring (Incorporate new technology into the logistics and maintenance community)	Develop a sound policy / practice of developing new technology and required policy, training, certification and documentation of implementation and execution. Link AFI21-102, AFI21-101, and AFI63-101 requirements into Life Cycle guidance and policy so new technology becomes a viable process for depot and field level repair with clear direction on how technology is used, and technical guidance and training is meets users needs for safe execution.		937-257-1270	HQ AFMC/A4F	robert.eardley@us.af.mil	Air Force Materiel Command	Robert	Eardley	Mr.
37	Impact of Global Space Endeavors on International Space Security	International space activity is increasing in scope and activity from a relatively small number of well-known players to many emerging nations and other new entrants. With this awareness, the recent Strategic Portfolio Review (Space) identified the ability of the United States to work in alliances and international partnerships as a great national strength. The development of U.S. space strategy would benefit from an improved understanding of spacefaring nationsâ€™ political context, and an assessment of their national and corporate policies, strategies, and trends, to supplement the more conventional approach of documenting space hardware development efforts. Avenues for investigation include: â€¢ An analysis of official policy contrasted with observed activity â€¢ Pursuit of or investments in innovative or breakthrough technology â€¢ Impact of the proposed International Code of Conduct for Outer Space Activities â€¢ Incentives and likelihood of adhering to internationally established norms of behavior â€¢ Long-term impact of policies departing from treaty language limiting territorial or sovereignty claims on space bodies (i.e., property rights in space and the implications for economic, political, and military exploitation).	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
38	The Current State of Total Exposure Health: Tech, Science, and Policy	Total Exposure Health is a strategic initiative that integrates workplace, environment and lifestyle exposures into improving â€œHealth Situation Awareness". A new healthcare infrastructure to be defined and built that integrates ALL exposure data (workplace, environment, and lifestyles) into the clinical record, advances delivery of healthcare, patient experience, health outcomes, medical surveillance, and military operations. The purpose of the AU reserach would be to identify the current state of TEH in both the public and private sectors as it relates to -- Precision Medicine â€" Optimize preventive strategies with focus on the individual (unique & targeted) to better organize, train and equip a healthy force -- Advances Epidemiology & â€œBig Dataâ€ The current use of individual exposure data from wearables/sensors using advanced informatics to improve global health/operations -- Research & technology - Sensor development, rapid ID of unknown threats and low-level exposure biomarkers in human genomics in real-time; enhancing the human weapon system; job placement; logistics; and command and control And current DoD or Military component policy associated to bio surveillance and population and personalized health with near and future projections. The research will be used for immediate CONOPS development.		703 681-7626	AFMSA/SG3PB	Richard.t.hartman3.ctr@mail.mil	AFMSA/SG3PB	Richard	Hartman	Chief Health Strategist
40	Establishment of military bases overseas	Identify the history on how and why military bases were established overseas		405 739-2678	PZAA		Air Force Space Command	Deborah	Smith	GS-14
41	The future of tasking multi-role airpower assets	What is the optimal way to task and prioritize the missions of multi-role assets? Currently ISR assets are tasked via ISR-D and the RSTA while CAS and Interdiction sorties are tasked via the ATO. B-1â€™s and F-15â€™s are often conducting ISR while Predators and Reapers are regularly conducting deliberate strikes and CAS. Does the fluidity and mission flexibility of multi-role assets warrant a new way to prioritize and task missions?		703-697-0775	AF/A5SG	ryan.a.link.mil@mail.mil	AF/A5	Ryan	Link	Lt Col/Deputy Director
42	Adversary Capabilities within Human Genome Research	China has developed the largest, best-funded private genome research program through the Beijing Genome Institute. These publicly disclosed research capabilities hint at greater capabilities. The goal of this project is to evaluate the battlespace capabilities of adversary nations with regards to offensive or defensive human genomic research.		937-713-3018	USAFSAM/FHT	richard.chapleau.1@us.af.mil	Missing Organization	Richard	Chapleau	Dr.
43	What are the operational implications of conducting battle damage assessment (BDA) through sampling and extrapolation versus 100% post-strike confirmation?	Given the current accuracy and reliability of precision munitions can battle damage assessment (BDA) be effectively and reliably be conducted through sampling and extrapolation versus 100% post-strike confirmation? Can this approach along with a tighter integration with operational campaign effects assessments provide a risk averse decision maker acceptable BDA? How would this approach impact the operational commanderâ€™s risk calculus and what criteria are necessary to gain a commanderâ€™s trust in such an approach? This effort would support the AFRL/RI Full Spectrum Targeting Program, Automated Battle Damage Assessment Project by providing operational insights and an initial feasibility assessment on alternative approaches to conducting BDA and would further guide the development of technologies supporting BDA. The current BDA paradigm is highly risk averse in that targets are presumed live until proven dead. Target status typically verified though combat assessment of the effectiveness of individual strikes, most often based on analysis of EO imagery. Due the risk averseness of decision makers and the quality of BDA provided by EO imagery, decision makers often refuse to accept BDA not based on this source. Under this current paradigm the demand for a high degree of confirmation of individual strikes would quickly exceed the capacity of the ISR enterprise during a large major combat operation. Given the current accuracy and reliability of precision munitions this high degree of post-strike verification may in fact be an unnecessary use of valuable ISR resources. In addition, air campaign operational effects assessments are often similarly based on combat assessments of individual targets. Operational effects are usually inferred through counts of targets killed versus observation of the desired effects themselves. An alternative could be to extrapolate BDA results from the assessment of a sample of representative targets within a large scale attack or target complex. This could be complemented by a refocusing of the operations assessment effort from the individual targets to the overall effects which may lend themselves to verification by a broad spectrum of collection methods other than EO imagery. A tightly coordinated and synergistic effort between the BDA cell and the operations assessment team could provide the commander a holistic and decision quality assessment of the air campaign. This approach could be enabled by new data analytic and information fusion technologies. Such a refocusing from individual targets to effects could require a fundamental change in the commanderâ€™s understanding and calculus of operational risk. This has to be understood as well as the criteria necessary to gain a decision makerâ€™s trust in such a process. This proposed research would consist of a deep dive into and extensions of approaches considered in the 2002 School of Advanced Air Powers Studies thesis titled â€œAssessing Airpowerâ€™s Effects: Capabilities And Limitations Of Real-Time Battle Damage Assessmentâ€authored by Lieutenant Colonel John T. Rauch, Jr. In light of new technological developments in precision munitions, data analytics, and data fusion a relook at these BDA alternatives might yield fruitful insights.		315-330-4263	AFRL/RIED	joseph.raquepas@us.af.mil	Air Force Research Laboratory	Joseph	Raquepas	Dr

44	Is the Air Force prepared to conduct operations in the future Mega City?	Topic Description: As giant urban centers or megacities proliferate, social and government conditions will likely deteriorate. In the next 20 years, US forces may be required to conduct operations in these megacities in support of US national security interests. This may require US Air Force forces to conduct activities in support of joint force requirements. This study should examine the range of activities USAF may be required to support and the capabilities required to conduct Air Force missions in the future urban sprawl known as the megacity. The UN forecasts that today's urban population of 3.2 billion people will rise to nearly 5 billion by 2030, when three out of five people will live in cities. Surveys and projections indicate that urban growth over the next 25 years will be in developing countries. One billion people, almost one-seventh of the world's population, currently live in shanty towns. In many poor countries overpopulated slums exhibit high rates of disease due to unsanitary conditions, malnutrition, lack of basic health care, high rates of crime, drug addiction, poor transportation and little to no infrastructure. By 2030, over 2 billion people in the world will be living in slums. Over 90% of the urban population of Ethiopia, Malawi and Uganda, three of the world's most rural countries, already live in slums. As these megacities grow and proliferate, there is probability unrest will rise as social and government services deteriorate. If so, large ungoverned spaces will form within the urban sprawls. Groups and organizations will offer services to disaffected populations and may serve as unelected or non-recognized governments within these megacities. Over time, these centers may become safe havens for illicit actors and activities. Ultimately, these centers could become regional concerns and threats to US national security. Specifically, the following are areas for consideration. â€¢ What capabilities are required to conduct Air Force operations in the urban environment? o Can the Air Force conduct the mobility mission in the urban environment? o Can Air Force conduct effective Precision Strike in the urban environment o Are current AF ISR capabilities sufficient to operate in the urban environment? o Will Air Force Special Tactics personnel require unique equipment to operate? What special training will they require? Are there any special personnel requirements; education, training, ethnicity, language, etc. o Are there special communications requirements; command and control; agile combat support; medical, and so forth. â€¢ What are the current Air Force deficiencies? â€¢ What potential new missions should Air Force examine to support the future operations?	312-579-7181	850-884-7181		billy.montgomery.3@us.af.mil	AF Special Operations Command	Billy	Montgomery	Chief of Strategic Plans
45	How should the Air Force leverage its Allies and partners into the future?	Alliances and partnerships provide a multitude of stabilizing benefits ahead of conflict, including mass, political resilience, legitimacy, and strategic 'breathing room.' Many traditional allies and partners find themselves in a strategic context very similar to that of the US: increasing commitments around the globe with reduced resources for those commitments. How should interoperability among the Air Force and its Allies and partners be enhanced? To what extent should the Air Force shift from an interoperability to an interdependence mindset with its allies and partners? Is there historical precedent for doing so? What benefits can be reaped from such an approach? What pitfalls call such an approach into question?		703-697-0775	ASSG	kelly.d.burt.mil@mail.mil	CSAF's Strategic Studies Group	Kelly	Burt	Lt Col
46	Optimized Air Force S&T/T&E Infrastructure to Meet Current and Future Needs	Numerous studies have been conducted over the past two decades assessing Air Force (and other agencies) capabilities supporting S&T and RDT&E needs. None of these have conducted any sort of detailed optimization analysis based on acquisition workload/content scenarios in order to assess where investments should be made in a resource-constrained environment to upgrade existing facilities, build new ones, AND divest of older infrastructure. Another shortfall of previous analyses is the failure to account for the differences in S&T experimentation/test versus that conducted in support of programs of record with facilities designed for these two phases assumed to be as available and cost effective as the other. Lastly, past analyses have failed to take account of the very different business models that are used in S&T as compared to RDT&E which has had the effect on many occasions of making the MRTFB largely unaffordable to S&T programs. With the above in mind, the purpose of this study would be to posit several future scenarios, assess the adequacy of the current S&T and RDT&E infrastructure going forward to meet the future requirements, create and assess alternative future infrastructure postures (existing +/- upgrades +/- new), and propose/assess alternative business models (and the necessary accompanying policy changes) to provide the optimal capabilities for the most likely future environment with hedging as appropriate.		937-656-2808	AFRL/RQ	arthur.huber@us.af.mil	Air Force Research Lab	Art	Huber	Col
48	Benchmarking Government Technology Commercialization Strategies	Proposed project objectives: 1. Understand the Air Forceâ€™s past, current and evolving technology transfer program. 2. Benchmark how other federal agencies approach technology transfer and commercialization. At a minimum, review the efforts at the CIA (from an approach to investing), NSF, and DHS. 3. Identify changes in policy and law (FAR) that are necessary for the Air Force to approach commercialization with the intent of capitalizing on the value of the intellectual property generated from its research investment. 4. Estimate the potential Return on Investment of an innovative commercialization strategy built on the recommended policy and legal changes. The US Government funds billions of dollars in research designed to spawn development of new technologies and capabilities each year. The research covers the spectrum of maturity from basic (exploratory) to applied and near-ready for transition, and the spectrum from information, aerospace, space, environmental, intelligence, medicine, etc. Some government agencies conduct research with a view towards transitioning capabilities to either enhance existing mission systems or develop new mission systems, and do so with varying degrees of success. Some agencies also attempt to transfer technology beyond government use to spawn innovation in the private commercial sector. With the success agencies have in transitioning technology for government use, transference of the technology for private commercial use pales in comparison. Yet, there are innovative approaches being explored; principally by the Central Intelligence Agency (In-Q-Tel), the National Science Foundation (I-Corps Program), and the Department of Homeland Security (Commercialization Office). AFRL executes an annual research budget approaching $5 Billion, half of which is organically funded by the Air Force; the other is research purchased by other federal agencies. Despite various attempts to capitalize on inventory of intellectual property through commercialization of technology for private sector use, efforts have met with minimal success. Why is it a challenge for the Air Force? What are the barriers to success?		937-904-9100	AFRL/CA	ricky.peters@us.af.mil	Air Force Research Lab	Ricky	Peters	SES
49	Adversary Capabilities within Human Genome Research	China has developed the largest, best-funded private genome research program through the Beijing Genome Institute. These publicly disclosed research capabilities hint at greater capabilities. The goal of this project is to evaluate the battlespace capabilities of adversary nations with regards to offensive or defensive human genomic research.		937-713-3018	USAFSAM/FHT	richard.chapleau.1@us.af.mil	Missing Organization	Richard	Chapleau	Dr.
50	The Application of Combat-to-Dwell Inside the MQ-1/9 Force Presentation Model	Combat to Dwell time for aircrew members within the MQ-1/9 enterprise. Does it improve training/retention/health/morale of the aircrews assigned to this weapon system.		757-225-3366	HQ ACC/A3	joe.joyce.1.ctr@us.af.mil	HQ Air Combat Command	Joe	Joyce	Mr.
51	Long-term operational impacts to radar tracking as cooperative reporting rises.	Paper should focus on operational role of radar surveillance as cooperative reporting (self-reporting) from data linked equipped platforms becomes platform wide. Should radar surveillance become more of an intel function as blue forcing tracking will provide much better identification and positional data.		757-225-4145	HQ ACC/A5	john.swartz.4@us.af.mil	HQ Air Combat Command	John	Swartz	Mr. (GS-13)
52	Shared Situation Awareness in Cyberspace	How should we define shared situation awareness in cyberspace and what is itâ€™s importance to defense of the AF core missions, weapon systems, mission systems, and what mechanisms are best suited to aggregate SSA and then share it with those who require it? Are our current DCO weapon systems optimized to contribute to SSA or should we re-envision them?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	william.mcculley@us.af.mil	Air Force Space Command	William	McCulley	Lt Col

55	Can mission aircraft be more effective if integrated with Ground Control Systems (GCS)?	Topic Description: Could integrating GCS capabilities with mission aircraft such as AC-130, U-28, and MC-12 provide an opportunity for AFSOC to build more versatile crews and mitigate manning issues? Could the Air Force also leverage this concept? The purpose of this study is to propose a potential concept which provides for full spectrum GCS integration with AFSOC platforms or other operational aircraft, which could alleviate/mitigate manpower issues and enhance situational awareness and command and control. Problem Background: As the force continues to get smaller and younger, the war-fighting environment continues to evolve. This drives a need to leverage experience from multiple communities to effectively and efficiently execute NTISR and Precision strike from multiple platforms. Manpower issues continue to plague AFSOC in the precision strike and ISR (manned and unmanned) mission areas. There is a shortage of Combat Systems Operators in the C-130 community and the RPA has manning shortages across the spectrum. This issue could be mitigated if the crewmembers werenâ€™t stove piped into a single career field. This integration would allow individuals to flow back and forth between the RPA and the AC-130 possibly reducing manpower requirements. This construct would provide AFSOC with a well-rounded operator that can speak smartly across the spectrum of strike and ISR. This could also be extended to manned ISR platforms. As an example, this idea could make the AC-130 mission operator pallet/weapons control deck (MOP/WCD) controllable from the ground via a GCS eliminating the need to fly with CSOs and/or Sensor operators in the seat reducing the overall crew requirement. The AC-130 would still have both pilots on board for final weapons release consent and the Fire Control Officer (FCO) would stay on board for help in both enroute navigation and mission management at the MOP/WCD. The full gunner compliment would remain to trouble shoot weapons malfunctions. The GCS crew could be built any numbers of ways depending on mission requirements. The Intel experts that assist RPA crews would be available as well. This construct allows for maximum situational awareness in both the air and on the ground providing a layer of protection from target misidentification due to the availability of constant C2 reach back capability. Having operators in a Remotely Piloted Aircraft Operations Center (ROC) could mitigate aircraft to aircraft communication issues since the Full Motion Video (FMV) feeds and Sensor Point of Interest (SPI) information would be going to a central location. This would make target talk ons, laser spot identification and sensor transfers much easier. Crews could also work airspace deconfliction and target execution much more quickly if they are in the same facility working the same target.	312-579-7181	850-884-7181		billy.montgomery.3@us.af.mil	AF Special Operations Command	Billy	Montgomery	Chief of Strategic Plans
56	What is the impact of DLA supply planning practices on long term sustainment health of the B-1, B-52, KC-135 weapon systems since 2000	DLA has implemented several supply planning practices based upon their internal metrics. Sometimes those practices fail to meet the needs of supplies on the shelf for long term sustainment of older weapon systems. Can any increase of MICAPs or decrease of Aircraft Availability be correlated to these supply practices.		405-736-3033	448 SCMW/QA	joel.clay.1@us.af.mil	Air Force Materiel Command	Joel	Clay	Mr.
57	AF-Wide Cyber Mission Awareness	How can cyber mission assurance be provided to combat and other platforms that are not visible to 24th AF on AFNET on a 24/7 basis.. The need for information dominance makes organizations and missions increasingly dependent on cyber resources, ranging from general-purpose information and communications technologies to mission or business function-specific information systems. Those resources are subject to disruption, degradation and failure due to both hostile activities by threat actors and by environmental conditions. Interruption, degradation or imitation of critical information and data needed to support decision makers and mission owners poses significant risk to C2, mission execution, and other air operations that require integration and synchronization of geographically dispersed air elements.		757 764-6272	ACC/A6	hugh.way@us.af.mil	HQ Air Combat Command	Hugh	Way	Mr
58	LeMay Center -- operational issue	4) Stealth vs. advanced Surface to Air Missile Systems - do we own the advantage?								
59	Are Crowdsourcing-Based Approaches to Problem Solving Effective for USAF/DoD?	Our current culture and related processes are unable to exploit the larger pool of available intellectual resources to respond to our strategic national problems. The current geo-political environment is driving the Department and our partner organizations away from the conventional approach to problem recognition and corresponding risk/crisis response(s). The new nature of our situation is ever-changing, unpredictable, disruptive, and sometimes transient; this new reality induces a degree of paralysis in our strategic and critical thinking processes because of the current organizational communication methods. As a consequence, our adversaries use these constraints against us to maneuver, think, act, innovate, implement strategy and anticipate our actions faster than we can. The speed, quantity and accessibility of information has created the potential to solve problems faster and with greater accuracy. Information is no longer confined by time and geographic location, but rather by our ability to communicate with one another. Technology is erasing these boundaries, turning individuals and groups of people into mines of information resources. Are there crowdsourcing techniques, processes and technologies that can exploit this intellectual capital to improve our problem solving and decision making processes? What are the exemplary characteristics of successful crowd-based problem solving models? What are the barriers to successful application, and can/how can they be mitigated? How does a customer and the crowd participants define a successful output? What are best practices when using crowdsourcing techniques to use large populations to solve a common problem? What key functions must collaborative environments provide to enable optimal crowd/customer/facilitator performance? What are effective incentives to motivate participation and the generation of valuable outputs? The goal of this topic is to identify new problem solving techniques or methods that shorten decision cycles, increase value of outputs, retain the intellectual capital and access to contributors/innovators, and identifying the merit of outlier contributions produced during the problem solving/ideation process. An objective of this topic may be to propose a problem solving model that can be applied to the strategic issues facing the USAF/DoD which allows our forces to think, plan and act faster than our adversaries.	3346334751	3349534751	SOC/DE	christopher.evey@us.af.mil	Air University	Christopher	Evey	Major
60	Identify Weapon System Sustainment (WSS) Sustaining Engineering (SE) Funding Shortfalls across the Nuclear Enterprise.	To conduct a study on the unique risks to nuclear weapon systems by underfunding sustaining engineering. AFCANs IV Chapter 3 requires AFMC conduct a study that: 1) Identifies the risks to the nuclear weapons systems by underfunding sustaining engineering, 2) provides alternate solutions to better fund sustaining engineering, 3) performs root cause analysis of sustaining engineering (AFCANS IV 3.7a) funding shortfalls.		937-257-4963	AFMC/A10SP	deborah.hileman@us.af.mil		Deborah	Hileman	
61	Medical Research Horizon Scouting	Identify long-range S&T opportunities such Synthetic Biology, Biomarkers, Suspended Animation, Precision Medicine and others. Scope industry for current capabilities and analyze for future trends within respective areas		703 681-8091	AFMSA/SG5	kevin.r.kupferer2.mil@mail.mil	AFMSA/SG5I	Kevin	Kupferer	Maj
62	AFMS contributions to AF Global Partnership Strategy	Review how AFMS Global Health engagements link and support the USAF Global Partnership Strategy (SAF/IA).		703-681-6986	AFMSA/SG3X	juan.i.ubiera.mil@mail.mil	AFMSA/SG3XI	Juan	Ubiera	Lt. Col
63	The Implementation of RPA Aerial Refueling and the Impacts to the Warfighter	RPA refueling and the impacts to the warfighter of increased on station times/increased transit distances.		757-225-3366	HQ ACC/A3	joe.joyce.1.ctr@us.af.mil	HQ Air Combat Command	Joe	Joyce	Mr.
65	Personnel Recovery (PR) in an Anti-Access/Area Denial (A2/AD) Environment	Determine multi-dimensional future Personnel Recovery force capability requirements to successfully operate in an A2/AD environment. Requirements should not focus on platforms but emphasize future cross functional offensive, defensive, and cyber capabilities and address requisite recruitment and training requirements for the future Combat Rescue Force.		757 764-0904	HQ ACC/SG	acca10oOperations@us.af.mil	HQ Air Combat Command	Raymond	Moschler	Lt. Col
66	Enterprise AFNET NIPRNET Reliability and Risk	Many mission critical systems reside on NIPRNET. Does the AF properly understand the overall risk to operations? What is the impact on operations of reliance on NIPRNET? Do increased NIPRNET reliability problems degrade AF ability to perform not only staff duties, but also mission planning and C2 actions? Loss of e-mail and network slowness affect commandersâ€™ and staffsâ€™ ability to collaborate with off-station teams. Outages and performance issues recur. The possibility of â€œshadow ITâ€ is on the rise.	312-260-7735	571-256-7735	LeMay Center/LL	paul.d.mcvinney.civ@mail.mil	Air Force Doctrine Center	Paul	McVinney	CIV
67	LeMay Center -- operational issue	3) Implications of Unmanned Aerial Systems (UAS) and Counter-UAS operations throughout the Range of Military Operations (ROMO).								
70	Non-traditional medicine (Return of Investment ROI) for AFMS	What is the return of investment on the use of non-traditional medical practices for treatment and or prevention (i.e. holistic, alternative/complimentary, acupuncture etc.)? How can this translate to improved care and readiness for the AFMS and MHS? Refer to industry achievements, international partnership nations' use.		703681-8091	AFMSA/SG5	kevin.r.kupferer2.mil@mail.mil	AFMSA/SG5I	Kevin	Kupferer	Maj
71	Major acquisition impacts since USAF decision to move PEMs out of the MAJCOMs and into AFLCMC	Paper should focus on the impact of the 1999/2000 decision to move the PEMs from the operational MAJCOMs to AFLCMC. Special consideration should be given to major acquisition performance since this change, limiting of operational communities options to address critical issues (e.g. limiting to termination of the program), and the delta between acquisition need for cost/schedule versus user's primary need for capability/performance.		757-225-3366	HQ ACC/A5	john.swartz.4@us.af.mil	HQ Air Combat Command	JoJohn	Swartz	Mr.

73	Capability vs Threat-based Acquisition	DoD has been increasing the emphasis on providing threat information to acquisition programs, including via AT&L's Better Buying Power 3.0 initiative. This threat-based approach potentially conflicts with the capability-based approach of the past decade. An "either or" approach is not viable; however, it's not clear how to best balance both capability-based and threat-based acquisition (as well as the attendant requirements). The Study Organization should assess the merits of both approaches, and recommend processes for the Requirements, Acquisition, and Intelligence Communities to implement to achieve an optimal balance in consideration of the Better Buying Power 3.0 initiative.		781 225-5955	AFLCMC/INH	joseph.pridotkas.1@us.af.mil	Air Force Research Lab	Joseph	Pridotkas	GS-15
74	Assessing Information Assurance and Mission Effectiveness	What does information sharing contribute to mission effectiveness and how can it be assessed? The advent of the Joint Information Environment (JIE), Mission Partner Environment (MPE), and other DoD and USAF initiatives (Unified Capabilities, Cloud, Cyber, Mobile Devices, ISR Information Architecture, etc.) all emphasize the need for information sharing (IS). This carries with it a need for a common data framework, federated information architectures, integration of system of system (SoS) construct functions to provide needed information sharing capabilities, and interoperability (structural, syntactic and semantic) of information across Air Force Service Core Functions (SCF); among domains, organizations and users (Joint, coalition, allied); throughout ROMO. Information sharing is more than simply a process of connecting networks and nodes or information exchange requirement (IER) identification related to mission. The IS chain (gather, post, process, archive, dispose) and the IS capabilities delivered along that chain, needs to be linked to the mission chain (plan, execute, monitor, assess) in order to categorize, quantify, qualify, and evaluate the contribution of IS capabilities to mission accomplishment within an operational context and along a mission thread.		757 764-6272	ACC/A6	hugh.way@us.af.mil	HQ Air Combat Command	Hugh	Way	Mr.
75	PNT Leadership Strategy	The U.S. Space-Based Positioning, Navigation, and Timing Policy calls for the U.S. to remain the global leader in providing satellite navigation systems and services for worldwide use. However, global leadership can no longer be interpreted as being a monopoly provider, since many foreign systems are being actively pursed for civil, commercial, and military use. â€¢ What does this mean for PNT-related engagement with other nations fielding space navigation systems? â€¢ To maintain leadership, should the U.S. commit to a GPS acquisition and launch schedule based on firm operational dates for modernized capabilities, or is a schedule based on satellite end-of-life estimates still appropriate? How much, if anything, could be gained? â€¢ What are the implications (pro and con) of adding foreign PNT capabilities to U.S. military user equipment? â€¢ What complementary PNT sources would provide low-cost, robust military service in electromagnetically and physically impeded environments? For which military applications might they be cost-effective? â€¢ What are the PNT leadership implications of the U.S. deciding to deploy, or not deploy, an eLORAN system as a complementary PNT system to GPS? What is the most cost-effective force structure to deploy for U.S. critical infrastructure applications? What force structure would be required to support national security applications given U.S. global commitments?	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
76	Role of Operationally Responsive Space (ORS) in International Engagement	The Department of Defense (DoD) signed a multi-lateral Responsive Space Research, Development, Test & Evaluation (RDT&E) Memorandum of Understanding (MOU) that provides a legal framework and authority for conducting information exchange and exploring potential projects with international partners. The MOU holds promise for promoting allied interoperability and for leveraging country-specific expertise, thus encouraging mutually beneficial technological advancements. Perhaps more importantly, it provides a mechanism for U.S. involvement and leadership in the development of common technical standards, without which some current U.S. technology advantages may erode. How can the U.S. best leverage the ORS RDT&E International MOU to increase U.S. advantage? Potential lines of inquiry include: â€¢ What are potential benefits of modular satellite designs and electronic â€œplug and playâ€ standards (such as reduced satellite construction costs and more timely assembly, integration and test)? â€¢ How could commonality serve to make U.S. and partner nation responsive space products attractive to a world market? â€¢ How might cost-sharing arrangements enable projects? â€¢ How is this agreement unique (or not unique), and how might this agreement serve as a template for expanded cooperation with countries not included in the agreement? â€¢ How will additional layers of complexity inherent in shared projects impact execution? â€¢ How can we mitigate the risks of fragile and interdependent cost-sharing arrangements? â€¢ What are the residual risks/challenges to technical data sharing, even with an MOU in place? What approaches would help to mitigate/overcome those risks/challenges?	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
77	Enhancing Global Installation and Mission Support (I&MS) Processes	Study builds upon a RAND Project Air Force 2015 Study "Enhancing Global Agile Combat Support Processes". Objective would be to improve I&MS support to the warfighter by examining the implications of the new operating and support concepts for anti-access area-denial (A2AD) environment. It builds upon the prior year study that examined the organizational changes by adding a 6th Center (AFIMSC) under AFMC, and examines the roles, responsibilities and the subsequent gaps and seams identified in its organization structure and execution methodology to deliver efficient and effective support to the warfighter.	969-1779	(210) 395-1779	AFIMSC/XZP	marc.vandeveer@us.af.mil		Marc	Vandeveer	Col
83	Long Duration Logistics Wargame (LDLW)	Current Chief of Staff Title 10 wargames lack the ability to predict, beyond 30 days, the sustained logistics support for successful COCOM power projection leaving a critical gap of linking strategy and investments. It is imperative to develop and implement a process to improve active and realistic logistics participation in wargames, simulations, and exercises while minimizing concern areas throughout the Air Force Logistics Enterprise. LDLW is a HAF sponsored program to help fill those needs. LDLW will help: evolve logistics core competencies to fully support Joint Operations, posture logistics resources for the current and future fight, and deliver cost effective readiness through product support and operational logistics.		937-904-0064	HQ AFMC A4F	omar.mendoza@us.af.mil	Air Force Materiel Command	Omar	Mendoza	Mr.
84	Capturing service retained forces supporting Combatant Commanders in doctrine	Services retained forces currently execute AF operations satisfying Combatant Commander requirements (RPA, Intel DCGS, Opn Wx Sqdn, etc.). These mission sets are conducted outside the OPCON definitions of JP-1. A solution to this authorities conflict is required to codify the support relationships.		757-225-8453	ACC/A3W	william.courtemanche@us.af.mil	HQ Air Combat Command	William	Courtemanche	Lt. Col
85	In the context of a contested space domain, what will Control of Space actually look like?	US Armed Forces are well-versed in gaining and maintain Sea Control, Land Control and Control of the Air, with detailed understanding of what is required in terms of specified and implied tasks, what the consequences and risks are, and what capabilities must be brought to bear to achieve these objectives. Arguably, however, we have never had to fight and win Control of Space. The essence of the topic requires an analysis of the similarities and differences between Control of Space and Control of the traditional warfighting domains. It should also examine what space capabilities should be employed and how space forces should be postured to most effectively fight and win Control of Space given the unique nature of the domain.		719-554-2413	AFSPC/A8XP	SEAN.LANGRISH.GB@US.AF.MIL	Air Force Space Command	Sean	Langrish	SQN LDR/O-4
86	LeMay Center -- operational issue	1) Advantages of integrating Simulation and Modeling with Wargaming to develop a more holistic view of future warfare.		334 953 3724	LeMay Center/WEF	Michael.todd.21@us.af.mil	Air University	Michael	Todd	LTC (USA)
91	Merits of Computer Based Training (CBT) vs. Squadron Training Office Training	Review merits of CBT vs. Squadron Training Office conducting training. While CBTs provide individual scheduling flexibility, we may have moved too far away from critical training (i.e., Suicide Prevention) being taught through CBTs vs. an individual under the supervision of the Squadron Training Office. In person training offers several advantages: 1. Complex issues (like Suicide Prevention) can be more fully explored in group settings 2. Enhances group cohesiveness, morale and teamwork Also, Senior Leadership should be aware how much time is allocated to CBTs vs. mission accomplishment. We are not suggesting there is no place for CBTs in training, but we believe there is value in a review of how training is accomplished.		757-225-9232	HQACC/A3	Evan.Scaggs@us.af.mil	HQ Air Combat Command	Evan	Scaggs	Mraj
92	Production Cut-Ins: near and Long Term Impacts	How do new cut-ins to production aircraft impact the learning in the near term and/or long term? The MQ-9 is a prime example where actuals on production existed but the configuration was in constant flux. The hours associated with the new cut-ins were added but the learning curve slope remained unchanged and the additional hours ran down the same curve based on the previous configuration. These new hours were applied to the learning curve and calculated off the current unit instead of starting that subset of hours off at unit 1, thus understanding and flattening the learning. The analysis should be broken out by areas of the aircraft affected (i.e. avionics bay vs landing gear).		937-656-4357	AFLCMC/FZCE	anthony.munafo@us.af.mil	Air Force Research Lab	Carole	Farley	Col
93	Leveraging Commercial Space Assets for DoD Space Needs	In 1960, only the US and the Soviets flew spacecraft. Today, due to an explosion in the commercial marketplace, DoD is a minority player in space with 95% of all GEO spacecraft owned and operated by commercial entities. The commercial marketplace has also expanded from communications, to ISR and SSA with major new entrants such as Google, PayPal (SpaceX), PlanetLabs, Skybox and other poised to launch 1000's of new spacecraft. To maintain our military advantage, it is imperative for the USAF to tap into these data sources for through commercial leveraging. We have been using this approach effectively for wide-band communications in the last 10 years, but now must expand into space and ground SSA, ISR, and C2. This poses major new technical challenges such as trusting the commercial data, fusing it with legacy AF /NRO data, injecting the data and capability into historically closed AF systems, and developing acquisition approaches to quickly adapt to a rapidly changing commercial market to best take advantage of this opportunity.		505-853-1889	AFRL/RV	alexander.howard@us.af.mil	Air Force Materiel Command	Alex	Howard	DR-03

94	The unique challenges faced by "functional" COMAFFOR staffs versus "geographic" COMAFFOR staffs.	Compare/contrast the challenges of functional or global mission areas to geographically "bound" mission areas; explore the difference and similarities between a "functional COMAFFOR's" engagement strategy/Campaign Support Plan and a geographic COMAFFOR's Country Plan/Campaign Support Plan.		719 554 - 7951	HQ AFSPC/A2/3/6OP	nia.bluford@us.af.mil	Air Force Space Command	Nia	Bluford	Maj
95	SOF challenges and opportunities in future operating environments: How and where SOF can be game changers	Since the end of the cold war, the U.S. has inexorably moved to a less stable and less predictable global environment. Predicting future instability, conflicts, and direct and indirect threats to U.S. interests is profoundly important to USSOCOM. What are the projected global hot spots in five, 10, 15 years? What future state, non-state, social, and technological â€œgame changersâ€ could impact global U.S. interests? What do SOF need to understand about the myriad projections and predictions regarding the future operating environment so USSOCOM is prepared for the future? Where should USSOCOM focus future â€œPhase 0â€ activities to enhance stability and prevent conflict? Should there be increased emphasis on campaign planning and the application of operational design to help develop strategies for activities short of war?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
96	Hosting Coalition Air Forces	A study for the benefit of improving the infrastructure, maintenance facilities, fuel storage, logistics aspects of operations to help serve joint and coalition operations with the ultimate goal of planning, budgeting and cost sharing between allied countries and host nation. This topic is submitted by Royal Jordanian Air Force (RJAF) Commander Maj Gen Mansour al Jabour, who lost Capt Moadh al Kasasbeh in their own fight against ISIL and are hosting multiple coalition partners on their bases for Operation Inherent Resolve. The contact information listed is for US Air Attache to Jordan Lt Col Matt Yocum, who submitted at the request of the RJAF Commander.		2022317234	RJAF	yocummw@state.gov	Defense Intelligence Agency	Mansour	al Jabour	MG, Jordan AF Cdr
97	Facilities Sustainment Restoration & Modernization (FSRM) Mission Risk	Study builds upon a RAND Project Air Force Oct 2015 Draft Report "An Approach for Linking Infrastructure Resources to Readiness" and provides a practical analysis to assign mission-to-infrastructure criteria to provide an assessment of Facilities, Sustainment, Restoration & Modernization Funding from a Mission Risk perspective. It would evaluate the criteria, definitions and IT systems (such as CARM & Forcepro) to recommend a deliberate process to collect the information, bin it and utilize it in the corporate process to assess mission risk to infrastructure in an underfunded environment. It should also analyze existing prioritization processes such as the Critical Infrastructure Program, Prioritized Asset List, Tiered Facility Maintenance and Installation Facility Priority Lists to determine their utility in making an informed risked-based decision process to prioritize infrastructure on our bases. The output should analyze the feasibility and utility of cataloging potentially hundreds of thousands of facilities in the AF inventory and potentially their subsystems versus a more practical approach of only thousands or hundreds.	969-1779	(210) 395-1779	AFIMSC/XZP	marc.vandeveer@us.af.mil		Marc	Vandeveer	Col
102	Is it time for a paradignm shift in managing people?	The future Air Force faces two major management challenges. The first challenge is fueled by generational change and shifts in the US economy and its workforce: how can the Air Force bolster the retention of its most talented and innovative people? The second challenge is to reward innovation and foster organizational agility: how can the Air Force purposefully integrate modern organizational design, leadership theory, and smart risk-taking to these ends? What legal and policy authorities does the Air Force possess to address these challenges? What changes in law and policy does the service require to address these challenges?		703-697-0775	ASSG	kelly.d.burt.mil@mail.mil	CSAF's Strategic Studies Group	Kelly	Burt	Lt Col
103	Examine the implications and effects of adopting programs to optimize SOF human performance: Are there limits to enhanced physical and mental capabilities?	An extensive study directed by a former USSOCOM commander, Admiral Eric Olson, revealed that the current operational environment has been more difficult than operators and their families expected, leaving little time for them to adjust to the daily strains of perpetual absences. The study noted troubling consequences, with increases in domestic and family problems, substance abuse and self-medication, risk-taking behaviors, post-traumatic stress, and even suicides. The study found that SOF were frayed. Currently, there is legislative reluctance to fund USSOCOM human performance programs and infrastructure as opposed to Military Service funded programs. USSOCOM human performance efforts are currently integrated under the POTFF initiative. What are the values of SOF specific human performance programs? Should it be a stand-alone program more aligned with operational needs? Should or will the human performance initiative be considered an operational USSOCOM requirement? Why should USSOCOM spend money on such additional programs? What are the limits for the program to research enhanced or augmented physical and mental capabilities? What are the moral and ethical issues beyond optimizing mental and physical capabilities, sleep, nutrition, and resilience; as opposed to augmenting or enhancing physical and cognitive abilities through advances in biomechanics, pharmaceuticals, and genetic therapies?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
114	Establishment of a Space Traffic Management capability	As space is increasingly becoming congested, an inter-agency proposal recommends the establishment of a Space Traffic Management capability, possibly building on the model of the International Civil Aviation Organization (ICAO) as it pertains to aviation. Areas for consideration include: â€ Are there inherently non-military activities currently performed by U.S. Strategic Command (USSTRATCOM) that can be better accomplished by a civil or commercial entity? â€ What is the best construct between civil organizations and DoD? Consider the following: o The Federal Aviation Administration Office of Commercial Space Transportation (FAA/AST) is the U.S. licensing authority for non-federal launch and re-entry. o USSTRATCOMâ€™s Joint Functional Component Command for Space is the only U.S. entity with the analytical staff and space surveillance capacity to effectively monitor space traffic. â€ What are the benefits and risks of transferring responsibilities for conjunction assessments and advisory notices to a civilian agency?	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
116	AFMS contributions to Aviation Enterprise Development	Review how AFMS Global Health engagements link and support the Aviation Enterprise Development.		703-681-6986		juan.i.ubiera.mil@mail.mil	AFMSA/SG3XI	Juan	Ubiera	Lt. Col
117	Do We Need a New Sustainment Paradigm for UAVs?	The current paradigm of Air Force sustainment generally adheres to the following theses: aircraft are expensive, aircraft are not expendable, and aircraft are highly complex. From these paradigmatic theses, the current Air Force sustainment model was developed. Mainly, aircraft frequently undergo costly preventative maintenance, aircraft maintainers are highly trained specialists, and large quantities of spare parts are kept on hand to mitigate performance risks. While these practices serve the AF well for conventional aircraft, they are likely suboptimal with sustaining the growing fleet of Unmanned Aerial Vehicles (UAVs) because UAVs are not expensive, are expendable, and are not highly complex. A UAVâ€™s characteristics represent a significant and fundamentally different way to view aircraft. It is therefore worthwhile to examine the effectiveness of current sustainment activities for this new aircraft paradigm and explore future sustainment strategies as they relate to the growing UAV fleets.		937-904-5952	AFLCMC/OZA	kelvin.utendorf@us.af.mil	Air Force Research Lab	Kel	Utendorf	Dr. (GS-14)
118	Opertional and Strategic Impact of Counterfeit Parts in the Air Force supply chain	The Air Force supply chain has been and continues to be a target for counterfeit parts (either for criminal purposes or for malicious code intent). While a variety of AF and DOD offices are working to mitigate this issue, what are the operational and strategic impacts of CP to the Air Force?		405 734-8735	448 SCMW AFMC	david.chaston@us.af.mil	Air Force Materiel Command	David	Chaston	GS-15
119	Maintaining Trust with the American People	Has trust and confidence eroded between the American people and the Profession of Arms (POA)? If so, what is an appropriate strategy to reestablish and maintain trust between the POA and the people of America? Related research questions include: what are the elements of trust; what are the expectations held by the American people for their military services; the fragility trust. The impact of senior leader misconduct on trust.	493-7938	334-953-7938	DEW	gene.kamena@us.af.mil	Air War College	Gene	Kamena	Ad-25
120	Maximizing Diversity in USAF STEM Fields	Diversity is a major focus in the Air Force today. However, STEM career fields make up a large portion of the force, including rated as well as non-rated technical specialties. Women and some minorities have historically been underrepresented in university programs that lead to accessions in STEM fields, and this presents challenges to USAF diversity goals. Research could lead to possible solutions to recruiting challenges as well as leadership and institutional methods to ensure the underrepresented demographics make the maximum possible contributions and overcome barriers to professional success.	312-260-8088	571-256-8088	HQ USAF/A3WT	william.n.pryor.mil@mail.mil	AF/A3/5	William	Pryor	Lt Col
121	The application of Total Force to sustain Conus (contingency) operations	Examination of pros and cons of partial or wholesale transfer of missions to ARC units. What is the optimal mix of Regular Air Force and ARC personnel to ensure Regular Air Force personnel flow through ARC sustained missions/systems in order to enable experience-based HQ's management? How do standing legal authorities (Title 32 and Title 10), enable or impede rapid accessibility of ARC forces during quickly emerging crisis within the Conus (e.g. space or cyberspace contingencies)?		801-777-5781	HQ AFSPC A2/3/6OR	nia.bluford@us.af.mil	Air Force Space Command	Nia	Bluford	Maj
122	What constitutes a Wounded Warrior? An examination of the Services' use of the PTSD diagnosis and its affect on military medical retirements	Over the years, we've seen the definition of a Wounded Warrior expanded to include personnel who have never served in combat. We've also seen a large increase in the number of personnel diagnosed with PTSD. What is driving the use of these categorizations and what are the implications on military medical retirements?		801 586-9516	75 MDG	jeffrey.cook.3@us.af.mil	Missing Organization	Jeff	Cook	Lt. Col

125	Research metrics for assessing the O&S cost drivers	The Air Force Acquisition community has studied the drivers of Operations and Sustainment (O&S) Cost to the Acquisition programs, but has not been able to establish useful metrics that balance the aircraft availability imperative with any cost conscious execution that is completely within the realm of control of the program office or product support provider. There is oversight to the determination of requirements and forecasting algorithms used internally to the program office and externally from Performance Based arrangements under contract. Regardless of the methods used to determine and authorize purchases, additional oversight is needed that neither ties the hands of the Warfighter nor the Product Support Provider (PSP) in fulfilling the missions. Previous Rand studies determined that more should be done to implement service wide philosophies on managing O&S costs and all that goes into the cost, however none have provided solutions. The question of what constitutes sufficient and appropriate sustainment metrics for O&S cost has yet to be answered. Recommend one individual or team of students be assigned to develop flexible, leading metrics for assessing the O&S cost drivers over which the Air Force exerts some type of authority. Provide a timeline for implementation, planning considerations, potential cost/benefit assessment to implement across the Air Force Enterprise for our broad area of responsibility. Each assessment needs to consider a variety of scenarios. They should work with the Air Force Materiel Command to understand the pros of cons of implementing various metrics for existing and planned fleets.		7036936524	AQD	diana.s.bednara.civ@mail.mil	SAF/AQ	Diana	Bednara	GS-14
126	Leveraging A Common Commercial Derivative Military Aircraft Platform For Multi-Mission Needs	Throughout Air Force history, baseline aircraft platforms have been leveraged for special mission purposes (e.g., C/KC-135 basic airframe used for Open SKIES (OC-) and reconnaissance (RC-). There are two paths that could be considered for this study: (1) focus on the military utility of leveraging the KC-46 baseline configuration for other Air Force needs; direct replacement for OC/RC use, E-4 replacement, VIPSAM fleet, etc.; or (2) how to establish a generic starting point of a CDA acquisition process to allow all Services to leverage a common baseline aircraft configuration (economies of scale for initial acquisition and sustainment of a common configuration) and then missionize as required for specific roles. The study would assess reduced development and production cycle times along with cost benefits of leveraging an existing, certified configuration. This study could also be expanded or focused on potential JSTARS Recap platforms as well. (Value: Supports corporate Air Force Should Cost and Should Schedule initiatives.)		312-785-8962	AFLCMC/WKE	john.slye@us.af.mil		John	Slye	
127	IT Program Sustainment	AF and DoD agencies that sponsor IT systems need to ensure they fund for software upgrades and sustainment cost. Operating systems that are no longer supported by the vendor for security updates (patches) leaves them vulnerable to attack. AF and DOD are increasingly dependent on IT not only in support of business processes but weapons systems and intelligence gathering as well. IA and information-enabled products provide security to the IT infrastructure, helping to maintain confidentiality, integrity, and availability of the DoD information.	312-260-7735	571-256-7735	LeMay Center/LL	paul.d.mcvinney.civ@mail.mil	Air Force Doctrine Center	Paul	McVinney	CIV
128	Readiness-Informed Wargame	AF lacks a convincing means to articulate readiness shortfalls to civilian leadership. Currently, the best we can do is stack ready forces against a demand signal on a chart or graph. This has proven interesting but not compelling to Congress. Short of going to war and seeing how our forces perform, there are few options for showing just how unready we really are. We offer to work with A9â€™s analysts to model performance against a major OPLAN (TBD), given our current state of force readiness.	312-260-7735	571-256-7735	LeMay Center/LL	paul.d.mcvinney.civ@mail.mil	Air Force Doctrine Center	Paul	McVinney	CIV
129	War and Mobilization Plan Vol. 5 Planning Factors	The factors listed in WMP-5 Appendix K have historically been used to set the target for programming levels of manpower and materiel support for major weapon systems. However, the methodology for developing these factors has changed over the years and this raises questions about their continued use for the purpose of planning and programming support.	312-260-7735	571-256-7735	LeMay Cener/LL	paul.d.mcvinney.civ@mail.mil	Air Force Doctrine Center	Paul	McVinney	CIV
131	Flying schoolhouses	Should the AF continue down the path of heavily contracted out flying schoolhouses (C-17 for example) especially for RPAs (soon to be largest MWS in AF).	260-4292	571-256-4292		travis.a.burdine.mil@mail.mil	AF/A3/5	Travis	Burdine	Lt Col
133	Development Cost and Schedule Growth vs Program Milestone Dates: Where in a Programâ€™s Schedule Does It Typically Occur?	Where in a program's schedule does this typically occur? Although much has been written about the causes of acquisition cost growth, research does not exist in relation to how it behaves through time. Specifically, does it typically start to occur (or be declared by the program office) at some planned milestone date like the Critical Design Review (CDR) or First Flight (FF)? Does it typically follow a stair step pattern or is it more curvilinear? Data for this effort could be obtained from program Selected Acquisition Reports (SARs) and Rand studies. Assuming that some predictable pattern for cost and schedule growth is found, it could be used to determine the Fiscal Year (FY) spread for program risk dollars. This should help to alleviate potential FY funding shortfalls.		937-656-5478	AFLCMC/FZCR	michael.seibel@us.af.mil	Air Force Research Lab	Michael	Seibel	GS-13
134	Modeling and Simulation of Networks for Military Applications	Scarcity of computer network models which can create high enough fidelity in simulations of real-world network architectures for use as immersive cyber mission planning and rehearsal environments. Problem Statement: Scarcity of computer network models which can create high enough fidelity in simulations of real-world network architectures for use as immersive cyber mission planning and rehearsal environments. Task: Assist AFSPC in developing requirements for an Air Force cyber range using a modular development framework which may utilize or adapt existing software tools.	314 692-2914	719-554-2914	HQ AFSPC/A2/3/6WO	michael.moseley@us.af.mil	Air Force Space Command	Michael	Moseley	Maj
135	Optimization of biomarker test as a weight loss tool for military members	DoD is developing a biomarker test that enables military members to determine if they are loosing weight before weight change is detectable via scale; provides immediate feedback of effectiveness: reinforces good behavior or impetus to make changes in diet and exercise routine; Researcher may apply decision theory based analysis to optimize application of biomarker test. SBIR: https://sbirsource.com/sbir/topics/89224-rapid-indicator-of-potential-for-weight-gain-loss-amp-trending		843 452-5117	AFMSA/SG5	scott.walter2@montana.edu	AFMSA/SG5I	Scott	Walter	Mr
136	Fighting ISIL	An exploration of the US strategy for fighting and defeating ISIL including such things as: 1) under what authorities the US would use to send troops to fight ISIL, 2) is air power enough to defeat ISIL, 3) what is the best course of action to defeat ISIL, 4) how should the international community fight ISIL with social media, and 5) what should be the roles of Turkey and Iran be in fighting ISIL. This topic is proposed by the Royal Jordanian Air Force (RJAF) Commander Maj Gen Mansour al Jabour, who lost Capt Moadh al Kasasbeh in their own fight against ISIL. He is eager to engage the Air University on studying this common enemy. Contact information listed is for US Air Attache to Jordan Lt Col Matt Yocum.		2022317234	RJAF	yocummw@state.gov	Defense Intelligence Agency	Mansour	al Jabour	MG, Jordan AF Cdr
137	Should the military consider Human Domain as a new operating domain?	Currently, the DoD recognizes five domains: air, land, sea, space, and cyber. Domains justify the existence of the services and the development and acquisition of resources. For example, the requirement to operate in the air domain justifies the existence of the Air Force along with the acquisition of platforms and capabilities such as aircraft and satellites. Currently, military strategy focuses on the need to prepare for a high end threat against peer and near-peer threats such as China, Russia, Iran, and North Korea. Additionally, todayâ€™s military forces must also be prepared to address threats posed by terrorist and terrorist organizations. The five recognized domains sufficiently focus on the high end threats; however, they do not adequately address threats posed by terrorist organizations. The joint staff is currently working on a concept known as Human Aspects of Military Operations (HAMO) which addresses concerns for military forces operating in lower threat environments which are primarily population focused. While the recognized domains adequately address the high end focus, the verdict is still out on whether the HAMO Concept adequately prepares U.S. forces for human centric operations such as countering terrorists and terrorist organizations. The focus of this study is to determine whether the joint staff should consider the need to consider the Human Domain as an accepted joint force operating domain.	312-579-7181	850-884-7181	A8X	billy.montgomery.3@us.af.mil	AF Special Operations Command	Billy	Montgomery	Chief of Strategic Plans
138	What are the implications of future RPA missions in the ANG?	Explore options for RPA operation career development to include recruiting, training, retention, absorption, and career development. What are the obstacles and options for domestic use of RPAs? How should ANG support its â€œin-garrisonâ€ operations including medical, family support, dual-status command, etc.?	703-222-1977	703-692-1977		sean.f.conroy.civ@mail.mil	Air National Guard	Sean	Conroy	Mr.
139	How can the State Partnership Program relationships be best leveraged in support of Air Force Strategic Master Plan objectives to attain strategic goals?	The State Partnership Program has a worldwide footprint with some relationships dating back to 1991. The dual role of the National Guard as a traditional national defense force and a state controlled defense force has the capability to bring together key military and civilian players. This study will provide a look at how to best leverage SPP relationships, capabilities and capacity to attain strategic goals.		571-256-7479	SAF/IAPS	lea.l.devine.mil@mail.mil	Secretary of the Air Force (SAF)	Lea	Devine	Lt Col
140	SOF as a strategic instrument of war: How to employ SOF to	SOF have become one of the primary military capabilities for senior policy makers and DOD leaders to employ in the uncertain environment of today. This reflects a shift from the use of conventional forces (CF) to a heavy reliance on SOF. What are the implications for U.S. strategy for senior leader reliance on SOF? How should SOF be best employed to achieve national security objectives? What is the effectiveness of SOF: their role; their use as a strategic tool of warfare; and their ability to meet the security needs of the United States and the international community? What are the impacts of CF budget and personnel reductions upon SOF capabilities (equipment and personnel recruitment)?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13

141	Unconventional Warfare (UW): Is America politically prepared to support any expanded UW mission in the world?	UW has become an increasingly important tool of U.S. policy as resistance forces in many parts of the globe organize to confront oppressive regimes. This proposal examines the success and failures of past UW operations to include: the Office of Strategic Services in World War II, Russian UW in the Ukraine/Crimea, the initial stages of Operation Enduring Freedom with the U.S. in support of the Northern Alliance, Contras in Nicaragua, and the U.S. in Operation Iraqi Freedom in partnership with the Kurds. Other considerations: â€¢ Are SOF trained and equipped to capitalize on opportunities and enable resistance operations in times and locations of choice as approved by U.S. authorities? â€¢ In each example, describe the conditions; how was success defined? â€¢ What were the common denominators for success or failure? â€¢ What were the best practices? â€¢ Are the American people and political leaders prepared to support expanded UW given ethical questions and the long-term demands of UW?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
142	Identifying, assessing, developing, and motivating potential partners in irregular warfare (IW): Supporting effective partnerships	Recent conflicts have highlighted opportunities and policy dilemmas in the conduct and support of IW. In most of these conflicts, the United States has partnered with state or non-state actors to support or oppose an existing government. What are the best practices and other mechanisms for understanding, identifying, assessing, developing, and motivating potential partnersâ€™ behavior, objectives, organization, and composition to successfully partner with SOF? Which partnership efforts are most effective and most cost-efficient? What other interests or issues must be considered (stability, capability, etc.) when partnering with others in conducting and supporting IW?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
143	Common Baseline Definition for Supply Support Integration between AFLCMC and AFSC Supply Chain	Request analysis of a common baseline between weapon system supply support integration requirements and organic supply chain organizations' capabilities, enabling a collaborative overlay of a common (AFLCMC/AFSC/DLA) SCOR model. From this, it is envisioned a capability would be optimized for common baseline analysis of operational supply support performance, fully burdened cost of material and comprehensive supply chain risk mgmt.; derived from an integrated, weapon system focused lens overlayed to comprehensive supply chain maps. An analysis could illuminate a potential common baseline between weapon system ("AFLCMC") supply support integration requirements and organic ("AFSC" or "DLA") supply support capabilities such that fully informed product support decisions could be achieved more efficiently and effectively.	884-8450	405-734-8450	429SCMS/CL	Jeffrey.slayton@us.af.mil		Jeffrey	Slayton	
144	Quantifying Workload Assessment	The DoD Third Offset Strategy identifies five areas for future military dominance: learning machines, human-machine collaboration, assisted human operations, human-machine combat teaming, autonomous weapons. Three of these call for humans working with machines, sharing decision-making, sharing tasks, and supporting each other in the performance of the mission. Foundational to much of the associated technology development is the idea that human workload can be measured and shared such that the human and machine system can collaborate. Current ability to measure and predict workload across a vast array of tasks in any mission is challenging, but is critical to design systems to achieve the DoD goals of human-machine collaboration, assisted human operations, or human-machine combat teaming. Explore the challenges in predicting workload and design guidelines when developing a human-machine team to facilitate strategies in S&T as well as future warfighter system design.	785-8222	937-255-8222	711 HPW/CL	rajesh.naik@us.af.mil		Rajesh	Naik	Dr.
145	Tanker Recapitalization Phase II Pre-Analysis of Alternatives	Air Mobility Command is in the early stage of scoping Phase II of the Tanker Recapitalization effort (commonly referred to as "KC-Y"). The desired end-state is for KC-Y production to commence by CY2028, coinciding with final delivery of the 179-aircraft KC-46 program. This study would focus on alternatives, and associated schedules, to meet a CY2028 timeframe, while complying with DoD 5000.02 requirements and milestones for an ACAT I program. (Value: Direct benefit to HQ AMC in their development planning effort.)		312-785-8962	AFLCMC/WKE	john.slye@us.af.mil		John	Slye	
146	Cognitive sciences for closed loop training of Cyber/RPA operators	Investigate uses of Cognitive Load Theory and other cognitive science theories to provide insight into closed loop training of cyber analysts and/or remotely piloted aircraft operators. Explore real-time application of physiological and cognitive measures in operational environments leading to creation of improved work environments. The goal of the closed loop system is to identify/quantify workload assessments and augment various factors accordingly.	785-8222	937-255-8222	711 HPW/CL	rajesh.naik@us.af.mil		Rajesh	Naik	Dr.
147	What are the operational implications of conducting battle damage assessment (BDA) through sampling and extrapolation versus 100% post-strike confirmation?	Given the current accuracy and reliability of precision munitions can battle damage assessment (BDA) be effectively and reliably be conducted through sampling and extrapolation versus 100% post-strike confirmation? Can this approach along with a tighter integration with operational campaign effects assessments provide a risk averse decision maker acceptable BDA? How would this approach impact the operational commanderâ€™s risk calculus and what criteria are necessary to gain a commanderâ€™s trust in such an approach? This effort would support the AFRL/RI Full Spectrum Targeting Program, Automated Battle Damage Assessment Project by providing operational insights and an initial feasibility assessment on alternative approaches to conducting BDA and would further guide the development of technologies supporting BDA. The current BDA paradigm is highly risk averse in that targets are presumed live until proven dead. Target status typically verified though combat assessment of the effectiveness of individual strikes, most often based on analysis of EO imagery. Due the risk adversity of decision makers and the quality of BDA provided by EO imagery, decision makers often refuse to accept BDA not based on this source. Under this current paradigm the demand for a high degree of confirmation of individual strikes would quickly exceed the capacity of the ISR enterprise during a large major combat operation. Given the current accuracy and reliability of precision munitions this high degree of post-strike verification may in fact be an unnecessary use of valuable ISR resources. In addition, air campaign operational effects assessments are often similarly based on combat assessments of individual targets. Operational effects are usually inferred through counts of targets killed versus observation of the desired effects themselves. An alternative could be to extrapolate BDA results from the assessment of a sample of representative targets within a large scale attack or target complex. This could be complemented by a refocusing of the operations assessment effort from the individual targets to the overall effects which may lend themselves to verification by a broad spectrum of collection methods other than EO imagery. A tightly coordinated and synergistic effort between the BDA cell and the operations assessment team could provide the commander a holistic and decision quality assessment of the air campaign. This approach could be enabled by new data analytic and information fusion technologies. Such a refocusing from individual targets to effects could require a fundamental change in the commanderâ€™s understanding and calculus of operational risk. This has to be understood as well as the criteria necessary to gain a decision makerâ€™s trust in such a process. This proposed research would consist of a deep dive into and extensions of approaches considered in the 2002 School of Advanced Air Powers Studies thesis titled â€œAssessing Airpowerâ€™s Effects: Capabilities And Limitations Of Real-Time Battle Damage Assessmentâ€ authored by Lieutenant Colonel John T. Rauch, Jr. In light of new technological developments in precision munitions, data analytics, and data fusion a relook at these BDA alternatives might yield fruitful insights.		315-330-4263	AFRL/RIED	joseph.raquepas@us.af.mil	Air Force Research Laboratory	Joseph	Raquepas	Dr
148	Global Security and National Security implications of the acceleration of life science and biomedical technologies and	Analyze the acceleration of life science and biomedical technologies and capabilities and the associated risks. Examine 'dual -use dilemmas' of current and future capabilities within AFMS/MHS research programs including exploitation of 'big data'. Apply a risk and benefit assessment framework for each individual scenario along with the mitigation strategies.		703681-8187	AFMSA/SG5	brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
152	Effectiveness of AF CBT training	Medical personnel are expected to complete 60-80 hours of computer based training prior to deployment, this does not include annual medical group training (SWANK, ADLS, Med Learn, JKO, and Mosbys) Commanders are focused on ensuring everyone has assigned training completed, but the effectiveness of training does not seem to be a priority.		850-883-8164	96 IPTS/SGIC	carole.farley@us.af.mil	Air Force Materiel Command	Carole	Farley	Col
153	Cost Metric for Fleet Comparison	No current cost metric (e.g., operational or ownership cost per flying hour, sortie, TAI, available aircraft, etc.) stands alone in allowing fleets to be compared, even within a weapon system type. A new metric or combination of metrics could be developed that would allow such comparisons, such as CAPE element-specific normalizations as appropriate.		937-904-5710	AFLCMC/OZA	samuel.wright.6@us.af.mil	Air Force Research Lab	Sam	Wright	GS-14
154	Decentralized Civilian Staffing	Request study on the benefits of decentralized civilian staffing and classification services across the Air Force. This initiative has Center- and Command-level interest and the potential results would have an AF-wide impact, and allow the AF to create a world-class human resources system that aligns with the Air Force Sustainment Center goals and objectives. The probability of success is high due to implementation being within Air Force control.		405-739-2565	AFSC/DPPP	david.traynor@us.af.mil	Air Force Space Command	David	Traynor	Mr.
155	Current AF fitness standards	Research current AF fitness standards/(theater physical training) to determine suitability for performance in a denied environment.		808-388-8791		james.sandvig.1.ctr@us.af.mil	PACAF Command Surgeon	James	Sandvig	Dr
156	The Effect of Federal Acquisition Regulation on Medical Innovation, does it go too far?	The FAR provides systematic risk mitigation practices in major systems development, but does this hamper the ability to develop emerging medical technologies? Is an alternative or abbreviated version of JCIDs appropriate for medical research and development? The objective should be to analyze industry standard research and development practices (cost, schedule and performance) relative to federal medical development practices and evaluate opportunity cost of applying line acquisition practices to medical development at levels below ACAT level 3 oversight. Is another ACAT designation appropriate for smaller funded medical efforts?		703681-8091	AFMSA/SG5	kevin.r.kupferer2.mil@mail.mil	AFMSA/SG5I	Kevin	Kupferer	Maj

157	Any topic related to HHS Global Health Strategy Objective 4 - "Increase the Safety and Integrity of Global Manufacturing and Supply Chains"	Identify AFMS role. Are there research gaps? Refer to globalhealth.gov		703 681-8187	AFMSA/SG5	brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
160	SOF and war by proxy: Strategic asymmetry and points of advantage	Proxy wars with external support for combatants in civil war situations are common in warfare, yet arguably the least understood aspect of modern conflicts. A comprehensive understanding of the types of proxy interventions since 1945, their magnitude, intent, and outcome, can provide inferences for USSOCOM strategies for proxy interventions and UW. Does USSOF have a valid knowledge base on the â€œsuccessâ€br â€œfailureâ€bf proxy wars since 1945? Safe-havens, financial flows, military assistance, military training, UW, level of economic development, size of adversary CF, and air superiority are proxy war advantages, are there others? What case studies are relevant for examining strategic asymmetries and the points of comparative advantage between the opposing forces?	312-299-3674	813-826-3674	JSOU=CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
161	What is the role of NG/ANG cyber units in domestic operations?	The Army and Air National Guard are looking to standup cyber units in every state. Explore opportunities and obstacles to ANG contribution to domestic cyber security. What is the role of the cyber unit within its state? What are the advantages of having a cyber unit in a state? What are the obstacles to domestic cyber operations?	703-222-1977	703-692-1977		sean.f.conroy.civ@mail.mil	Air National Guard	Sean	Conroy	Mr.
162	Are there alternative models for recruiting high demand skills such as RPA and cyber?	One of ANGâ€™s strengths is its ties to communities and civil industry; for example, ANG and the airlines â€œsharingâ€pilots with each building up the â€œvalue addedâ€bf the other. Are there similar opportunities in other industries such as RPA and cyber? For example, partnership with local civilian companies to give hiring priority for highly skilled cyber positions to ANG cyber experts. How might such a corporate-military partnership work? What are the implications for transferring civilian and military certifications?	703-222-1977	703-692-1977		sean.f.conroy.civ@mail.mil	Air National Guard	Sean	Conroy	Mr.
163	Combat and Combat Support Utilization of Air Force Physician Assistants in support of OEF, OIF, OND and OFS 2001-present. Critical analysis of lessons learned and impact on future operations	Describe the evolving role of the physician assistant in the wartime setting, as well as how that optimized utilization could positively impact the strategic AF medical enterprise in garrison and in future operations.		757 764-6272	AFMOA/SGHM	rene.chadwell@us.af.mil	AFMOA/SGHW	RENE	CHADWELL	COL
164	Cost Effectiveness and Patient Safety Comparative Analysis of AF Physician Assistants	Critical, trended analysis of cost effectiveness and patient safety data associated with Physician Assistant Utilization in the Air Force over the past 20 years.Provide comparative analysis of data for both topics to best inform strategic manpower and utilization decisions in the AFMS		210-395-9146	AFMOA/SGHM	rene.chadwell@us.af.mil	AFMOA/SGHW	RENE	CHADWELL	COL
165	How Service-specific Training of Space Cadre Affects Joint Environment Utility	By law each military Service is required to maintain a cadre of space professionals. The requirements for these professionals are determined by the individual Services based on their specific needs. However, U.S. Strategic Command has argued that this Service-specific training makes them ill prepared for assignments to joint billets. How should space cadre be trained in order to provide the maximum benefit to the joint force commander? Lines of inquiry include: â€¢ Should overarching Joint Space Training be required for all space cadre members as a prerequisite or adjunct to individual Service space cadre training? (Analogous to the requirement for all Marine officers to attend the Basic School to understand the fundamentals of the infantry before learning their specific occupational specialty to ensure a certain level of proficiency and understanding.) â€¢ If Joint Space Training is recommended, at what point in a career should it take place, and what organization should administer and resource this training? â€¢ Are their similar parallels in other military career fields (for example: aviation or acquisition)? â€¢ What are the drawbacks or disadvantages of a Joint Space Training requirement?	7036147725	7036147725	SAF/SPX	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	SAF/SP	John	Gondol	Col
166	Ethical Decision-Making Situations faced by Airmen	- The increased reliance on human-computer systems interactions in dynamic environments with ambiguity and uncertainty creates opportunities for ethical decision making situations to become more pronounced and have an impact on choice and outcomes that have impactful consequences such as life-death situations. There is little to no research documenting ethical dilemmas and situations between Airmen, artificial intelligence and computers at the unclassified, let alone classified, levels. - Objectives: Determine the types of ethical decision making situations faced by Airmen and identify key characteristics of these situations. Investigate the extent to which Laws of War and/or Rules of Engagement are either consciously or subconsciously applied in these settings. - The potential classification levels of the information could be as high as TS/SCI. Ultimately; the idea is to re-write the scenarios/situations so they can be tested in other research done at the unclassified level.	315 330-4125	315 330-4125	AFRL/RI	Timothy.Kroecker@us.af.mil	Air Force Research Laboratory	Timothy	Kroecker	Strategic Planning
167	F-35 Weapons Limited Capability	- Why is the F-35 so limited in its weapons capabilities? - Objectives -- To understand F-35 Weapons capabilities & limitations - Missions -- Air Dominance - Desired Insights -- Understand possibilities and limitations of F-35 weapon Types"	312-986-7274	937 656-7274		monica.poelking@us.af.mil	Air Force Research Laboratory	Monica	Poelking	Chief Strategist
168	Return on Air Force Investments	Various important AF corporate decisions are made based on anticipated future savings or promise of benefit. Often the alternative proposal from the status quo requires an Economic Assessment or Cost Benefit Analysis followed by an investment of funding. The range of decisions include, but are not limited to, Energy initiatives, Demolition, Base Realignment and Closures, centralization , etc. Select a representative sample of past decisions at all levels (AF, DRU/MAJCOM, Installation) to study the actual return on investment. Were savings actually realized? Next, develop an approach and an implementable process and tool that continously captures data from past decision to assist senior leaders at all levels to make better informed decisions. Desired endstate: Corporate process decisions are informed and made based on the feedback loop of past decisions.	969-7996	(210) 395-7996	AFIMSC/RMFA	quy.nguyen@us.af.mil		Quy	Nguyen	Lt Col
169	Should Cost Approaches For Air Force Sustainment Activities	To date, Should Cost initiatives have primarily focused on the acquisition life cycle. This study would evaluate opportunities within the sustainment life cycle for identifying and reporting on initiatives that could be implemented across many Air Force programs in sustainment. (Value: Air Force wide benefit in establishing a roadmap for communicating sustainment-centric Should Cost initiatives).		312-785-8962	AFLCMC/WKE	john.slye@us.af.mil		John	Slye	
170	Cyber security of the manufacturing facilities in the US	How safe is our industrial base against hackers. Hackers had struck an unnamed steel mill in Germany over the holidays by manipulating and disrupting control systems to such a degree that a blast furnace could not be properly shut down, resulting in "massive"—though unspecified—damage. Is the US manufacturing base protected?	674-4597	937-904-4597	AFRL/RXM	john.russell.23@us.af.mil		John	Russell	
171	Modernization Strategies for KC-46	The baseline requirements for KC-46 were established at contract award. Given the fixed-price nature of the contract, the program has been under a mandate to maintain requirements stability (i.e., "no ECPs"). However, once the EMD lifecycle has completed, production will continue through CY2027. During that timeframe, there will certainly be user-identified capability upgrades that would have to be developed and either retrofit or ECP'd onto the production options. This study would research successful modernization strategies that have been employed across the Service (e.g., F-22, C-17) as well as the Department and provide a range of options, with pros/cons, and costs to consider. (Value: Provides early Market Research alternatives for the KC-46 to consider as the program formulates future modernization plans.)		312-785-8962	AFLCMC/WKE	john.slye@us.af.mil		John	Slye	

172	USAF support equipment and its impact on weapon system performance and mission accomplishment	Explore the impact that the USAF Support Equipment & Vehicle (SE&V) and Automatic Test Systems/Stations (ATS) inventory equipment items have on weapon system performance. Is there a direct and quantifiable correlation between the mission capability status and condition of support equipment and the actual aircraft weapon system mission capability/performance and related mission accomplishment itself? USAF support equipment is broken down into two categories: peculiar (also referred to as unique) and common. Both the SE&V and ATS Program Offices reside within the AFMC's AFLCMC ACS/PEO community, located at Robins AFB, GA. There are numerous S&V and ATS support equipment items required to support the troubleshooting, repair, and testing of aircraft (and other support equipment) discrepancies. Additionally, there are numerous support equipment items required for the testing and loading of various armament and armament systems. Many support equipment items are aged, face obsolescence issues, and are in need of replacement, overhaul, and service life extensions. Given the understandable no-fail approach taken by the aircraft maintenance & munitions communities, it is rare (given what is at stake) that degraded support equipment conditions are "allowed" to practically manifest itself in degraded aircraft weapon system performance and mission accomplishment. ISSUE: USAF "support" equipment remains in need of refresh or replacement during its life cycle and the life cycle of the weapon system the equipment is supporting. While the maintenance and sustainment communities may be able to provide readiness statistics on the equipment itself, until a more direct and quantifiable correlation can be drawn between support equipment life cycle degradation-related issues and the impact on weapon system performance and mission accomplishment, it continues to remain a challenge to obtain critical funding within the support equipment arena. Can a direct and quantifiable correlation between degraded support equipment and weapon system performance/mission accomplishment be derived?	986-3965	937-656-3965	A4M	donald.neal.5@us.af.mil		Don	Neal	Civ
173	Viability of Current OSD Strategic Planning and Potential Options	a.) Perform an overall assessment of OSD and service-level strategic planning b.) Assess impact of guidance on subordinate planning and acquisition activities c.) Evaluate options to improve strategic planning to better align subordinate activities with the strategic plan d.) Evaluate implementation options on existing organizations and programs. (Expectation is to address planning down to at least the service capability and development planning levels and PPBS funding streams/processes.)	875-5908		AFLCMC/XZW	gregory.barnette@us.af.mil		Greg	Barnette	Civ
174	Development of patient preparation criteria for movement/transport IAW exisiting joint cargo guidance	Examine the Joint Inspection of Cargo process and developed similar criteria/preparation guidance for patient movement		618 229-6205	HQ AMC/SGX	linda.guerrero@us.af.mil	Air Mobility Command	Michaelle	Guerrero	Col
175	12. F-35 Platform Transition Beddown	Successful beddown requires careful management and consideration of permanent party and TDY personnel and their training. Late program changes and increased personnel throughput (permanent party and TDY) can adversely affect beddown success. JSF-unique maintenance and program details can introduce considerations not experienced during other weapon system beddowns. While lessons from other platforms (F-22, MQ-1/9) are beneficial, utilizing experienced F-35 personnel is instrumental.	312-260-7735	571-256-7735	LeMay Center/LL	paul.d.mcvinney.civ@mail.mil	Air Force Doctrine Center	Paul	McVinney	CIV
182	Impact of Military Health System's Electronic Medical Records (AHLTA and CHCS) on Patient Safety outcomes	Determine if current Military Health System's Electronic Health Records (AHLTA and CHCS) improving overall Patient Safety Outcomes		808-388-3405	PACAF SG	joseph.anderson@us.af.mil	PACAF Command Surgeon	Joseph	Anderson	Col
183	Accuracy Comparison: Detailed Ground-Up/Engineering Costing Methodology vs. Analogy Based Methodology	Cost estimating is approached with two methods: detailed ground-up/engineering and the analogy based methodology. Is it possible to improve estimating results, and do so with less work by using an analogous approach to the estimate instead of a detailed approach? For the most part, estimates follow one of two paths: the detailed ground-up engineering based estimate and the analogy based estimate. Research supports that the more detailed estimates accrue more error and therefore produce less satisfying outcomes. This study should compare the two approaches to analyze which method produces more accurate estimates over a given time frame with milestones at the 1 year point, 3 year point and 5 year point. Accuracy should be defined as how close the estimate comes to the program actuals. This effort should involve going back to the original cost estimate, characterizing it as a highly detailed or analogous estimate as well as follow the actuals over time; trends should develop after repeating multiple times.		937-656-5469	AFCCMC/FZCE	jimmie.crowell@us.af.mil	Air Force Materiel Command	Jimmie	Crowell	GS-14
184	Organic versus CLS Depot Maintenance Cost Comparison	Current insight into the relative costs of organic and CLS sustainment options is low due to due to a lack of controls (e.g., fleets either sustained one way or the other, but not both, CLS contracts fully funded while organic efforts are typically not, etc.). A study that would normalize effects of the lack of controls would be useful in the strategic decision-making process.		937-904-5710	AFCMC/OZA	samuel.wright.6@us.af.mil	Air Force Research Lab	Sam	Wright	Dr. (GS-14)
185	Implications of Price Escalation in Projecting Lifecycle Costs	The current push to include price escalation (formerly cost growth above inflation) in lifecycle cost estimates is intended to better describe actual future system costs; however, the inability to fully appreciate the meaning of price escalated future dollars leads long-lived programs to appear unaffordable, without an increase in program requirements. This practice could lead to bias against programs with longer lifecycles. A study is needed to fully investigate the validity of using price escalation when reporting lifecycle (particularly the sustainment portion) costs.		937-904-5710	AFCMC/OZA	samuel.wright.6@us.af.mil	Air Force Research Lab	Sam	Wright	Dr. GS-14
186	Compare/Contrast/Assess methodologies for BPC, SFA, and FID	Compare/Contrast/Assess the methodologies used by the service components to Program, Plan, Budget, and Execute their respective BPC, SFA, and FID programs. This topic will specifically address the process in which competing priorities among COCOMs are de-conflicted and resourced.		850-883-4322	6 SOS/DO	michael.hreczkosij@us.af.mil	AF Special Operations Command	Michael	Hreczkosij	Lt. Col
187	Aeromedical Staging Facilities (ASFs): a casualty of war. The lost and/or forgotten competency of a garrison capability.	ASFs morphed to CASFs (Contingency ASF) (new term ERPSS - enroute patient staging system) at the outset of OIF. Although OIF and OEF have long ended and casualty flows from current overseas operations are significantly on the decline why do CASFs remain? Is it because those responsible for making the decision don't know or don't remember the true capabilities of an ASF? Did our 12 years of OCO erase it? Can a generation of medical Airmen who have never known an ASF or been part of an ASF execute its mission? Is there an ASF reconstitution plan? Why isn't there only a CASF (ERPSS 44-165) unifying concept of operations and not an ASF one?	314-480-7310	314-480-7310	USAFE/SG2	Barbara.Jones@us.af.mil	US Air Forces Europe	Jones	Barbara	Col
188	Transparency in Healthcare	The impact of transparency in healthcare delivery and what makes a healthcare organization transparent?		703-681-6896	AFMSA SG 3/5	lisa.a.davison.mil@mail.mil	AFMSA/SG3OH	Lisa	Davison	Col
189	Healthcare Literacy	The impact of patient health literacy on the delivery of safe care and what programs or interventions can and should be used to improve patient health literacy and engagement in their health.		703-681-6896	AFMSA SG 3/5 ON	lisa.a.davison.mil@mail.mil	AFMSA/SG3OH	Lisa	Davison	Col
190	Healthcare workplace bullying	The impact of workplace bulling on safe healthcare delivery and how to identify and stop workplace bullying in the healthcare environment		703-681-6896	AFMSA SG 3/5 ON	lisa.a.davison.mil@mail.mil	AFMSA/SG3OH	Lisa	Davison	Col
191	Patient management strategies for medical operations in denied environments	Considering the potential for decreased patient survivability and decreased advanced surgical trauma care, conduct research and analysis on potential expectations, ethical dilemmas, and patient management strategies for medical operations in denied environments		808-388-8791	PACAF/SGR HQ	james.sandvig.1.ctr@us.af.mil	PACAF Command Surgeon	James	Sandvig	Dr

195	EXAMINATION OF BIAS AMONG MILITARY AND CIVILIAN SUPERVISORS TOWARDS INDIVIDUALS WITH DISABILITIES	TOPIC DESCRIPTION: This project would be to assess whether there are biases among Air Force civilian and military supervisors towards employees with disabilities, specifically individuals with targeted disabilities (IwTDs), the reasons why biases exist, and the impact on retention. Agencies have an ongoing legal obligation to prevent discrimination on the basis of race, sex, color, national origin, religion, age, disability, genetic information, and reprisal, and to eliminate barriers that impede free and open competition in the workplace. Barrier analysis is the process by which agencies uncover, examine, and remove barriers to equal opportunity at all levels of the workforce. A barrier is a specific agency policy, procedure, or practice that limits employment opportunities for members of a particular diverse group. An effective barrier analysis would not merely identify a â€œselection processâ€ as the barrier, but would pinpoint the particular phase or facet of that process that is causing the workforce discrepancy (i.e., â€œtriggerâ€). The research would focus on the retention of Individuals with a Disability (IwDs), with a focus on IwTDs, as retention of this group of employees is far lower than employees without disabilities. Research would entail looking for possible connections between the triggers in the workforce statistics and potential attitudinal, administrative, architectural, and/ or programmatic barriers. Recommend undertaking the following activities: 1. review Air Force exit and retention survey data and comments for FY14 and FY15; 2. assess requests for reasonable accommodation; 3. review MD715 data tables for the past five years to assess trends in the representation rates of IwDs and IwTDs by grade level in the major occupations ; 4. meet with selecting officials to examine their experiences at various stages of employment, i.e., recruitment, selection, performance, and advancement to discuss their experience and perception of IwDs and IwTDs; 5. hold focus groups; 6. examine whether retention issues exist in other agencies. RESOURCES AVAILABLE: Other Resources (access to data through AFPC, disability employment data available from the US Dept. of Labor, and the Department of Defense Annual Disability Employment Status Report) NOTE: This is one of three proposed topics submitted by Mr Corsi on behalf of the Air Force Barrier Analysis Working Group.		240 612-4006	AF/A1Q	kendra.m.duckworth.civ@mail.mil	AF/A1	Kendra	Duckworth	AF Disability Program Mgr
196	Research Air Worthiness certifications	The Air Force Acquisition community is concerned with Air Worthiness as it is used for the military, however as commercial aircraft with military mission modifications have been adopted for military use, there are some circles that push for maintaining an FAA certifications in addition to the military type and airworthiness certification. The competition and acquisition of the KC-46 ultimately resulted in a three part certification determination: 1. Amended Type Certificate, 2. Supplemental Type Certificate, and 3. Military Type Certificate; along with a military airworthness certification. In spite of previously granting FAA part 145 repair station certification to the Air Force for KC-10 paint shops at Tinker AFB, and having a memorandum of agreement with the USAF for Space transportation and Range Activities, the FAA has maintained that they would not grant FAA part 145 repair station certification to support an FAA certifications for military aircraft. In addition there is much confusion as to what extent can a commercial aircraft with military mission modifications be called an FAA certificated aircraft in terms of both a FAA type and/or FAA or military airworthness certificates. As a result, some users have determined that the extra oversight of maintaining "FAA certified-like" processes results in greater efficiency and surety for a non-compromised supply chain and sustainment practices. Others have argued that the additional oversight is not as value added in the military sustainment activities. Recommend one individual or team of students be assigned to develop tactics and procedures for assessing the benefits to the Air Force Enterprise of pursuing employment of these FAA Type/Airworthness and/or FAA-like type/airworthness certifications versus military type/airworthiness for the commercial aircraft with military mission modifications or next generation military technologies of the future. Each need a requirements analysis and development of implementation plan for a variety of scenarios. They should work with the Air Force Materiel Command, Air Combat Command, and Air Mobility Command to understand the pros of cons of implementing various type certificates for existing and planned fleets.		7036936524	AQD	diana.s.bednara.civ@mail.mil	SAF/AQ	Diana	Bednara	GS-14
197	What are the implications of 24/7 ANG missions?	Manpower requirements for a traditional force accomplishing a full-time mission? Balance of full-time personnel to part-time personnel. Balance of current, full-time operations to surge capacity. How are support functions provided? Base infrastructure support. Personnel support functions (medical, chaplains, civil engineering, etc.). How can ANG tailor the missions to retain ANG cost-effectiveness and its part-time personnel model?	703-222-1977	703-692-1977	NGB/CF	sean.f.conroy.civ@mail.mil	Air National Guard	Sean	Conroy	Mr.
198	What are primary lessons for ANG after 20+ years of combat operations?	Guard Airmen, their families, and employers have adapted to increased operational tempo, it is time to examine the adaptations made on the fly. What is the potential impact upon ANG? Are ANG units properly organized to meet future demand?	703-222-1977	703-692-1977	NGB/CF	sean.f.conroy.civ@mail.mil	Air National Guard	Sean	Conroy	Mr.
199	Joint Patient Evacuation System C2	1. Examine C2 relationships for all casualty evacuation platforms. 2. Examine how a Joint C2 structure could enhance Medical Operations in warfighting environments. 3. Examine the impact a Joint C2 structure might have on patient hold capabilities during future engagements. 4. Explore how integrating Joint capabilities would allow for a more limited footprint while expanding capabilities and reducing health service support redundancies.		703-681-7877	AFMSA SG3X	julie.a.skinner18.mil@mail.mil	AFMSA/SG3XI	Julie	Skinner	Maj
200	AFMS Response to Viral Outbreaks in Deployed Settings	Anaylze current AFMS ability to respond to widespread infectious (including contagious human to human transmissible) biological agents in deployed settings. Identify gaps, challenges, and recommendations across the DOTMLPF spectrum related to typically fielded UTCs (personnel and equipment), current policies, likely medical interventions, AE limitations, existing plans, and medical logistics. Review historical scenarios for applicable lessons learned- SARS, Avian Flu, H1N1, Ebola, Norovirus, etc. Include considerations for operations in A2/AD environments.		703-681-7837	AFMSA/SG3X	trinette.flowers-torres@us.af.mil.	AFMSA/SG3XI	Trinette	Flowers-Torres	Maj
201	The Shifting Culture of Religion in the Military	Research is needed to better understand the relationship between religion and non-federal entities. Due to changes across the religious landscape of America (i.e. executive orders and the repeal of DADT and DOMAâ€™s decision that DADT is unconstitutional and its impact upon religion in the military), the relationship between the military chaplaincy and non-faith entities have been seen as adversarial. Research in this area could help to provide insights for future relationships with regard to the shifting culture of religion in the military.		571-256-7656	AF/HCX	darren.b.duncan.mil@mail.mil	HAF/HC	Darren	Duncan	Major/Chaplain
202	Determine the viability of a 30-year retirement as an option to the current 20 year retirement construct.	â€¢ The 30 years would be cumulative, vice consecutive, allowing individuals to depart the service entirely for periods of time. Only periods of satisfactory performance in the military would be considered as a qualifying year. This time could be comprised of a combination of full time Active Duty, full time Reserve, or part time Reserve. â€¢ Like the Reserve Component retirement system currently in place, retirement pay would be based on the individuals rank and the number of active duty points accrued during the 30 year period. Pay could start immediately upon satisfaction of 30 qualifying years, or similar to the current Reserve Component retirement system, at the age of 60 (unless reduced do to active duty support of a named contingency). Recommendations would require a corresponding cost benefit analysis. Considerations: â€¢ Effects to time in grade requirements â€¢ Health benefits â€¢ Law modifications â€¢ Risk assessment â€¢ Barriers â€¢ Cost			AU/RF	barbara.lee.1@us.af.mil	Air Force Space Command	Barbara	Lee	Colonel
203	ROI associated with developing new methods for Airman selection, mission-alignment, mission readiness, and retention	What is the return on investment associated with developing new methods for Airman selection, mission-alignment, mission readiness, and retention, to include enhanced psychological/ psychiatric assessments and identification of predictive genetic and biological markers for the major career fields (Air, ISR, Cyber, RPA, Spec Ops) across the Airman's lifecycle? Develop enhanced aptitude assessment to optimize personnel and the career field matching process across the enterprise.	785-4340	937 255-4340	711HPW/XPT	william.nelson.35@us.af.mil	Air Force Research Laboratory	Todd	Nelson	Chief, Strategic Planning
204	Understanding & Adopting Acquisition Lessons	- How do we learn lessons in acquisition? Should the USAF adopt acquisitions doctrine? Why do we continue to repeat acquisition mistakes? Why canâ€™t streamline acquisition? Why does it take so long? - Objectives -- Review, analyze and improve the acquisition process - Goal -- How to improve USAF processes	312-986-7274	937 656-7274	AFRL/RX	monica.poelking@us.af.mil	Air Force Research Laboratory	Monica	Poelking	Chief Strategist
205	Resource scarcity and the impact on SOF operational capabilities: Competition and conflict	Water is becoming the new oil. Resource scarcity and specifically potable water scarcity is projected to be a major driver of conflict in many parts of the world where USSOF operate. How will competition over resources shape conflict in the future, and what are the implications for USSOCOM? SOF forces are expected to operate in environments where potable water shortages are pervasive. How will SOF capabilities be impacted when operating in water-scarce environments? Research can focus broadly on analysis of current SOF capabilities for operating in water scarce environments, as such, what future technological advances should USSOF be cognizant of that can help small SOF units operate successfully? What are the potential â€œmine, save, and recycleâ€ alternatives? Is â€œharvesting fog,â€ a method of retrieving moisture in coastal areas, still a viable practice in other environments? How does resource scarcity affect Joint Intelligence Preparation of the Operating Environment doctrine â€œsystems perspective?â€ What are the land use issues and implications for the local populations?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13

206	Physical Effects to the Body after Prolonged Exposure to Counter Radio-controlled IED Electronic Warfare (CREW) Systems	Throughout the past 13 years of combat operations in Iraq and Afghanistan, ground combat forces rapidly fielded multiple CREW systems from JIEDDO to mitigate transmission signals that initiated IEDs. Both vehicular and back pack mounted CREW systems placed high power, radio frequency transmission antennas inches to several feet from the operator's body and head. No scientific medical data was provided when formally requested through program managers, the US Army, the US Navy, the DoD, or JIEDDO since 2008. Known or expected medical ailments need to be identified and briefed to service members and documented exposers included in the medical records. JIEDDO will need to modify CREW equipment to ensure the maximum safety for future operations. In the last four years, several cases of brain tumors and cancers have been surfacing in young USAF service members that were directly exposed to CREW systems. Identify the effects of high power radio frequencies associated with the current and legacy CREW systems after prolonged and multiple exposures to the human body. Study should focus on 21 - 60 year old populace that performed missions in theater as SOF, EOD, and Transportation Convoy Operators (CE and LRS). Exposed personnel should be identified and contacted to ensure medical treatment and screening is completed for known ailments as a result of this study.	523-6853	(850) 283-6853	AFCEC/CXD	john.olive.1@us.af.mil		John	Olive	Dr.
207	The Data Rights Tipping Point	DoD and Air Force statutory and regulatory policy is in place for the procurement of all data solely paid for or required by the Government for system operations and sustainment. Also within the DoD, "owning the technical baseline" has become a fundamental expectation for all acquisition programs. Furthermore, significant DoD funds are allocated to company-executed IR&D. Through all of these activities, there continues to be a chasm of difference between Industry and the Air Force on data rights and IP. This study, using KC-46 experience (and other recent program experience as applicable), would focus on what exactly the Government can and should expect relative to data rights based on statutory and regulatory policy (to include IR&D efforts). (Value: Air Force wide benefit in developing acquisition strategies and negotiating with Industry regarding data rights.)		312-785-8962	AFLCMC/WKE	john.slye@us.af.mil		John	Slye	
208	Digital Thread Implementation	Investigate the implementation of the digital thread concept across the services and industry. Propose the evaluation of a set of digital thread standards that considers the types and uses for digital thread data to include potential use for additive manufacturing. Study should also look at potential lifecycle cost benefits analysis of a spectrum of alternatives from not retaining, retaining access to, or taking delivery of detailed development, manufacturing, and operational data as compared to the cost of storing large volumes of digital data over the lifecycle of a weapon system.	336-3528	405-736-3528	AFSC/EN	Edward.ayer@us.af.mil		Wayne	Ayer	
209	Identification and Analysis of Key Demographic, Socioeconomic, Geographic, and Technological Indicators of Incompatible Developmental Activities Adjacent to Air Force Installation Complexes and Ranges	Since their inception, Air Force bases have been economic centers of gravity for local and regional communities, which at times, attract incompatible activities causing encroachment. Encroachment causes an erosion of capability for the Air Force to utilize its installations, airspace, MTRs, and ranges to their fullest extent. Efforts to combat encroachment involve leveraging USAF, DOD, and other programs at the cost of tens of millions of dollars and thousands of man-hours per year. Current Air Force Encroachment Management program actions track activities across 13 encroachment "challenge areas." The 13 challenge areas span beyond simple urban growth and attempt to provide a more comprehensive review of activities which compete for resources like water availability and frequency availability. Renewable energy projects such as wind and solar can also impact operations. While the current Encroachment Management Plans and the 13 challenge areas are a marked improvement in how the USAF identifies and engages encroachment activities, they are still reactionary. This proposed research project would identify, catalogue, and analyze the demographic, socioeconomic, geographic, and technological drivers which "feed" the activities covered by the 13 challenge areas. By identifying the "leading indicators" for each of the 13 challenge areas, analyst would be able to identify local and regional (or national) trends and forecast where and what type of challenges the Air Force will face over a given time horizon. This will allow Air Force Encroachment Managers to engage with local, regional, and national policy makers to develop strategies to mitigate the impact of incompatible activities at a lower cost (policy adjustments) versus current programs (buying controlling interest in land). An additional benefit of this research would be the ability to predict "types" of developmental pressures that Air Force Civil Engineer Center could utilize to target public-private partnerships, Enhanced Use Lease opportunities. This would allow the Air Force to shape development in a compatible way utilizing existing programs.	969-8825	(210) 395-8825	AFCEC/CPPR	charles.cyr@us.af.mil		Charles	Cyr	Civ
210	Non-TSPR (Total System Performance Responsibility) Acquisition Environment	In the 1990 the Weapons System Acquisition and Sustainment offices were directed to use the TSPR construct as a national defense strategy to minimize government manpower. During the TSPR execution the manpower shifted from the Government Office to Defense Contractors, to perform various roles; such as Engineering Management, Program Management, Configuration Management, Documentation Management and Logistic Management. The long term contracts that utilized this concept are closing and the management of the weapons systems is now returning to Government Program Offices for management. However, the manpower depletion from the program offices do not allow such a workload shift. Increasing manpower needed to properly manage weapon systems require an innovative approach to function efficiently and effectively. Suggest a study to: 1) Assess AF program offices current ability to effectively manage weapons systems in peacetime and wartime 2) Identify a plan to identify changes in processes, policies and procedures to streamline reducing the workload burden. a) Identify plans to cross flow personnel into shortage career fields b) Identify plans to reduce meetings c) Identify plans to reduce travel d) Identify policies to allow cross flow data between Disciplines (Logistics, Engineering, Financial & Contracting) 3. Harnessing key technology to: a) Identify automated systems to self-populate documentation (Financial, Contracting, Logistics) b) Identify technology to cross utilize data (Financial, Contracting, Logistics & Engineering) c) Assess supplier databases accessibility to increased available information 4) As part of the study, identify the highest payoff technology to enabled capabilities that would help the AF close potential gaps.	834-8595	719-556-8595	AFLCMC/HBQP	james.keller@us.af.mil		James	Keller	Civ
211	Understanding Cost of Late Air Logistics Complex Production	What is the cost of late Air Logistics Complex production? There is currently no good way to estimate the dollar impact of an aircraft, and-item, etc. being produced a day / week / month late from the depot. Frequently, there is a desire to identify a return on investment (ROI) for a particular action at the depot. When the action is designed to ensure parts, equipment, etc. are available when needed to meet production requirements, a major element (cost of delayed production) cannot be included because it's never been definitively determined. Having this information would allow senior leaders to make intelligent choices about investments and priorities, with a true understanding of the cost of the options under consideration.	777-6064	801-775-6064	419SCMS/CL	Russell.taylro.11@us.af.mil		Russel	Taylor	
212	Cost Benefit Analysis - Reliance on Automated Tools and Centralized Help Desk for Office IT Support versus Organic, In-House Capability	In the past, offices had in-house, organic manpower to provide IT support for office IT tools/systems. With the manpower reductions of the past several years, offices must now rely on automated tools (vESD) and a centralized Help Desk (base-level in the case of WPAFB). Anectdotal information indicates that the current lack of in-house, organic support is driving increased costs and productivity degradation (downtime, redundancy from each individual having to address their IT issues without kowing if someone else in the office already has a fix, excessive wait time for fixes or new user access, high-graded employees' time diverted to working through the IT support process vs mission, etc.). Would it be more cost effective to fund some level of organic, in-house IT support?	986-0380		AFMC/PKX	martin.trent@us.af.mil		Martin	Trent	
213	Cost of Clinical Currency and Readiness	There have been concerns across the services regarding sustainment of clinical and surgical currency for physicians, nurses, technicians and extender providers/allied health personnel. There are fewer inpatient platforms, less exposure to critical and complex case mixes and stronger focus on business plans/access/patient experience. The military health system by nature of its missions cannot function with a civilian business model. There needs to be an assessment of the prioritization of routine in-garrison care, regularly rotating personnel to get required clinical experience for medical readiness (usually not available within the MTF), required UTC-driven readiness training, deployment requirements and development of a business model that is inclusive of all the disparate requirements.	986-3642	937-656-3642	AFMC/SGR	janet.robinson@us.af.mil		Janet	Robinson	Col

214	Measures of Effectiveness (MOE) for Clinical Currency Training	There have been concerns across the services regarding sustainment of clinical and surgical currency for physicians, nurses, technicians and extender providers/allied health personnel. There are fewer inpatient platforms, less exposure to critical and complex case mixes and stronger focus on business plans/access/patient experience. Military healthcare personnel are expected to be clinically ready for all contingencies and the JIT model of training could not work for clinical, hands-on, patient treatment experiences. Much work is going into developing clinical currency programs within all DoD branches, however, defining specific currency requirements and frequency of currency experience has been a challenge. Identifying/developing MOEs for clinical patient treatment experiences is critical to development of effective training programs to meet our medical readiness needs.	986-3642	937-656-3642	AFMC/SGR	janet.robinson@us.af.mil		Janet	Robinson	Col
215	Effects of Recent Organizational Changes to Base-level Personnel Morale	Research effects of most current/recent organizational change to base-level operational efficiency and discover disconnects during change transition, especially focused on personnel morale and retention. Identify issues if any and suggest mitigation procedure/process.	969-8053	(210) 395-8053	AFCEC/CPPD	rodelio.villegas@us.af.mil		Rodelio	Villegas	Civ
217	Operational Information Flow from Units to HQ USAF	Historical OPREP reporting procedures frequently contain insufficient information to meet the needs of Air Staff leadership based on the need to contact the reporting units for more information. Commanders periodically bypass the OPREP reporting channel and provide information directly to senior leaders.	312-260-7735	571-256-7735	LeMay Center/LL	paul.d.mcvinney.civ@mail.mil	Air Force Doctrine Center	Paul	McVinney	CIV
218	Cyberspace Maintenance	How do we define cyberspace maintenance and distinguish it from operations what are the impacts to professional development, AFSCs, and training?		719-554-6002	HQ AFSPC/A2/3/6WD	william.mcculley@us.af.mil	Air Force Space Command	William	McCulley	Lt Col
219	Cyberspace Organization Structure	What is the optimal organization structure for cyberspace operations units? Should we consider the composite unit structure used briefly in the 1990s, etc.?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	william.mcculley@us.af.mil	Air Force Space Command	William	McCulley	Lt Col
220	Cyberspace Superiority vs Supremacy	Is it possible to achieve â€œsupremacyâ€ or â€œsuperiorityâ€ in the cyberspace domain? Is local superiority more achievable than on a global scale?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	william.mcculley@us.af.mil	Air Force Space Command	William	McCulley	Lt Col
221	Cybermindedness	- How can we develop "Cyber Mindedness" in regards to how we approach OCO? What are the implications for force structure, equiping, training, force presentation, service resourcing? What are some recommendations on how to do or not do it? - How can we develop a "cyber mindedness" approach to economics, security and homeland defense? - Should the integration of military and civilian cyber operations be coordinated and jointly overseen in order to support and defend U.S. national interests?	719-554-3338	719-554-3338	A2/3/6C	corey.ramsby@us.af.mil	Air Force Space Command	Corey	Ramsby	Col
222	Comm Squadron next	How do we Implement and evolve Comm Squadron next?	719-554-3338	719-554-3338	HQ AFSPC/A2/3/6C	corey.ramsby@us.af.mil	Air Force Space Command	Corey	Ramsby	Col
223	LeMay Center -- operational issue	5) Close Air Support - do we have an effective strategy for the future?								
224	Measures of Effectiveness of AFMS Global Health Engagements	Review the way AFMS measures the effectiveness of Global Health Engagements. Determine if leaders are provided valuable decision points necessary for evaluating mission success.		703-681-6986	AFMSA/SG3X	juan.i.ubiera.mil@mail.mil	AFMSA/SG3XI	Juan	Ubiera	Lt. Col
225	The Impacts of a High Fidelity Simulator for RPA Training and Distributed Mission Operations Network Integration	Advantages/Disadvantages of training with high fidelity simulator connected to the DMO network and integration with other airborne assets.		757-225-3366	HQ ACC/A3	joe.joyce.1.ctr@us.af.mil	HQ Air Combat Command	Joe	Joyce	Mr.
227	Smoothing the Transition from CLS to Organic Support	Many weapon systems are purchased with CLS support contracts in place for reasons such as political expediency, inducing contractors to bid on production, program office reasons, etc. Eventually, though, many of these same systems go through a transition to organic support. Assuming we canâ€™t go directly to organic support after purchase, are there things that can be done upfront to smooth the eventual transition from CLS to organic support? Certainly obtaining extensive data rights is one area of valueâ€¦are there others?		937-904-5952	AFLCMC/OZA	kelvin.utendorf@us.af.mil	Air Force Research Lab	Kel	Utendorf	Dr. (GS-14)
228	Properly Pricing Product Support Costs	The question is--how does the Corporate Air Force properly incentivize individual Program Offices to incorporate all costs into their product support decision-making processes? Of course, this begs other questions--what process(es) can Corporate Air Force put in place to correctly determine good product support strategies and how can it determine the cost(s) of not doing so? During the weapon system acquisition process, Program Offices typically make product support decisions based on what is best (and most affordable) for the program at a specific point in time. However, the Corporate Air Force might be better served with a decision contrary to that made by a Program Office acting individually. Consider new technology "X." Since the AF has no experience with sustaining "X," the Program Office chooses contractor support for "X" despite the expense. From the Corporate Air Force perspective, "X" will be a technology incorporated in nearly all future programs so developing organic sustainment capabilities for "X" is important. So, even though the Program Office is making a correct decision for its specific program, it is making a bad decision from the Corporate Air Force perspective. From an economic point of view, the individual Program Office is not incorporating all of the costs into its product support decision.		937-904-5952	AFCMC/OZA	kelvin.utendorf@us.af.mil	Air Force Research Lab	Kel	Utendorf	Dr. (GS-14)
229	AF Hiring Process	Industry and other agencies can hire much faster than the Air Force. The Air Force needs an independent body to investigate what is needed to streamline the AF hiring processes. In particular, in the hiring of scientists and engineers (S&E), we can not compete with industry, who can hire in days/weeks in comparison to months. The independent body should investigate not just the speed of the existing process but the value, and benchmark our process against industry. The study's finding could substantiate changes to current OPM or statutory requirements.		405-736-3184	AFSC/EN	kevin.stamey@us.af.mil	Air Force Materiel Command	Kevin	Stamey	SES
230	Rising cost of Information Assurance (IA) compliance to IT systems Operations & Maintenance (O&M) sustainment	Rising cost of Information Assurance (IA) to IT systems Operations & Maintenance (O&M) sustainment budget. Paper should focus on rising costs of IA compliance make, impacts to reduced funding for fixes and enhancements.		757-225-4145	HQ ACC/A5	john.swartz.4@us.af.mil	HQ Air Combat Command	John	Swatrz	Mr. (GS-13)
231	Diversity: Does it really make us better?	Diversity has become the military's new mantra. Is a diverse force actually a better fighting force? If so, by what metric? What are the advantages and disadvantages of a culturally diverse force. Can a truly diverse force be created in a fair manner? What are the challenges in leading a diverse force. Is there a "sweet-spot" for how diverse an organization should be?	493-7938	334-953-7938	DEW	gene.kamena@us.af.mil	Air War College	Gene	Kamena	AD-25
232	Capturing the investment of intellectual capital	Implement an accounting system to estimate the value of the intellectual capital invested to complete a tasker/project As resources decline, the refrain of â€œmore with lessâ€ becomes more audible. How much more? How much less? It is uncommon in the military â€œcan doâ€ culture to attempt to quantify the investment of intellectual capital in a project, perhaps since such work is seen as requiring â€œwhatever it takes.â€ Yet the time available in a given week or day, or available for an individual project is finite. With a measure of the value of intellectual capital invested, leaders can decide whether the result attained warranted the investment. Such a measure also gives a method for improving support efficiency when an organization desires a certain product/project but cannot "afford" the intellectual capital price. As and example, can the Spaatz Center do it less expensively? Professionals such as engineers, accountants, lawyers and consultants must accurately record the time invested each day on various projects so they can bill the correct client. While any such accounting system is a good start, this report recommends calculating a dollar value based on a simplified system which equates the hours invested by different ranks (GO, Col, FGO, CGO, enlisted and civilian equivalents) to a "billing dollar figure." Eschewing false precision (and the emotional distaste of attempting to assign a dollar value to an individual's work), the metric need only be an approximation sufficient to capture the relative value of an intellectual capital investment. Some will understandably argue against a system using dollar values as counter to a military ethos where, unlike the business world, the value of results are sometimes intangible or even incalculable (i.e. deterrence, operating safely, a successful wingman intervention, education(?)). But for the Spaatz Center and many other organizations in government, such a system could enable leaders to make better resource decisions. Using such a system, the estimate of intellectual capital expended in an hour-long ESS weekly staff meeting is $450. Hypothetically, the DS could discover through such data that Spaatz is investing $1000 in intellectual capital to approve a $300 expenditure. Such a result should drive a process change to make the $300 expenditure decision more efficiently. There are many other examples that the researcher could use to provide additional rationale for doing this research and they need further exploration in this current more with less culture.	493-6529	334-953-6529	AU/CA	john.carter.52@us.af.mil	Air University	John	Carter	Mr.
233	Health Leadership Development - Partnerships w/Academia and Department of Defense	Anything related to the development of future Military Health Leaders with a focus on National Health Strategies, Public and Global Health and strategic alignment to US foreign policy goals. What is the optimal method of developing medical military statesmen?		703681-8091	AFMSA/SG5	Kevin.R.Kupferer2.mil@mail.mil	AFMSA/SG5I	Kevin	Kupferer	Maj
234	Training curriculum development for AFMS International Health Specialists	Evaluate and compare existing training paradigms for Global Health Specialists in Academia and DoD to MHS strategic objectives and current capabilities to determine the optimal training and occupational experience required for Regional International Health Specialists in a new Joint Environment		703681-8091	AFMSA/SG5	kevin.r.kupferer2.mil@mail.mil	AFMSA/SG5I	Kevin	Kupferer	Maj

235	Acquisition Career Field for BSCs	Currently MSC has dominated the acquisition certified position space because of the Acquisition Career field. Medical Research and Acquisition Leadership roles are lacking the highly technical skillsets needed for innovation, the BSC should include Acquisition as a career path. Research the value and importance of technical and engineering career fields in Medical Research and Acquisition Leadership roles. Research an implantation strategy.		703 681-8187	AFMSA/SG5	brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
236	Strategic Medical Research Implications of the 'Pivot to the Pacific'	Research the potential medical gaps and capture opportunities for AFMS niche areas (e.g. Human Performance and En-Route Care) for medical research investment		703 681-8187		brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
237	Global Health Engagement - AFMS case study	Pick a country; Identify and examine DoD, non-DoD, non-government, and host nation initiatives (including studies, crisis events, international community presence, diplomacy etc.) that relate to both public health, security, and security cooperation; Analyze country 'landscape' to answer - is the international harmonious in its efforts? Is the international community able to identify what works? Is the international community able to measure it's progress? Refer to Policy Guidance for DoD Global Health Engagement (AMHS 3.1.3 12.14.0.1), HHS National Health Security Strategy and Implementation Plan 2015- 2018, AFTTP 3-42.9 GHE and IHS Teams, Global Health Security Agenda, and Global Health Initiatives		703 681-8187	AFMSA/SG5	brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
238	AFMS Foreign Military Sales/Transfer	Paper context should include Theater Security Cooperation and Global Health Engagement and International Health Specialist Teams role in the Foreign Military Sales/Transfer .		703 681-8187	AFMSA/SG5	brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
239	Global Health Strategic Communication	Global Health Engagement (GHE) activities and Humanitarian/Disaster Assistance gives AFMS access to unique scenarios worldwide to support National Security Goals. Paper should include what is needed to promote GHE and ensure the program aligns with other military services and Defense Health Agency (DHA) GHE activities.		703 681-8187	AFMSA/SG5	brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
240	Global Health Strategic Communication	Paper should include strategic communication strategies with DoD, non-government organizations, other government organizations within Global Health Engagement/Initiative Activities in foreign partner host nations		703 681-8187	AFMSA/SG5	brian.d.mccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
241	Can Operational Leadership reshape the Military Health System in todays political and economic environment	Discuss current MHS challenges from strategic and operational level and overarching political and strategic goals to evaluate the feasibility of effective Operational Leadership (reference Joint Forces Quart. iss. 77). Has the MHS appropriately or inappropriately applied relevant business models? Are the current models the optimal mix for future budgeting and manpower requirements, or would a different model enhance performance. Include Measures of Effectiveness and the appropriateness of those MOEs for the MHS vs. other DoD entities.		703 681-8091	AFMSA/SG5	kevin.r.kupferer2.mil@mail.mil	AFMSA/SG5I	Kevin	Kupferer	GS-15
242	Resiliency of Deployed Critical Care Nurses	Quantify the Mental Health effects of multiple deployments on Critical Care and Emergency Room nurses. Is their attrition, MEB, profile rates significantly higher than other AFSCs? Are there any proven support tools for this population that leaders should incorporate after deployments?		850-883-8164	96 IPTS/SGIC	carole.farley@us.af.mil	Air Force Materiel Command	Carole	Farley	Col
244	Mitigating SOF suicides: Susceptibility and risk factors	According to a 2014 New York Times article, â€œIn the past two and a half years, 49 Special Operations members have killed themselves, more than in the preceding five years. While suicides for the rest of the active-duty military have started to decline after years of steady increases, they have risen for the nationâ€™s commandos.â€Ø SOF suicides continue to happen, even with focused attention from the current USSOCOM commander (as stated in his confirmation hearing) and throughout the chain of command. Whatâ€™s driving the increase? What has been overlooked? Are the current statistics an anomaly or a gauge for concern? What indicators correlate with susceptibility to suicide? Are there unique risk factors associated with SOF suicides? Are SOF suicides precipitated by different factors among the specialties within the SOF community? What preventive measures can be taken to reduce suicide in the SOF community?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
245	IDENTIFYING SOLUTIONS TO THE INABILITY TO ATTRACT AND RETAIN WOMAN AND MINORITIES IN THE RATED CAREER FIELDS	Women and minorities enter the rated career fields at a lower rate than white men, and those that do select those career fields leave the Air Force at a higher rate at the end of their initial service commitment. Only six percent of the rated force, which includes not only pilots but also navigators, air battle managers and combat systems officers, are female. As of August 2014, this six percent amounted to 1,339 female rated officers, who represented just 10% of the USAF female officer corps. Getting women and minorities to select and remain in rated career fields is essential to increasing the diversity of the Air Forceâ€™s senior officer corps. For example, although rated officers only represent 33% of the total USAF officer corps they account for 62% of the general officers and currently nine of the twelve USAF 4-stars. Work has been done, by RAND and others, into factors influencing career field selection and officer retention and their impact on Air Force diversity. However, too little work has been done on what policy changes could be made to reverse those outcomes. The research would focus on a barrier analysis of the policies, practices and procedures that impede the entry into and retention in the rated career fields by women and minorities. Barrier analysis is the process by which agencies uncover, examine, and remove barriers to equal opportunity in the workforce. A barrier is a specific agency policy, procedure, or practice that limits employment opportunities for members of a particular diverse group. An effective barrier analysis would not merely identify a â€œselection processâ€Ø as the barrier, but would pinpoint the particular phase or facet of that process that is causing the workforce discrepancy (i.e., â€œtriggerâ€Ø). The research would seek to identify specific policies and practices that could be revised to change the current outcomes. Note: this is the second of three proposed topics submitted by Mr Corsi on behalf of the Air Force Barrier Analysis Working Group.		703-693-9503	SAF/AA	heather.k.meyer.civ@mail.mil	AF/A1	Heather	Meyer	Associate Director
246	BARRIERS TO WOMEN ADVANCING TO SENIOR LEVEL CIVILIAN POSITIONS (GS13-15 AND SES) IN THE AIR FORCE	This project would focus on analysis of barriers to advancement (or â€œglass ceilingsâ€Ø) for female civilian Airmen (Black, Hispanic and White women) to executive positions which are normally found in the Senior Executive Service (SES) and equivalent rank in pay systems other than the General Schedule, as well as in the feeder grades for those positions (GS-13 through 15). Agencies have an ongoing legal obligation to prevent discrimination on the basis of race, sex, color, national origin, religion, age, disability, genetic information, and reprisal, and to eliminate barriers that impede free and open competition in the workplace. Barrier analysis is the process by which agencies uncover, examine, and remove barriers to equal opportunity at all levels of the workforce. A barrier is a specific agency policy, procedure, or practice that limits employment opportunities for members of a particular diverse group. An effective barrier analysis would not merely identify a â€œselection processâ€Ø as the barrier, but would pinpoint the particular phase or facet of that process that is causing the workforce discrepancy (i.e., â€œtriggerâ€Ø). The research would focus on glass ceiling and blocked pipeline barriers for women in general, and for Hispanic and Black women in particular. It would entail looking for possible connections between the triggers in its workforce statistics and any policies, procedures, or practices that might be causing discrepancies. Recommend undertaking the following activities: 1. identify the typical background and experience of individuals selected to the senior grade levels (SES, SL/ST, DISES, DISL, and the feeder grades of GS-13 through GS-15); 2. review the qualifications of women seeking career advancement; 3. examine the recruitment of women into the senior grade levels and management positions (including applicant flow logs); 4. investigate every phase of the merit promotion process and career development programs beginning at grade GS-13; 5. conduct a longitudinal review of applicant flow statistics found in Report Tables A7, A9, and A12 of the EEOC Management Directive MD-715 Report submitted annually by the Air Force; 6. review the participation of women in general, and Hispanic and Black women in particular by grade level in the major occupations with upward mobility (for example, Black females encountered a trigger in the 0301 series, while Hispanic females experienced triggers in three of the occupations (0301, 0343, and 2210)); 7. meet with selecting officials to examine their experiences in the hiring process and to discuss their perception of female candidates; and 8. examine whether this phenomenon of lower than expected participation rates of women in executive or senior leadership positions occurs in other agencies. Note: This is the third of three topics submitted by Mr. Corsi on behalf of the Air Force Barrier Analysis Working Group.		240 612-4113	AF/A1Q	james.h.carlock.civ@mail.mil	AF/A1	James	Carlock	Dir AF Equal Opportunity
247	Bringing back the Warrant Officers	I see four reasons for revisiting Warrant Officers in the Air Force. These are: 1) Personnel costs represent a substantial portion of the Service budgets; 2) the Air Force, compared to the other Services, has a very high officer-to-enlisted ratio; 3) the Air Force is uniquely technical requiring longer-serving, experienced personnel; and 4) an officer-heavy Service increasingly seems to reinforce, if not create, unnecessary class differences in the Service. Should the Air Force re-create the Warrant Officer and replace a number of officer billets with Warrant Officer positions.	493-8596	953-8596	ACSC/DEI	jonathan.arnett@us.af.mil		Jonathan	Arnett	Lt Col
248	Tactical Strategic Communication	Has the AF appropriately trained, resourced and engaged leadership at all levels in appropriately engaging Airmen across available media sources in a timely and effective manner? For example, are squadron commanders given the tools and knowledge to engage their unit(s) through Facebook, Twitter, etc... My assessment, based on the way we've collectively handled media issues recently, is our leadership is not prepared to engage Airmen apart from commander's calls and MBWA... ps-I'm retiring, so won't be at this email/phone for long.		334-953-6306	ACSC/DL	jody.dow@us.af.mil		Jody	Dow	Lt Col
249	ANG as innovative organization	This is a lot of commercial and academic information on how to create and sustain an innovative/learning organization. How might these organization theories be adapted by ANG?	703-222-1977	703-692-1977		sean.f.conroy.civ@mail.mil	Air National Guard	Sean	Conroy	Mr.

250	What will the 21st Century Airman need to balance to perform the mission sets of the operational Air Guard?	The Air National Guard of the 21st century is operational. There are several Requirements to maintain an operational force a Traditional member of the Air Guard Must complete. Members must balance fulfilling these requirements as well as meet family and employer needs. Are these requirements an accurate reflection of what is needed to maintain an effective operational force? Are we expecting too much of our Traditional force? What is the best balance and mix of deployments a Traditional Guard Member should expect? Is an operational Air Guard sustainable in its construct? Is the Air Guard set up as an organization to be operational, is it fiscally, functionally as well? Should it look different than it does today? If so, how?	703-222-1977	703-692-1977		sean.f.conroy.civ@mail.mil	Air National Guard	Sean	Conroy	Mr.
251	Effectiveness of Disassociating TFI Units	The process of approving Total Force Initiatives should include a review of disassociations. The number of disassociations often rivals the number of associations considered. As each association and disassociation action can drive substantial bills, the AF can examine the effectiveness of associated units and the process to approve association and disassociation actions.	312-260-7735	571-256-7735		paul.d.mcvinney.civ@mail.mil	Air Force Doctrine Center	Paul	McVinney	CIV
252	Child Combatants in Africa: POW Status and Medical Care Requirements.	What are the ethical challenges associated with the imprisonment of child combatants? What are the requirements for medical care of child combatants? What military assets are presently dedicated and/or most appropriate for this mission? What limitations exist? How might the US Government establish international norms of behavior regarding imprisonment and medical care of children in POW status? What are the international, US governmental and AFMS impacts of child combatants and how do we best prepare as a military for this developing requirement.		210-395-9146	AFMOA/SGHM	donald.lane@us.af.mil	AFMOA/SGHW	Donald	Lane	Col
253	PEO Lifecycle Cost Accountability	- How should we hold USAF PEOs more accountable for lifecycle costs? - Objectives -- Help our organization deliver affordable Capabilities and Weapons - Missions -- Air Dominance - Desired Insights -- Best transition and acquisition processes to maximize value	312-986-7274	937 656-7274		monica.poelking@us.af.mil	Air Force Research Laboratory	Monica	Poelking	Chief Strategist
254	USAF Weapons Review	Why have weapons been overlooked in the USAF in the past several decades? - Objectives -- Refocus USAF attention on weapons development, utilization and optimization and determine where the development broke down. - Missions -- Air and Space Dominance - Desired Insights -- Highlight opportunities for increased Lethality	312-986-7274	937 656-7274		monica.poelking@us.af.mil	Air Force Research Laboratory	Monica	Poelking	Chief Strategist
255	Africa is the new frontier: Learning from recent interventions	Comparatively speaking, Africa has become the new frontier and an area in which USSOF are active or becoming more active, in particular in the Sahel and the Horn of Africa. It is a huge continent with unique challenges. This topic looks at the differences and uniqueness in SOF operations in Africa versus the Middle East, Europe, or other regions. Other considerations: â€¢ What are the greatest obstacles to SOF effectiveness in Africa, and how can they be overcome? Have other regions encountered the same issues? If not, why not? â€¢ What can USSOF learn from historical and recent French, Canadian, and British interventions in Africa? â€¢ What regional dynamics are of greatest concern? What problems cross multiple regions of the continent? â€¢ What unique logistical and operational problems does Africa present? What are the dynamics of religious and cultural conflict?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
256	Preventing, countering, and disrupting foreign fighter flow (FFF) to include the impacts of FFF returning to destabilize the home front	The steady state of FFF across and into various Geographic Combatant Command (GCC) areas of responsibility continues to be a concern, as an example, into and out of Syria. This flow has been attributed to a range of factors, including the recruiting campaigns orchestrated by violent extremist groups and the ease with which militants from the Middle East, North Africa, and Europe can access this region. The same is true of FFF across Southeast Asia and the relationship of VEOs with the FFF phenomenon. This research topic seeks to explore the antecedents of FFF with a focus on the social, environmental, and psychological factors that deter or motivate foreign fighters to join or support extremist causes in any of the regions/GCCs and across GCC areas of responsibility. What efforts have been made to deter, disrupt, and destroy these foreign fighter threats? Have they been successful? Additionally, the study should address FFF-defeat and countering- FFF operations. Other considerations: â€¢ How do kinetic operations, such as airstrikes, impact these antecedents? â€¢ How might influence operations weaken these causal factors? â€¢ What are the information environmentâ€™s most appropriate leverage points for deterring or disrupting FFF? â€¢ How do SOF identify, track, and monitor the activities of those foreign fighters that return home to do damage to the home front?	312-299-3674	813-826-3674	JSOU-CSOSR	robert.nalepa@socom.mil	US Special Operations Command	Robert	Nalepa	GS-13
257	The Unfunded Mandate and Other Acquisition Initiatives	There remains a dichotomy between lifecycle execution and emerging initiatives within the DoD. Oftentimes, new mandates are released with expectation that all active programs comply with urgency. Frequently, these expectations are incongruent with the PPBE process, limiting the ability of programs to comply and perpetuating belief that these mandates are being ignored. This study would explore recent changes in policy (e.g., Human Systems Integration, System Security Engineering, Cybersecurity) and provide alternatives on how best to launch initiatives within the PPBE structure in order to ensure both requirements and funding are properly aligned. (Value: Air Force wide improvement in planning, programming, and budgeting for overarching requirements/mandates.)		312-785-8962	AFLCMC/WKE	john.slye@us.af.mil		John	Slye	
258	AF Hiring Process	Industry and other agencies can hire much faster than the Air Force. The Air Force needs an independent body to investigate what is needed to streamline the AF hiring processes. In particular, in the hiring of scientists and engineers (S&E), we can not compete with industry, who can hire in days/weeks in comparison to months. The independent body should investigate not just the speed of the existing process but the value, and benchmark our process against industry. The study's finding could substantiate changes to current OPM or statutory requirements.	336-7966	405-736-7966	AFSC/ENR	jeffery.catron@us.af.mil		Jeff	Catron	
259	Government IP and Patents - Their Role in and Influence on Technology Transition, Commercialization, and Warfighter Impact	Major emphasis is being placed on ensuring that intellectual property generated by government in-house or contracted R&D is properly documented and protected. More specifically, government resarchers are being increasingly encouraged to seek patents for work they perform or lead. However, it is unclear whether the cost-benefit assessment for IP protection and patenting is in the government's favor. Do patents increase the probability that a government-developed technology will be transitioned; that commercialization of products using such technology will be easier or more profitable to the government; or that (for DoD-sponsored work) benefits to the Warfighter are greater or more rapidly realized for patented technologies than for unpatented ones?	785-9656	937-255-9656	AFRL/RXAN	thomas.nelson.15@us.af.mil		Tom	Nelson	
260	Product Support Business Case Analysis (PS BCA) Effectiveness	In response to DoD 5000.02, Enclosure 6, AFI63-101_20-101 charges the PM with performing a PS BCA to validate the program's product support strategy is cost effective, financially feasible, and optimizes system readiness. The AFI further states that the analysis should "begin as early as practical in the acquisition life cycle and be completed prior to MS C" and that the PM should revalidate the business case prior to "any change in the product support strategy or every five years, whichever occurs first." In compliance with this guidance, AFLCMC program offices have been executing PS BCAs for applicable programs over the last several years; however, it is unclear if the PS BCA process is providing the intended financial and operational benefits, if approved recommendations are being implemented effectively, or if the proposed revalidations cycle is set at the appropriate interval. Desired results: 1) Determine if the PS BCA policy is adding value to the decision making process and leading to implementation of optimal best value product support strategy that are cost effective, financially feasible, and optimize system readiness; 2) Determine what/if barriers exist that are impeding the implementation of the recommended/approved product support strategy; 3) Determine when is the appropriate time to complete an initial PS BCA (to include focus of the analysis) and subsequent reviews (to include the 5-year review cycle).	674-7230	937-904-7230 (937) 255-7171	AFLCMC/LG-LZ	amanda.woodruff@us.af.mil & trixie.brewer@us.af.mil		Amanda	Woodruff	Civ
261	The True Cost of Military Type Certifying a Commercially Certified System	There exists a common misconception that the USAF can simply and easily back away from an FAA Type Certificate (TC) during the O&S phase of a program's lifecycle and obtain a Military Type Certificate (MTC). This misconception does not consider that both an FAA TC and a MTC are design-based certifications that require enduring configuration control/management. This study would evaluate the feasibility and costs incurred by a program if the decision was made to convert an FAA Type certified design to a Military Type Certificate. (Value: Provides current and future commercial derivative programs a definitive cost to re-certify a system.)		312-785-8962	AFLCMC/WKE	john.slye@us.af.mil		John	Slye	
262	Is our global basing footprint suited for our emerging operational environment?	Most of our legacy bases overseas (Kadena, Ramstein, Lakenheath) owe their existence to WWII. They have remained static over the years and become a heavy logistical burden (with schools, gyms, restaurants, bowling alleys etc). In the near future, they will also become increasingly difficult to defend, and will require large investments in passive and active defensive mechanisms. Is it time then to move to a new paradigm for AF overseas basing of lighter, more expeditionary, and survivable locations?		703-697-9604	AF/A8XX	david.e.ellis2.civ@mail.mil	AF/A8	Fernando	Manrique	Mr. / Civ
266	Operational impacts of cloud computing versus C2 needs for positive control of source data.	Paper should focus on the impact software engineering pushing DoD to invest in clouding computing where positive control of C2 data may not be possible, how C2 doctrine will be affected and if traditional C2 doctrine for positive control remains operationally sound.		757-225-3366	HQ ACC/A5	john.swartz.4@us.af.mil	HQ Air Combat Command	John	Swartz	Mr.

268	Assessment of the Methodology for Determining Stressed Career Fields	An assessment of the methodology for determining stressed career fields and the associated manner in which the AF Corporate Structure is informed of the varying limitations and consequences of lead/lag time to support operational requirements. Given the disconnect between the A1 community "these are our stressed AFSs," the A4 community "we are short maintainers," and the A3 community "rated (particularly 11F) manning is a train-wreck," ... what are the processes, from accession to retention, by which, manpower is appropriately resourced, given the current and future force structure.	314-224-0404	703-614-0404	AF/A3OR	thomas.k.livingston.mil@mail.mil	AF/A3/5	Thomas	Livingston	Col
269	Understanding the Global Health Landscape to identify "trigger" events to assist in Military Medical Operation Planning and Humanitarian Operations	Research the possible connection/correlation with the spread of infectious diseases (epidemic and pandemic) and the occurrence of mass atrocity events		703 681-8171	AFMSA/SG5	Brian.d.dmccarty2.civ@mail.mil	AFMSA/SG5I	Brian	McCarty	GS-15
270	Restoring the High/Low Mixture of Forces - Developing a Analysis Based Methodology	Much force development in recent years has been towards "Cadillac systems" like the F-35, Carrier Strike Groups, and other high end systems; high-end forces with highly concentrated capability sets. Some systems with high capability are needed in the future major conflicts, but there is a canary in the coalmine with past work using Lanchester's laws and the Salvo Equations, that suggest if cost to equip is a constraints that applying national resources to a mixture of high-low forces may present a more survivable and capable force using cost as a constraint. Recent technological trends such as cheap swarm-based drones, highly networked sensor-shooters, and additive manufacturing may swing the pendulum towards fielding inexpensive platforms with "diffused capability" featuring mixed medley of a lot of single- or few-capability platforms. Is there a way to develop an analysis based method to plan for future forces recognizing cost to equip and combat effects on the dollar? A case study developed with a limited Joint mission set like Combat Air Patrol, or Close Air Support with some projected force mixtures may be revealing...?		757-225-4180	HQACC/A5	oliver.easterday@us.af.mil	HQ Air Combat Command	Oliver	Easterday	Maj
271	Development of US Air Force Fatigue Risk Management System Instruction (Policy	Human fatigue remains a ubiquitous and pervasive threat throughout the Air Force and to national security. Numerous aviation and ground mishaps cite human fatigue as causal or contributory. Human fatigue continues to plague Air Force 24/7 operations. A study by Rand, Sleep Problems and Their Impact on U.S. Servicemembers, published 6 Apr 2015, stated "Not only was it rare for servicemembers to get the recommended seven to eight hours of sleep per night, but around 31 percent reported getting five hours or less - an amount linked to an increased risk of mental and physical health problems. This rate is much higher than that reported in the general population...Somewhat surprisingly, there were few statistically significant differences in sleep problems or sleep-related behaviors according to deployment history." Multiple Air Force Instructions define duty limits to at least partially mitigate fatigue (AFI 11-202V3, AFI 11-2MDS-V3, AFI 21-101, AFI 44-119). Numerous programs and resources provide sleep physiology and fatigue management training (Aerospace & Operational Physiology, Airmen Resiliency, Safety, etc.). There have been multiple attempts to integrate policy and requirements into various career fields (i.e. maintenance, intelligence and security forces). However, there is no overarching Air Force system		703-681-7554	AFMSA/SG3/5PT	james.w.lasswell2.mil@mail.mil	AFMSA/SG3PB	James	Lasswell	Col
273	Human Capital - A Critical Look at Developing Better Thinkers	Identify the kinds of thinking required for the Air Force's effectiveness (critical, creative, and systems thinking), ways to measure our thinking skills today, and how to recruit, retain, incentivize, and develop Airmen with a tendency for disciplined thought. Background: The AF incorrectly uses the term critical thinking to cover all forms of rigorous and disciplined thinking. In fact, there are several different styles of thinking and we need to harmonize them for the most effective organization. If we say we are going to develop better thinkers, then what is our baseline? what level do we want them to reach? how will we measure that? how will we ensure the AF continues to weave rigorous thought into the operational AF and make it more than a single instruction period at PME? A recent AWC paper applied a quantitative methodology to measure the critical thinking skills of ACSC and AWC students, finding no statistically significant difference between the two populations. Furthermore, they scored at only the 35th percentile when compared to a normative group with a master's degree. This suggests that we are not developing critical thinking skills (most likely generalizable to creative and systems thinking) through officer leadership and staff experience, and that we are not very good at it in the first place.	312-493-1371	334-953-1371	LeMay Center/IN	adam.stone@us.af.mil	Air University	Adam	Stone	Lt Col
274	Implications of Middle East Diaspora on US relations with NATO/Europe	With Europe under an unprecedented Middle East diaspora, what are the short and long term implications to the US-NATO alliance? Does this diaspora have the potential to undermine NATO credibility/resolve to counter Russian behavior/aggression? What steps can the US and NATO alliance take now to mitigate/shape any negative trends driven by this diaspora?		703-697-0447	AF/A5R	david.e.ellis2.civ@mail.mil	AF/A5	David	Ellis	Mr. / Civ
275	LeMay Center -- operational issue	2) Bridging the gap between Air Force Tactics/Techniques/Procedures and Doctrine. Airmen know TTPs, but do not know Doctrine - how do we (Air Force) fix it?								
276	LeMay Center -- operational issue	6) How to make the acquisition system more effective and efficient (and timely).								
277	Correlation of cognitive and physiological metrics with Airman Performance in support of assessing Integrated Operational Support impact on mission accomplishment	Describe an approach for determining the impact of integrated operational support on mission outcomes in one or more high interest populations such as special or virtual operators. Determine what current Air Force mission outcome measures from training or operational data are available and amenable to correlation with cognitive or physical performance measures? Is current mission outcome data collected and measured in a way that allows for real-time analysis of mission progress/success or predominantly analyzed post-hoc? Do other services (USN/USMC/USA) currently conduct correlation of intra/post mission outcomes to cognitive and physical performance metrics.		937-938-2804	USAFSAM/FH	ryan.mayes.2@us.af.mil	Air Force Research Laboratory	Ryan	Mayes	Dr.
278	Are manning cuts in the Acquistion career field counter-productive for cost savings	DoD Acquisitions, like all other career fields, have been under significant manning pressure; most acquisition and base contracting centers are undermanned. At what point do manning cuts cost more than they save? Compare program performance and cost stability/increases relative to manning levels. Is the DoD paying more in poor acquisition management than it is saving in manpower costs?		801-777-5781	AFNWC	dylan.monaghan.1@us.af.mil	Missing Organization	Dylan	Monaghan	Maj
281	Unintended Consequences that Modernizing the Military's Retirement System Will Have on Physician Retention Rates Within the Military Health System	Physicians already receive large professional pay bonuses and yet we have trouble retaining them past their initial commitment. With the ability to leave the service with a significant TSP balance, will we see even lower physician retention rates? Will the professional pay have to be further increased to retain physicians?		801 586-9516	75th Medical Group	jeffrey.cook.3@us.af.mil	Missing Organization	Jeff	Cook	Lt. col
286	What Impact Does the Air Force's Lack of Family Practice Physicians Have on Patient Safety	As the Air Force Medical Service struggles with retaining Family Practice Physicians, one of the answers is to hire healthcare extenders (Nurse Practictioners and Physican Assistants). Although extenders are very capable, they are not physicians. Will this have an effect on patient safety?		801 586-9516	75 MDG	jeffrey.cook.3@us.af.mil	Missing Organization	Jeff	Cook	Lt. Col
287	Patient management strategies for medical operations in denied environments	Considering the potential for decreased patient survivability and decreased advanced surgical trauma care, conduct research and analysis on potential expectations, ethical dilemmas, and patient management strategies for medical operations in denied environments		808-388-8791	PACAF SGR	james.sandvig.1.ctr@us.af.mil	Missing Organization	James	Sandvig	Dr
289	The identification of toxic leadership behaviors and how to facilitate change to those behaviors.	First, providing information on how organizations and individuals identifiy toxic leaders. Second, providing individuals and organizations with information and resources for facilitating changes in those behaviors.		801-777-7500	75 ABW	linda.mckenzie_bergloff.2@us.af.mil	Missing Organization	Linda	McKenzie Bergloff	Dr.
290	The identification of bullying and other nonsexual harassment behaviors and how to facilitate changes to those behaviors.	The identification of bullying and other nonsexual harassment behaviors and how to facilitate changes to those behaviors.		801-777-7500	75 ABW	linda.mckenzie_bergloff.2@us.af.mil	Missing Organization	Linda	McKenzie Bergloff	Dr.

As of 25 Jul 2016

Air University -- Prioritized Research Topic List (Vector 4: Pursue a Multi-Domain Approach to our Five Core Missions)

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
2	Unity of Effort for National Security Space	There has been recent movement within the Department of Defense and Intelligence community to explore some level of space operational integration to better posture the United States to fight a war that could extend to space. Paper should explore such concepts as: - What is the implied requirement/benefit of integration? - What levels of integration should be on the table (ranging from information sharing, to a single, unified commander for all DOD/IC capabilities) - Is there benefit to including commercial, civil, allied participation in the concept? - What level of integration would be appropriate for commercial, civil, allied participation? - What authorities would be required to implement the concept? - What would be the downside to this type of integration? - What would be implications to PPBE? - What would be pros/cons from a terrestrial warfighting perspective--would air/land/maritime domains benefit or be harmed from this concept? - What are the greater geopolitical implications for operational integration? Would this notion drive an adverse reaction among other states? If commercial/civil/allied were included, would that change the geopolitical reaction? Would allied integration serve as a deterrent to aggression against the US or US space systems?		7036935838	HAF/A3S	Washington	TODD.W.GOSSETT.MIL@MAIL.MIL	Todd	Gossett	Colonel
8	Air Force Logistics Numbered Air Force	Enhancing AFMC Contingency Planning, Execution, Monitoring, and Control processes for more effective warfighter support" was submitted for study by RAND in 2015 and in 2012 requested a study on topic: "Reducing Risk in Operational Planning: Recognizing ACS Enterprise-Level Capabilities or Constraints and Resource Allocation Impacts." For 2016 we submit this topic as a next step. Description is a single Air Force (AF) entity that links the Logistics enterprise and provides responsive, well integrated and intelligent end-to-end Logistics Command and Control (LOG C2), across all classes of supply (total asset visibility), with intelligent and operations C2 interoperability, to deliver combat power globally, using a common operating picture. This issue is a current and enduring concern to AF senior leaders who see centralized command, distributed control, and decentralized execution as key to conducting joint operations today, in the future and understand we need to advance our C2 capabilities. Strategically, by 2035 at the operational level, AF C2 forces are planned to organize around a multi-domain operations center and the AF LOG NAF can evolve to be that center and provide the tools necessary to exercise a dynamic C2. Also, the Chief of Staff , Air Force (CSAF) has said "Unless we get better tools in the hands of our logisticians we will not WIN in highly contested and denied environments where distributed and "lilly pad" operations will be the norm. To meet the Air Force strategic guidance, the AF Logistics Board identified the AFSC/CC lead for "Multi Domain LOG C2" Capabilities and inclusion as a "top four" priority in the FY19 Planning & Programming process (CFSPs and POM). The AFSC/CC's initial assessment is that an organization and infrastructure, which does not exist today, is needed to evolve the capability as a global Logistics enterprise and this topic is the vehicle to reach what is now AF and AFMC strategic objectives. The Log NAF concept is crosscutting and aligns with AF Strategy and links to four of the five strategic vectors that identify priority areas for investment, institutional change, and operational concepts. For example, vector 2 (Global ISR): LOG NAF (C2) will receive and assess intelligent information and present best supportable options to ops to employ agile multi-domain solutions. Vector 3 (Full-spectrum capable force): The LOG NAF (C2) adds the agility and resiliency to Logistics and sustainment to provide capability across the spectrum of operations from humanitarian relief to full scale conflict. Vector 4 (Multi-Domain Approach): The Log NAF (C2) will integrate and employ capabilities operating in or through the cyberspace and space domains in addition to air capabilities. Vector 5 (Game-Changing Tech): The LOG NAF concept in itself is a game changer and will drive radical improvements in technology. That, when combined with the new approaches and organizational change, will expand or amplify the enduring effects that underpin our advantages in air, space, and cyberspace. The topic task is to deliver an "Employment Concept," which should include critical capabilities, enabling capabilities, transition from peace time ops to combat ops in multi-domains and disengagement. In addition depict Logistics NAF end state with IT architecture and interoperability with mission partners (joint, industry, etc.). The study should also inform senior leaders if a Logistics NAF is the best organizational structure, as a single entity (centralized C2), to provide intelligent end-to-end LOG C2, across all classes of supply to effectively support the warfighter. There are several disparate AF efforts addressing this topic via concept of operation papers, but no one is doing a study that will shape the entire enterprise. The Air Force is challenged to investigate and conduct studies of this magnitude, because the concept is crosscutting and tools and expertise (corporate knowledge) needed are not organic to any one entity in the Air Force. The commitment of time	339-7008	405-739-7008	AFSC/LGX		joseph.betsill@us.af.mil	Joseph (Tony)	Betsill	
25	How will airpower impacts on Operation INHERENT RESOLVE shape future operations for US and partner nation air forces?	This is a two-part question; responses to either portion support AFCENTâ€™s objectives â€" Part 1: â€œWhat has airpower impacted in Operation INHERENT RESOLVE?â€ AFCENT seeks to identify the mechanisms through which USAF support to Operation INHERENT RESOLVE (OIR) has shaped: operations against the Islamic State of Iraq and the Levant within Iraq and Syria; operations supporting Iraqi Security Forces (ISF) in Iraq; and operations against ISIL in Syria by non-Syrian Regime forces. Potential questions include: â€œHow have US and/or Coalition air operations shapedâ€¦â€ (1) ISIL ability to maneuver in Iraq? (2) ISIL basing and freedom of movement in Iraq and Syria? (3) ISF operations against ISIL in Iraq? (4) Coalition support to OIR? (5) Non-Syrian Regime forces combatting ISIL in Syria? The research goal is to identify how airpower has shaped OIR, both at the tactical and operational level, for the enemy (ISIL and associated organizations) as well as friendly forces (ISF, Coalition partners). Part 2: â€œHow will these impacts shape future US and partner nation air force operations?â€ AFCENT seeks to identify implications OIR portends for future US and partner nation air operations. Potential questions include: â€œHow will air operations in OIR shapeâ€¦â€ (1) Future joint air operations, to include strategies and tactics? (2) Future combined air operations with partner nations, to include political sensitivities based on religion, sect and/or patronage? (3) Future use of airpower in counter-insurgency or irregular-type conflicts where the US is supporting a host nation without capable ground forces and/or political legitimacy?	965-4122	803 895-4122	USAFCENT/A2	Shaw AFB	9AF/A2/Orgbox.US@afcent.af.mil	Scott	Murray	Colonel
26	Cost-benefit analysis of current cyberspace security models vs other models	The current USAF Strategy in Cyberspace is to secure information, networks, and weapon systems utilizing a layered or bastion defense model. This model has led to costly and often ineffective technical-based solutions. It has also led to security TTPs that are cumbersome, vulnerable to user error, and restrictive for information sharing. What is the potential risk/reward of alternative strategic concepts for information security like deterrence, deception, and maneuverability? For example, logistics security relies on manueverability and unpredictability. Force Protection creates constantly changing security posture through Random Anti-terrorism Measures. In both cases the goal is to increase the OODA (observe, orient, decide and act) Loop of the adversary while reducing the OODA Loop for those that provide security. Both models accept a higher level of risk in some dimensions, but the rewards have been substantial with reduced frequency and cost of security breeches. Is it possible that these or other security models could provide a better model for security in cyberspace?		937-257-2869	HQ AFMC/A2		daniel.atkins@us.af.mil	Daniel	Atkins	Dr.
33	Viability of Trusted Manufacturing for DoD Space and Cyberspace Infrastructure	Faulty and/or counterfeit components in space and cyberspace not only have a detrimental impact to operations within their domains, but are additionally very costly to detect and replace. Problem Statement: Faulty and/or counterfeit components in space and cyberspace not only have a detrimental impact to operations within their domains, but are additionally very costly to detect and replace. Task: Explore the need and utility of trusted manufacturing of components for use in DoD systems, specifically those which support space and cyberspace operations.		719-554-3135	AFSPC/ST	Colorado Springs	Donald.Rhymer@us.af.mil	Don	Rhymer	Lt. Col
47	Precision dependency: The impact of demand for precise, low-CDE weapons on USAF requirements developments... Are our planning paradigms right?	Current weapons and weapons delivery platform requirements are developed with Major Combat Operations scenarios in mind, and do not account for the type of warfare weâ€™ve fought (to include the CIVCAS mitigation, CDE concerns, and elevated Target Engagement Authority). What impact does this have on the future inventory for the USAF? What do we risk and gain with an alternative approach? This would aid in ensuring the COCOMs and Air Components are properly resourced for a range of contingencies, and would inform decisions/reflections on our current way of war.		803-895-3430	AFCENT A3/A3TW	Shaw AFB	matthew.mccarty.1@afcent.af.mil	Matthew	McCarty	Lt Col
52	Shared Situation Awareness in Cyberspace	How should we define shared situation awareness in cyberspace and what is itâ€™s importance to defense of the AF core missions, weapon systems, mission systems, and what mechanisms are best suited to aggregate SSA and then share it with those who require it? Are our current DCO weapon systems optimized to contribute to SSA or should we re-envision them?	719-554-6002	719-554-6002	HQ AFSPC/A2/3/6WD	PETERSON AFB	william.mcculley@us.af.mil	William	McCulley	Lt Col

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
64	Automated systems for RPAs?	Should the AF go w/ auto takeoff and landing for MQ-1/9s?	260-4292	571-256-4292		Washington	travis.a.burdine.mil@mail.mil	Travis	Burdine	Lt Col
72	Efficiently Integrate Space and Cyberspace	Research will identify cost savings and mission effectiveness gains that could be achieved by efficiently integrating space and cyberspace within AFSPC and subordinate organizations. It will identify commonalities that could be leveraged, including those that may be associated with: defending operational systems, maintaining situational awareness, training and retaining personnel, organizing, acquisition and technology development, command and control, and force enhancement. Although space and cyberspace have been defined as two distinct domains, space and cyberspace capabilities and operations have substantial commonalities (e.g., reliance on networks and net-centric operating concepts, extensive presence of threats, generation of non-lethal effects, support to kinetic operations). Thus, intelligent integration of space and cyberspace could result in significant improvements in operational effectiveness and/or cost savings. AFSPCâ€™s recent assumption of authorities and responsibilities as the lead cyberspace MAJCOM and its traditional role as the AF space MAJCOM present both challenges and opportunities to lead the integration of space and cyberspace capabilities. Opportunities exist to improve net-centric situational awareness, enhance the protection and defense of space and terrestrial networks, and improve the ability to generate offensive non-lethal effects. This proposed research should identify areas where integrating AFSPCâ€™s management of the space and cyberspace mission areas is likely to generate increases in operational effectiveness or cost savings. Potential candidate integration areas could include one or more of the following, based on sponsor guidance: operating concepts, command and control, technical capabilities (offensive, defensive, situational awareness, force enhancement/support), acquisition approaches, human capital management, assessment approaches, organizational strategies, basing, maintenance, international engagement, leadership priorities and vision, policy and strategy.	312-692-9198	719-554-9198	AFSPC/A8XP	Peterson AFB	LEE.CORNELIUS.2@US.AF.MIL	Lee	Cornelius	GS-13
98	Examine the unique challenges to C2 when functional missions cross domains.	Many space operations missions use communication links to accomplish the mission; USCYBERCOM is tasked oversee all things cyber (i.e., communications links). Research should answer: where does space operations "stop" and cyberspace operations "begin"? Who takes the lead / who takes command where they meet? When the two conflict, which mission area has precedence?		719 554 - 7951	HQ AFSPC/A2/3/6OP	Peterson AFB	nia.bluford@us.af.mil	Nia	Bluford	Maj
99	Space and Cyber Cross-domain Synergies	The 2011 National Security Space Strategy specifically calls for exploring cross-domain solutions for capabilities that are currently delivered from space. However, cross-domain operations may offer more than simply an alternative means to deliver capability. Operating in multiple warfighting domains simultaneously can create synergistic effects. These effects are well understood in the conventional warfighting domains and the synergistic effects of combining space or cyber with land, air and sea are well appreciated. However, the effects of combining space and cyber operations are as yet largely unexplored. Areas for consideration: â€¢ What does cross-domain synergy (CDS) mean to your Service (as it relates to space and cyber)? o How does space power contribute to cyber operations? o How does cyber power impact space operations? â€¢ Do you see cross-domain synergy as a capability optimized for the A2/AD challenge, or is it something that is relevant to a broader set of challenges and that the Joint Force should integrate across the force as a matter of course? â€¢ What does CDS do for the joint force? â€¢ What are the attributes of a force that is able to conduct space and cyber cross-domain operations? â€¢ Are joint forces capable of conducting cross-domain operations today? â€¢ What changes to doctrine, organization, training, materiel, leadership and education, or personnel and facilities (DOTmLPF) could enhance capabilities through CDS?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
100	How might the Air Force realize "multi-domain aopproaches" described in A Call to the Future and the Strategic Master Plan?	Multi-domain approaches, as described in A Call to the Future and the Strategic Master Plan, imply the seamless integration of air, space, and cyber capabilities to accomplish the five core Air Force missions. What technology investments should the Air Force consider to advance multi-domain approaches? What organizational models would best enable successful multi-domain approaches? How should the Air Force present forces for multi-domain approaches to joint force commanders?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
101	Space and Cyberspace Domains	Space and cyberspace domains are becoming increasingly contested, as alluded to in the comments by CDR AFSPC, Gen Hyten, since he took command. These domains should be viewed as warfighting domains that could potentially be supported by, rather than supporting, the traditional warfighting domains. How does the AOC need to evolve to better incorporate space and cyberspace into its operations and provide C2 of space/cyberspace when they are the supported domains? Does there need to be a new construct to C2 space and cyberspace and coordinate with other domains the way the AOC C2s and coordinates Air operations?	312-692-7633	719-554-7633	AFSPC/A5XC	Peterson AFB	randall.gardner.1@us.af.mil	Randall	Gardner	Major
131	Flying schoolhouses	Should the AF continue down the path of heavily contracted out flying schoolhouses (C-17 for example) especially for RPAs (soon to be largest MWS in AF).	260-4292	571-256-4292		Washington	travis.a.burdine.mil@mail.mil	Travis	Burdine	Lt Col
151	Where and how should the integration of air, space, and cyber occur?	Much is written in the Air Force Future Operation Concept (FOC) and the Air Force Strategic Master Plan on the integration of air, space, and cyber, but little is proffered on the where and how it can or should be accomplished. Command and Control, a core function of the Air Force, plays a central part in synchronizing the domains while at the same time raising numerous issues on how to achieve this FOC goal. This research should examine how planning and execution is done today and extrapolate to where and how warfighting domain integration can and should occur. Will the actions of a plans division in an Air Operations Center (AOC) be the foundational nexus of effects integration for multi-domain operations? If not there, then where and how? Some may argue that the Target Effects Team and the Master Air Attack Planning (MAAP) Team are now the central coordinating point in an AOC to achieve our current level of domain integration, but even the name of the MAAP Team shows our propensity to kinetic actions. With doctrinal concepts of owning and gaining commands and supported and supporting commanders, the integration of effects from numerous â€œsuppliersâ€ becomes more convoluted. For example, will a satellite or a cyber capability ever CHOP to a supported commander? If not, then how can a supported planner be given authority to commit assets to produce a truly integrated tasking order? There are other competing pressures as to the â€œhowâ€ of this problem when viewed across the doctrine, organization, training, material, leadership, personnel, facilities, and policy (DOTMLPF-P) equation. This research may be remiss should it dwell on any one area at the expense of others. For example, while doctrinal and organizational aspects could be examined in light of supported and supporting roles in joint operations, they are only two areas in â€œtensionâ€ across DOTMLPF-P. Likewise, while material solutions may beckon a solution, the pursuit of a â€œkiller appâ€ that is not supportive of the other competing pressures in DOTMLPF-P may be a non-starter. What may be more insightful would be to examine what technological shortcomings today, if any, prevent an integration capability. Is there really any material barrier? Are there examples of consumer technology that could be adopted? For example, is a social media-like solution a possibility as we â€œcrowd-sourceâ€ the supported MAAP from a pool of supporting air/space/cyber capabilities and their subject matter experts that are spread across the globe? Ideally, using the scientific method, the researcher should pose a hypothesis as to where and how multi-domain integration will occur and then prove or disprove the hypothesis. However, in this situation, we seek to understand the competing pressures. As such the initial hypothesis will naturally morph as additional material is discovered during research.		315-330-4175	AFRL/RI	Rome	robert.mchale.1@us.af.mil	McHale	Robert	Civ
192	Increases in RPA CAPs with less manpower per CAP	How can the AF get more RPA CAPs with less manpower per CAP (automation, multi aircraft control or Monitored Transit Operations etc)	260-4292	571-256-4292	HAF/A3OI	Washington	travis.a.burdine.mil@mail.mil	Travis	Burdine	Lt Col
193	Enduring presence in AFG: do we need to keep BAF open for longer than currently planned?	With the ever changing climate and uncertainty in AFG (and in all likelihood, GIROA will request continued US support beyond our current commitment), does it make sense to plan now for an enduring presence at BAF?	965-5802	803 895-5802		Shaw AFB	jeffrey.fallesen@afcent.af.mil	Jeffrey	Fallesen	Colonel
194	Advanced Airman Assessment and Mission Alignment Process to support USAF's Future Operating Concept of Multi-domain Operations	Propose an advanced selection process to enhance Airman assessment, selection, mission-alignment, mission readiness, and retention. Give consideration to the recent advancements over the past decade in psychological/psychiatric assessment and modeling, molecular and biological sciences, advanced training capabilities, nutrient research, etc. Starting with the current AF selection process as a baseline, estimate the benefits/return on investment of the proposed process; and identify major issues that need to be considered / addressed in order to adopt the new process.		937-255-3784	711 HPW/CL	Wright-Patterson AFB	nancy.kelley-loughnane.1@us.af.mil	Nancy	Kelley-Loughnane	Dr.

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
263	Federated, rotationally manned operations: The impact of AFCENT C2 structure on operational effectiveness.	What impact, positive or negative, does USAFCENTâ€™s C2 and manpower structure have on the Componentâ€™s operational effectiveness? This would inform USAFCENT decisions on whether to keep a split staff, to inform efforts to gain more permanent manpower (versus 179-day AEF) on the staff, and investigate the impact of the structure on roles & responsibilities between the AFFOR staff and CAOC staff. This research could be applied to other C-NAFâ€™s exploring a similar C2 and manpower structure as part of their theater operations.	965-3430	803-895-3430	AFCENT A3/A3TW	Shaw AFB	matthew.mccarty.1@afcent.af.mil	Matthew	McCarty	Lt Col

As of 25 Jul 2016

Air University -- Prioritized Research Topic List (Vector 5: Continue the Pursuit of Game-Changing Technologies)

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3	Operational Contract Support (OCS)	OCS is a critical component of total force capability. Across Defense components and functional areas, we share responsibility for OCS readiness. A plan must be implemented to shape the work which must be done for the joint force to depend on OCS throughout the range of military operations. OCS spans numerous functional areas and all phases across operations. It can be a decisive factor in major combat operations; irregular warfare; and stabilization, reconstruction, and transition missions. Listed below are attributes which may assist in an effective implementation of OCS: - OCS comprises the planning, synchronization and integration of contracted support, contractor management, and contracting in a geographical combatant commander's theater, and when directed in a joint operations area (JOA). - The overall result will be more responsive, effective, and accountable contracted support to the Joint Force Commander (JFC). - Leaders must routinely consider the risks, benefits and implications of contracted support when planning, executing and assessing all phases of operations. - Commanders will operate in a future security environment characterized by constrained military budgets, reduced uniformed capability and capacity, economic uncertainty, and increased competition for resources. - This concept proposes OCS as an essential part of an affordable force mix where contracted support will be rapidly integrated into military operations and will be as accountable and responsive as military forces. - OCS JC solution framework will significantly provide benefits via a reduced military footprint; optimized capabilities with increased cost consciousness; more agile transitions between operational phases; improved operational risk assessments and mitigation measures associated with contractor support; improved requirements management; improved contract management planning; more responsive contracting; and greater accountability in managing contractors and the associated financial processes. Research Goals: 1. Develop and explore ideas for the need for OCS, while obtaining buy-in from USAF leadership and functional areas that this is a total force issue. 2. Advantages and disadvantages of OCS implementation. 3. Implementation of an affordable mixture of functional resources operated within a financially constrained environment. A fully supported recommendation on implementation amongst all functional areas of the USAF. 4. Develop recommended DOTMLP-F (doctrine, organization, training, materiel, leadership and education, personnel and facilities) changes to institutionalize OCS in the AF. 5. How an OCS planner is developed and what constitutes an effective OCS planner.	260-2400	571-256-2400	SAF/AQCX	Washington	melissa.j.applegate.civ@mail.mil	Melissa	Applegate	Chief, Contin/Frc Mgt Div
4	Future High-Low Weapons Mix -- Capability/Quantity Optimization	Future Anti-Area/Area Denial (A2/AD) scenarios stress current tactical reconnaissance-strike capabilities to meet campaign objectives. Successful future counter-A2/AD capabilities will likely involve an optimized mix of capabilities that are manned and unmanned, stealth and EW, stand-off and close-in, as well as precision and wide-area in nature. Key drivers in these scenarios include: a large anticipated target set, costs associated with fielding and stocking new weapons systems, and the necessity to attack across the enemy A2/AD kill chain in time and space. Given these drivers, developing, procuring, and employing the optimal mix of munitions becomes critical. In the munitions area, various future concepts include hypersonic air-breathing cruise missiles, tactical boost glide weapons, supersonic cruise missiles compatible with F-35 internal carriage, GBU-X, swarming hunter-killers, and more. This proliferation of potential munitions types creates a conundrum of determining what would be the best mix to pursue and in what quantities based on reasonable price points. The purpose of this study would be to explore the tradespace of future weapons mixes to identify the most promising in terms of types, quantities, and costs so as to better guide S&T and RDT&E investments that produce a viable counter-A2/AD capability at an affordable overall cost. Short of that, identification of the salient analytical characteristics (most insightful measurands, proper scenario vetting/selection, sensitivities, etc.) would be highly useful.		937-656-2808	AFRL/RQ	WRIGHT PATTERSON AFB	arthur.huber@us.af.mil	Art	Huber	Col
5	Operationalizing the Combat Cloud	Determine future Combat Air Force capability requirements and employment considerations to support the full range of military operations		757-225-8371	HQ ACC/A3	JBLE	acca10oOperations@us.af.mil	Russell	Vieira	Mr.
6	What are the Air Force's counter-small unmanned air system strategy and regulatory approaches, and how can they be improved?	The objectives are to: 1) describe the Air Force's current strategy and regulatory approaches in an area with fast-breaking technology and a growing, but uncertain threat, and 2) propose approaches that account for likely technology changes, and domestic (local, state, federal), foreign, and international law. [Primary POC: Mr. Charlie Williamson, SAF/GCI, 703-693-9292, charles.w.williamson12.civ@mail.mil]		703-697-0883	SAF/GCI	Washington	craig.a.smith5.civ@mail.mil	Craig	Smith	SES, Dep. General Counsel
7	Innovative cyber resiliency approach	Electronic devices are susceptible to malicious manipulation. The manipulation could disclose, deny, deceive, disrupt, or destroy the electronic device or anything the device is connected to. Existing solutions to protect electronic devices from the outside using a multi-layer defense approach but not the inside. Consider applying systems engineering processes and appropriate confidentiality, integrity, and availability levels to achieve cyber resiliency from an inside out perspective.		703-697-0447	AF/A5R	Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ
9	Cyber Key Terrain for the Joint Force commander	what is it, how do you seize or defend it?		703-695-5426	AF/A3CO/A6CO	Washington	michael.p.mahan3.mil@mail.mil	MICHAEL	MAHAN	Lt Col
10	Military Operations and National Policy for Cyberspace	identify gaps and challenges in our nation's approach to using cyberspace for military operations and policy recommendations to improve our ability to defend the nation		703-695-5426		Washington	michael.p.mahan3.mil@mail.mil	MICHAEL	MAHAN	Lt Col
11	Offensive Cyberspace Operations for the Air Force	should we have an "Airmindedness" to how we approach OCO; implications (force structure, equip, training, force presentation, service resourcing) and recommendations on how to do or not do it		703-695-5426		Washington	michael.p.mahan3.mil@mail.mil	MICHAEL	MAHAN	Lt Col
15	C2 Operational impact of 5th generation platforms reporting in SAP/SAR domain	C2 Operational impact of 5th generation platforms reporting in SAP/SAR domain. Paper should focus on operational impacts in the C2 community where SAP/SAR is not employed, nor operators cleared for this information. Paper can consider impact on rising number of beyond secret clearances required to implement as 4th gen and earlier systems retire and are replaced by newer platforms.		757-225-4145	HQ ACC/A5	Hampton	John.swartz.4@us.af.mil	John	Swartz	Mr. (GS-13)
16	Combat Cloud and the Air Force's role as Services provider	As part of the development of the Combat Cloud concept, should DoD and Service cyber assets retain a services provider role or transition to the role of services consumers in a cloud enabled environment? We are looking for an optimal approach determined from a set of possibilities of how to have the benefits of cyber services as we move to a cloud architecture.		757 764-6272	ACC/A6	JBLE	hugh.way@us.af.mil	Hugh	Way	Mr.
19	Tactics and Procedures Development for Long Range Cruise Missiles	The Air Force Science and Technology (S&T) community is developing several technologies that could provide options for improving the speed, range, and flexibility of future weapons. These include low cost and hypersonic cruise missile technologies which will allow users to engage targets at long range, and will require new tactics and procedures for employment. Hypersonics are one of the game changers that could provide high-speed options to engage time sensitive targets, while improving the survivability of Air Force systems. These systems can be boosted to hypersonic speeds and fly to the targets powered by an airbreathing engine, or boosted and then glide to targets. Recommend student teams be assigned to develop strategies, tactics, and procedures for employment of these new weapon technologies. Each need a requirements analysis and development of concept of operations for a variety of scenarios. They should work with the Air Force Research Laboratory to understand the capabilities of these low cost and hypersonic cruise missiles.		571-256-0329	SAF/AQRT	Washington	john.j.pernot.civ@mail.mil	John	Pernot	Dr.

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20	Proliferation of Global Navigation Satellite Systems (GNSS), Pseudolites, and Beacons	What policies, if any, should the U.S. implement to manage the proliferation of GNSS systems, and especially the proliferation of air and ground-based pseudo-satellites (pseudolites) and positioning beacons? GNSS systems with at least some satellites on-orbit include GPS, GLONASS (Russia), Galileo (EU), and Beidou (China). Regional satellite navigation systems underway include QZSS (Japan) and IRNSS (India). These systems are being augmented by air and ground based pseudolites and positioning beacons including the Locata system being deployed on Air Force test ranges, and Japan's Indoor Messaging System (IMES). Pseudolites and beacons may be widely proliferated, especially for indoor use. Questions to consider include: â€¢ What policies should be developed concerning spectrum use, including: o Use and issuance of pseudo-random noise codes o Incorporating message or other data capability into navigation signals o Compatibility/interoperability standards? o Spectrum bands appropriate for use by pseudolites and beacons for various applications â€¢ Which capabilities should DoD explore further for possible use and why? â€¢ How does the need for coalition interoperability affect these policies? â€¢ What are the advantages and disadvantages of incorporating various allied (or potential adversary) GNSS signals into U.S. GPS user equipment?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
21	LeMay Center -- operational issue	7) Threat Swarming (air and maritime) - is the threat real, and do we have an effective strategy to mitigate that threat?								
22	What are the strategic, operational, and policy implications and boundaries of an Autonomous Loyal Wingman (ALW) and supplementary UAS/autonomous weapons concept?	The objective of this research is twofold. The first goal is to determine the strategic and operational implications of the automation of an ALW teamed with small unmanned aerial systems (UAS) assets designed to complement a manned fifth generation fighter. The second goal is to uncover the policy boundaries associated with the prosecution of adversary targets using autonomous weapon systems operating in the ALW concept. For this topic, autonomy is defined as â€œthe ability to function as an independent system, unit or element over an extended period of time, performing a variety of actions necessary to achieve predesignated objectives while responding to stimuli produced by integrally contained sensorsâ€[1]. This research shall consider the strategic, operational, and policy implications of the automation of an ALW teamed with small unmanned aerial systems (UAS) assets designed to complement a manned fifth generation fighter. While no AFRL resources are anticipated to be required to complete research for this proposed topic, AFRL personnel anticipate a 1-2 day trip to Maxwell AFB to assist faculty members and students in further refinement of this topic. Secondary POC: Lloyd Clark, AFRL/RYAA, (937) 713-8291, lloyd.clark.2@us.af.mil		937 713-8585	AFRL/RYAA	Wright-Patterson AFB	marshall.haker.2@us.af.mil	Marshall	Haker	Dr.
23	How should the Air Force prepare for the proliferation of Remotely Piloted Aircraft?	The proliferation of cheap RPA technology provides any actor with access to off the shelf RPA capabilities that could disrupt military operations. These capabilities will challenge the air component's ability to deliver air superiority to joint force commanders. What types of counter-RPA capabilities should the Air Force invest in to address this issue? What would be viable concepts of operations for countering the adversary RPA threat to air superiority?		703-697-0775	AF/A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
27	Achieving the right balance between real and synthetic flight time. Advantages, disadvantages and side effects of the extensive use of flight simulators for pilot training and mission/combat readiness.	Air Forces around the world are constantly relying on synthetic flight training. This increasing trend is directly linked to shrinking budgets not allowing the same level of live training that Air Forces had always experienced. Moreover, while the use of flight simulators allows for more complex scenarios (sometimes impossible to perform live), taking this practice to the extreme might induce unexpected results on flight crews (not exposed to real flight condition as they used to). The scope of this research is to give an answer to the matter of finding the right balance between live and synthetic flight time using objective criteriaâ€™s thus exploring advantages and disadvantages of both type of training and potential side effects of the extensive use of flight simulators.	555-555-5555	555-555-5555	OF-4	Roma	luca.gargiulo@am.difesa.it	Luca	Gargiulo	LtCol
30	AF Operations in the Future Megacity	Within the next 20 years, the US may be required to conduct operations within large urban environments. This may require AF forces to conduct operations in support of joint requirements. This study should examine the range of activities the AF may be required to support and the capabilities required to perform AF operations in the future urban sprawl known as the megacity. Specifically, the following are areas for consideration: What capabilities are required to conduct AF operations in the urban environment? Can the AF conduct,mobility, precision strike, C2, and/or PR in an urban environment? What potential new missions should the AF examine to support these future operations?		850 884-7181	AFSOC/A8X	Hurlburt Field	billy.montgomery.3@us.af.mi.	Billy	Montgomery	GS-14
31	The Future of Organic Supply Chain	The Air Force's future organic supply chain will be shaped by the sustainment decisions made today for weapon systems such as the KC-46, F-35, T-X, J-STARS recap, and LRS-B among others; therefore, a RAND study is recommended for Air Force logistics leaders to plan the supply chain business processes, capabilities, and infrastructure today to respond to future SCM demands. If the outsourcing of SCM that started in the 1990s continues, the organic supply chain will become obsolete or at a competitive disadvantage when the legacy weapon systems, which constitute the bulk of organic supply chain business, eventually retire. The retirement of legacy weapon systems, coupled with continued outsourcing of SCM, will ultimately render the organic supply chain working capital fund unsustainable. It is imperative we formally display the impacts and aggressively communicate or mandate actions to prevent the organic and/or core supply chain demise. Ref: White Paper, The Future of the Air Force Organic Supply Chain, 15 Oct 2015, Captain Joe Mercurio	339-3708	405-739-3708	AFSC/LXGB		shannon.wagner.1@us.af.mil	Shannon	Wagner	
32	The Future of Proximity Operations in Space	Rendezvous and proximity operations (RPO) are specific processes where two resident space objects are intentionally brought close together for operational purposes. Such operations pose a safety concern as well as raise the specter of adversary interference with our critical space assets. However, proximity ops are poised to expand to multiple government and private sector entities pursuing a variety of applications. In the future we will likely see on-orbit activities such as satellite servicing (repair, refueling, and station-keeping/orbit adjustment), debris removal, robotic assembly of structures, cooperative distributed systems, and operation of habitable facilities for research and industrial purposes. Future space development will undoubtedly see increases in the frequency and sophistication of RPO. As proximity operations become routine we will likely see an operational environment in which the high sensitivity of this activity will seem increasingly out of place. At the same time, the recent strategic portfolio review for space calls for resilience and agile defense in an environment of evolving threats. Questions to consider: â€¢ What are the national security space implications of increasingly common RPO, and how could we mitigate risks? â€¢ Which types of proximity operations are of greatest concern, and how could they be detected, monitored, and if necessary, discouraged? â€¢ How should national policies and international agreements evolve to accommodate a future in which numerous global players are actively engaged in proximity operations? â€¢ Are there lessons to be learned from the gradual loosening of restrictions in other high-sensitivity space activities, such as high-resolution commercial remote sensing?	7036147725	7036147725	SAF/SPX	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
35	What are the Challenges in Integrating 5th Generation Air Power Capabilities in to a Seamless Force?	The USAF and RAAF (and other western Air Forces) have either begun the process of introducing fifth generation air power systems, or have (USAF F22) done so. Fifth generation air power systems provide revolutionary capabilities that will require, inter alia, transformation in concepts, organisation and personnel training and education to ensure these capabilities are used to best operational effect in a future fully integrated force. These same western Air Forces will continue to operate legacy systems in some cases for decades to come. There will therefore be significant challenges in integrating fifth generation air power capabilities such that a seamless, secure and fully connected joint force is developed, which fully caters for and integrates the capabilities of legacy systems. The aim of this research topic is to better understand the challenges inherent in fully integrating fifth generation air power capabilities, and to identify solutions to better enable the required transformation in the Air Forces concerned.		334 953-3916		Canberra Airport	Sanu.Kainikara@defence.gov.au	Sanu	Kainikara	Doctor
36	Additive Manufactoring (Incorporate new technology into the logistics and maintenance community)	Develop a sound policy / practice of developing new technology and required policy, training, certification and documentation of implementation and execution. Link AFI21-102, AFI21-101, and AFI63-101 requirements into Life Cycle guidance and policy so new technology becomes a viable process for depot and field level repair with clear direction on how technology is used, and technical guidance and training is meets users needs for safe execution.		937-257-1270	HQ AFMC/A4F	WPAFB	robert.eardley@us.af.mil	Robert	Eardley	Mr.

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38	The Current State of Total Exposure Health: Tech, Science, and Policy	Total Exposure Health is a strategic initiative that integrates workplace, environment and lifestyle exposures into improving â€œHealth Situation Awareness". A new healthcare infrastructure to be defined and built that integrates ALL exposure data (workplace, environment, and lifestyles) into the clinical record, advances delivery of healthcare, patient experience, health outcomes, medical surveillance, and military operations. The purpose of the AU reserach would be to identify the current state of TEH in both the public and private sectors as it relates to -- Precision Medicine â€" Optimize preventive strategies with focus on the individual (unique & targeted) to better organize, train and equip a healthy force -- Advances Epidemiology & â€œBig Dataâ€ The current use of individual exposure data from wearables/sensors using advanced informatics to improve global health/operations -- Research & technology - Sensor development, rapid ID of unknown threats and low-level exposure biomarkers in human genomics in real-time; enhancing the human weapon system; job placement; logistics; and command and control And current DoD or Military component policy associated to bio surveillance and population and personalized health with near and future projections. The research will be used for immediate CONOPS development.		703 681-7626	AFMSA/SG3PB	Fall Church	Richard.t.hartman3.ctr@mail.mil	Richard	Hartman	Chief Health Strategist
39	1. Small Satellite Concerns	The proliferation of small satellites (smallsats) is a growing problem for the national security space community. In 2013, there was a 269% increase in the launch of 1kg-to-50kg smallsats over the previous year. Substantial annual growth in numbers of these satellites is projected to continue, based on existing programs and announced plans of developers. By one estimate, between 2,000 and 2,750 smallsats of this size are expected to be launched from 2014 to 2020. A single launch vehicle can deploy dozens of cubesats. The International Space Station (ISS) also has the ability to deploy small payloads routinely. New services, intended to be operational before the end of this decade, are being developed to place an increasing number of smallsats in orbit at decreasing cost. The growth is primarily driven by rapidly expanding non-governmental activity. Attracted by low-cost commercial off-the-shelf (COTS) technology, greater access to space via increased rideshare opportunities, a growing industrial base, and sophisticated satellite buses that are declining in cost, smallsat companies are carving out a market niche and academic institutions are embracing the hands-on learning opportunities. As greater numbers of smallsat constellations are deployed, issues of maneuverability (or the lack of it), active and passive identification, and end-of-life disposition must be addressed. The U.S. regulatory regime for these operations is still in its development stage. There is also no agreed-upon international standard or code of conduct addressing this activity. The research project should explore policy and safety considerations; identify impact, if any, to orbital debris standards compliance (nationally and internationally); assess the effectiveness of advocating and adopting appropriate international norms of behavior; and evaluate other remedies which might ease the potential space traffic management problems associated with the proliferation of small satellites in low Earth orbit.	7036147725	7036147725	SAF/SP EA-5	Washington DC	usaf.pentagon.saf-sp.mbx.saf-sp-ea4ss-ea-5-workflow@mail.mil	John	Gondol	Col
42	Adversary Capabilities within Human Genome Research	China has developed the largest, best-funded private genome research program through the Beijing Genome Institute. These publicly disclosed research capabilities hint at greater capabilities. The goal of this project is to evaluate the battlespace capabilities of adversary nations with regards to offensive or defensive human genomic research.		937-713-3018	USAFSAM/FHT	Wright Patterson AFB	richard.chapleau.1@us.af.mil	Richard	Chapleau	Dr.
44	Is the Air Force prepared to conduct operations in the future Mega City?	Topic Description: As giant urban centers or megacities proliferate, social and government conditions will likely deteriorate. In the next 20 years, US forces may be required to conduct operations in these megacities in support of US national security interests. This may require US Air Force forces to conduct activities in support of joint force requirements. This study should examine the range of activities USAF may be required to support and the capabilities required to conduct Air Force missions in the future urban sprawl known as the megacity. The UN forecasts that today's urban population of 3.2 billion people will rise to nearly 5 billion by 2030, when three out of five people will live in cities. Surveys and projections indicate that urban growth over the next 25 years will be in developing countries. One billion people, almost one-seventh of the world's population, currently live in shanty towns. In many poor countries overpopulated slums exhibit high rates of disease due to unsanitary conditions, malnutrition, lack of basic health care, high rates of crime, drug addiction, poor transportation and little to no infrastructure. By 2030, over 2 billion people in the world will be living in slums. Over 90% of the urban population of Ethiopia, Malawi and Uganda, three of the world's most rural countries, already live in slums. As these megacities grow and proliferate, there is probability unrest will rise as social and government services deteriorate. If so, large ungoverned spaces will form within the urban sprawls. Groups and organizations will offer services to disaffected populations and may serve as unelected or non-recognized governments within these megacities. Over time, these centers may become safe havens for illicit actors and activities. Ultimately, these centers could become regional concerns and threats to US national security. Specifically, the following are areas for consideration. â€ What capabilities are required to conduct Air Force operations in the urban environment? o Can the Air Force conduct the mobility mission in the urban environment? o Can Air Force conduct effective Precision Strike in the urban environment o Are current AF ISR capabilities sufficient to operate in the urban environment? o Will Air Force Special Tactics personnel require unique equipment to operate? What special training will they require? Are there any special personnel requirements; education, training, ethnicity, language, etc. o Are there special communications requirements; command and control; agile combat support; medical, and so forth. â€ What are the current Air Force deficiencies? â€ What potential new missions should Air Force examine to support the future operations?	312-579-7181	850-884-7181		Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans
45	How should the Air Force leverage its Allies and partners into the future?	Alliances and partnerships provide a multitude of stabilizing benefits ahead of conflict, including mass, political resilience, legitimacy, and strategic 'breathing room.' Many traditional allies and partners find themselves in a strategic context very similar to that of the US: increasing commitments around the globe with reduced resources for those commitments. How should interoperability among the Air Force and its Allies and partners be enhanced? To what extent should the Air Force shift from an interoperability to an interdependence mindset with its allies and partners? Is there historical precedent for doing so? What benefits can be reaped from such an approach? What pitfalls call such an approach into question?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
46	Optimized Air Force S&T/T&E Infrastructure to Meet Current and Future Needs	Numerous studies have been conducted over the past two decades assessing Air Force (and other agencies) capabilities supporting S&T and RDT&E needs. None of these have conducted any sort of detailed optimization analysis based on acquisition workload/content scenarios in order to assess where investments should be made in a resource-constrained environment to upgrade existing facilities, build new ones, AND divest of older infrastructure. Another shortfall of previous analyses is the failure to account for the differences in S&T experimentation/test versus that conducted in support of programs of record with facilities designed for these two phases assumed to be as available and cost effective as the other. Lastly, past analyses have failed to take account of the very different business models that are used in S&T as compared to RDT&E which has had the effect on many occasions of making the MRTFB largely unaffordable to S&T programs. With the above in mind, the purpose of this study would be to posit several future scenarios, assess the adequacy of the current S&T and RDT&E infrastructure going forward to meet the future requirements, create and assess alternative future infrastructure postures (existing +/- upgrades +/- new), and propose/assess alternative business models (and the necessary accompanying policy changes) to provide the optimal capabilities for the most likely future environment with hedging as appropriate.		937-656-2808	AFRL/RQ	WRIGHT PATTERSON AFB	arthur.huber@us.af.mil	Art	Huber	Col
47	Precision dependency: The impact of demand for precise, low-CDE weapons on USAF requirements developments... Are our planning paradigms right?	Current weapons and weapons delivery platform requirements are developed with Major Combat Operations scenarios in mind, and do not account for the type of warfare weâ€™ve fought (to include the CIVCAS mitigation, CDE concerns, and elevated Target Engagement Authority). What impact does this have on the future inventory for the USAF? What do we risk and gain with an alternative approach? This would aid in ensuring the COCOMs and Air Components are properly resourced for a range of contingencies, and would inform decisions/reflections on our current way of war.		803-895-3430	AFCENT A3/A3TW	Shaw AFB	matthew.mccarty.1@afcent.af.mil	Matthew	McCarty	Lt Col

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48	Benchmarking Government Technology Commercialization Strategies	Proposed project objectives: 1. Understand the Air Forceâ€™s past, current and evolving technology transfer program. 2. Benchmark how other federal agencies approach technology transfer and commercialization. At a minimum, review the efforts at the CIA (from an approach to investing), NSF, and DHS. 3. Identify changes in policy and law (FAR) that are necessary for the Air Force to approach commercialization with the intent of capitalizing on the value of the intellectual property generated from its research investment. 4. Estimate the potential Return on Investment of an innovative commercialization strategy built on the recommended policy and legal changes. The US Government funds billions of dollars in research designed to spawn development of new technologies and capabilities each year. The research covers the spectrum of maturity from basic (exploratory) to applied and near-ready for transition, and the spectrum from information, aerospace, space, environmental, intelligence, medicine, etc. Some government agencies conduct research with a view towards transitioning capabilities to either enhance existing mission systems or develop new mission systems, and do so with varying degrees of success. Some agencies also attempt to transfer technology beyond government use to spawn innovation in the private commercial sector. With the success agencies have in transitioning technology for government use, transference of the technology for private commercial use pales in comparison. Yet, there are innovative approaches being explored; principally by the Central Intelligence Agency (In-Q-Tel), the National Science Foundation (I-Corps Program), and the Department of Homeland Security (Commercialization Office). AFRL executes an annual research budget approaching $5 Billion, half of which is organically funded by the Air Force; the other is research purchased by other federal agencies. Despite various attempts to capitalize on inventory of intellectual property through commercialization of technology for private sector use, efforts have met with minimal success. Why is it a challenge for the Air Force? What are the barriers to success?		937-904-9100	AFRL/CA	Wright Patterson AFB	ricky.peters@us.af.mil	Ricky	Peters	SES
49	Adversary Capabilities within Human Genome Research	China has developed the largest, best-funded private genome research program through the Beijing Genome Institute. These publicly disclosed research capabilities hint at greater capabilities. The goal of this project is to evaluate the battlespace capabilities of adversary nations with regards to offensive or defensive human genomic research.		937-713-3018	USAFSAM/FHT	Wright Patterson AFB	richard.chapleau.1@us.af.mil	Richard	Chapleau	Dr.
54	OPIR Industrial Base Strategy	Current material of choice for OPIR sensors is difficult to manufacture, resulting in low yields and increased costs.		719 554-6606	AFSPC/ST	Falls Church	michael.bracchi2@us.af.mil	Mike	Bracchi	GS-13
59	Are Crowdsourcing-Based Approaches to Problem Solving Effective for USAF/DoD?	Our current culture and related processes are unable to exploit the larger pool of available intellectual resources to respond to our strategic national problems. The current geo-political environment is driving the Department and our partner organizations away from the conventional approach to problem recognition and corresponding risk/crisis response(s). The new nature of our situation is ever-changing, unpredictable, disruptive, and sometimes transient; this new reality induces a degree of paralysis in our strategic and critical thinking processes because of the current organizational communication methods. As a consequence, our adversaries use these constraints against us to maneuver, think, act, innovate, implement strategy and anticipate our actions faster than we can. The speed, quantity and accessibility of information has created the potential to solve problems faster and with greater accuracy. Information is no longer confined by time and geographic location, but rather by our ability to communicate with one another. Technology is erasing these boundaries, turning individuals and groups of people into mines of information resources. Are there crowdsourcing techniques, processes and technologies that can exploit this intellectual capital to improve our problem solving and decision making processes? What are the exemplary characteristics of successful crowd-based problem solving models? What are the barriers to successful application, and can/how can they be mitigated? How does a customer and the crowd participants define a successful output? What are best practices when using crowdsourcing techniques to use large populations to solve a common problem? What key functions must collaborative environments provide to enable optimal crowd/customer/facilitator performance? What are effective incentives to motivate participation and the generation of valuable outputs? The goal of this topic is to identify new problem solving techniques or methods that shorten decision cycles, increase value of outputs, retain the intellectual capital and access to contributors/innovators, and identifying the merit of outlier contributions produced during the problem solving/ideation process. An objective of this topic may be to propose a problem solving model that can be applied to the strategic issues facing the USAF/DoD which allows our forces to think, plan and act faster than our adversaries.	3346334751	3349534751	SOC/DE	Maxwell AFB	christopher.evey@us.af.mil	Christopher	Evey	Major
61	Medical Research Horizon Scouting	Identify long-range S&T opportunities such Synthetic Biology, Biomarkers, Suspended Animation, Precision Medicine and others. Scope industry for current capabilities and analyze for future trends within respective areas		703 681-8091	AFMSA/SG5	Falls Church	kevin.r.kupferer2.mil@mail.mil	Kevin	Kupferer	Maj
64	Automated systems for RPAs?	Should the AF go w/ auto takeoff and landing for MQ-1/9s?	260-4292	571-256-4292		Washington	travis.a.burdine.mil@mail.mil	Travis	Burdine	Lt Col
68	Future of neurotechnology for airman-machine teaming	Neurotechnology influence on how people understand the brain and various aspects of consciousness, thought, and higher order activities in the brain. It also includes technologies that are designed to improve brain function and allow researchers and clinicians to visualize the brain. This study should explore the future of neurotechnology as it could potentially relate to efficient and effective integration of airman (human) with complex machines.	785-8222	937-255-8222	711 HPW/CL		rajesh.naik@us.af.mil	Rajesh	Naik	Dr.
69	Mapping the Value of AF Bioenvironmental Engineering:Â Comparison(s) to Other Federal Models	Â AF Bioenvironmental Engineering (i.e., AFSCs 43E and 4B) arose from the Army Sanitary Corps to eventually build capability and capacity spanning the following constituent OPM Occupational Series: 0690 (Industrial Hygiene), 0801 (General Engineering and Architecture), 0819 (Environmental Engineering), 1306 (Health Physics), and 1310 (Physics).Â Apparently no other element of the DoD, DOE, HHS, or any other department or agency of the USG consolidates so many occupations into one career field to execute Occupational and Environmental Health (OEH), Health Risk Management (HRM), and Radiation Safety/Protection Officer (RSO/RPO) roles.Â Does the value of the Bioenvironmental Engineering model create more efficiency for the warfighter (and taxpayer) than more specialized approaches?Â How can this value best be quantified, tracked, and analyzed? Â Â		703 681-6988	Â AFMSA/SG3PB	Falls Church	anthony.j.cagle.mil@mail.mil	Anthony	Cagle	Maj
70	Non-traditional medicine (Return of Investment ROI) for AFMS	What is the return of investment on the use of non-traditional medical practices for treatment and or prevention (i.e. holistic, alternative/complimentary, acupuncture etc.)? How can this translate to improved care and readiness for the AFMS and MHS? Refer to industry achievements, international partnership nations' use.		703681-8091	AFMSA/SG5	Falls Church	kevin.r.kupferer2.mil@mail.mil	Kevin	Kupferer	Maj
90	Using GPOPS-II: Next-Generation Optimal Control Software Determine Feasibility of Unmanned Suborbital Launching, Landing, Refueling onto a Perpetual Altitude Air Carrier over CONUS	Using GPOPS-II: Next-Generation Optimal Control Software (http://www.gpops2.com/) Determine Feasibility of Unmanned Refueling of a Suborbital Vehicle via an Air-based Carrier likely at 80,000-150,000ft Perpetual Altitude (Moving or Stationary) over CONUS or International Waters via Suborbital Flights from space and to the Air-based Carrier or back to the Surface of the Earth; calculations should include the ability of Suborbital Vehicle to safely and autonomously Intercept the Air-based Carrier for refueling then transit back to orbit or descent to the surface of the earth for prosecuting ISR missions. Additionally, there should be a comparison of Suborbital Vehicle refueling at various altitudes versus traditional space launch capabilities; that is intuitively, a Suborbital Vehicle requires less fuel when launched at 80,000-150,000 ft altitudes and Suborbital Vehicle can demonstrate extreme and on-demand responsiveness for the conduct of ISR missions anywhere in the world. From a broader perspective, these calculations are to demonstrate the feasibility of the unused 80,000ft to exoatmospheric domain for strategic and tactical advantage in the prosecution of future missions; a partial exemplar exists in the conduct of missions of the X37 and the potential of future commercial suborbital flights and the ability to reduce launch costs from the surface of the earth (e.g., SpaceX recoverable primary rocket stages). If feasible, these calculations would inform the capability of a novel capability in the control of the 80,000ft to exoatmospheric domain (300,000ft) for military application.		505-846-2215	AFRL/RVES	wright patterson afb	eddy.wright.1@us.af.mil	Eddy	Wright	Dr-II
102	Is it time for a paradignm shift in managing people?	The future Air Force faces two major management challenges. The first challenge is fueled by generational change and shifts in the US economy and its workforce: how can the Air Force bolster the retention of its most talented and innovative people? The second challenge is to reward innovation and foster organizational agility: how can the Air Force purposefully integrate modern organizational design, leadership theory, and smart risk-taking to these ends? What legal and policy authorities does the Air Force possess to address these challenges? What changes in law and policy does the service require to address these challenges?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col

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103	Examine the implications and effects of adopting programs to optimize SOF human performance: Are there limits to enhanced physical and mental capabilities?	An extensive study directed by a former USSOCOM commander, Admiral Eric Olson, revealed that the current operational environment has been more difficult than operators and their families expected, leaving little time for them to adjust to the daily strains of perpetual absences. The study noted troubling consequences, with increases in domestic and family problems, substance abuse and self-medication, risk-taking behaviors, post-traumatic stress, and even suicides. The study found that SOF were frayed. Currently, there is legislative reluctance to fund USSOCOM human performance programs and infrastructure as opposed to Military Service funded programs. USSOCOM human performance efforts are currently integrated under the POTFF initiative. What are the values of SOF specific human performance programs? Should it be a stand-alone program more aligned with operational needs? Should or will the human performance initiative be considered an operational USSOCOM requirement? Why should USSOCOM spend money on such additional programs? What are the limits for the program to research enhanced or augmented physical and mental capabilities? What are the moral and ethical issues beyond optimizing mental and physical capabilities, sleep, nutrition, and resilience; as opposed to augmenting or enhancing physical and cognitive abilities through advances in biomechanics, pharmaceuticals, and genetic therapies?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
104	DE Weapons impact in 2030 on Hypersonics, Autonomy, Policy and Strategy	- How will DE weapons, hypersonics, autonomy, impact US national strategy in 2030? What policies will these technologies require? - Objective - Gain insight on top level US Strategy for DE Weapons Usage & Protection - MIssions -- Air and Space Superiority - Desired Insights -- Best area to focus limited resources to defend against DE Weapons	312-986-7274	937 656-7274	AFRL/RX	WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
105	Beyond stealth to maintain technical overmatch: What does SOF need from future/advanced technologies ("Third Offset")?	In the fall of 2014, then-Secretary of Defense Chuck Hagel announced the â€œDefense Innovation Initiative.â€ An initiative to develop a â€œthird offsetâ€ in technology (stealth was part of the second offset). The third offset is meant to give U.S. forces technological overmatch of its adversaries. Possible examples of this new offset include robotics, autonomy, miniaturization, 3-D printing, big data, and/or swarming. Innovation is not constrained to the defense industry, and the DOD may have to look to the commercial market for breakthrough technologies. What capabilities and/or advances in technologies need to occur to ensure United Statesâ€™ SOF (USSOF) maintains a technological advantage over our adversaries? How can SOF capitalize on the third offset? What are the future technology-based threats to SOF operators across the range of military and special operations? Can SOF overcome these threats? How can SOF benefit from these same technologies for operatorsâ€™ safety and effectiveness? How can SOF use recent technological advances to sustain a force in austere environments, or decrease the footprint of a force in a situation that demands low visibility?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
106	The proliferation of Unmanned Aerial Vehicles and Drone Warfare	The proliferation of cheap UAV technology gives any potential adversary access to off-the-shelf drones that could be used to disrupt US operations, challenging the air component's ability to provide air superiority in a contingency. What technologies and capabilities should the Air Force be investing in to stay ahead of this emerging challenge? Are there non-materiel solutions that lend themselves to this challenge? How might a "counter-drone" CONOP work?	227-0775	703-697-0775	AF/A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
107	What is an affordable strategy for recapitalizing the Air Force for the future?	Rebalancing to an exclusively 'high-end" force may expose the Air Force to an adversary's long-term attrition strategy. There is additional risk that high-end capabilities increasingly diverge from those of partner nations, challenging interoperability. Two principal items need to be evaluated against today's strategic context: 1. The tempo at which the Air Force transitions to a high-end focused force; 2. the balance of Air Force capabilities to provide effective airpower across a wide spectrum of operations.		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
108	How should the Air Force construct a near/far mix of capabilities for the future?	As the Air Force decreases in numbers of platforms, our global basing network may soon become unsustainable. This will force difficult choices for global posture. An analysis of the strategic environment offers more questions than answers as we consider a diverse array of challenges and potential operating locations. Some have suggested a shift away from permanent overseas bases to an predominantly expeditionary force based in the US. Consider the role of permanent and temporary overseas bases vis a vis US bases: what is the appropriate balance?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
109	Air Superiority 2030 Experimentation Campaigns	In April 2015, the CSAF chartered the Air Superiority 2030 Enterprise Capability Collaboration Team (AS 2030 ECCT) to develop capability options to enable joint force Air Superiority in the highly contested environment of 2030 and beyond. The AS 2030 ECCT recommended two areas for experimentation, detailed below. Experimentation is highlighted in the AF Strategy and Strategic Master Plan as a methodology to enable agility and explore game-changing technologies and capabilities. The AF is standing up a Strategic Development Planning and Experimentation (SDPE) Office at WPAFB that will host a small cadre to assist experimentation campaign planning and analysis. The vision is to leverage operational expertise from across domains to develop and evaluate innovative concepts through experimentation. Air University offers a unique opportunity to access high-caliber Airmen with current operational experience in an environment that provides the freedom to pursue disruptive innovation. Recommend 6 students (3 each from ACSC and AWC) be assigned to work with the SDPE Office on each of the campaigns below. Data-to-Decision Campaign of Experiments: The campaign will examine machine-to-machine options for turning data into information and knowledge, thus allowing humans to make the required decisions. Furthermore, it will examine options and opportunities for building the appropriate architectures necessary to network the AS2030 family of capabilities and leverage data analytics. An iterative series of experiments will explore innovative combinations of technologies, doctrine, operations, and organizations to achieve decisive strategic, operational, and tactical decision superiority against our adversary. This campaign will seek to identify capabilities and architectures for: â€ Secure, agile, survivable communications to meet future interoperable (Joint, Allied, Coalition) needs across the strategic, operational, and tactical forces in the highly contested environment â€ Relevant data that is discoverable and accessible regardless of source, policy, security level, distance or location in the battlespace and is reliable, and trust-worthy to warfighters and agencies at all levels Defeat Agile Intelligent Targets (DAIT) Campaign of Experiments: The DAIT experimentation campaign will focus on the most challenging targets across multiple domains. Defeating such targets will require new, multi-domain concepts to Find, Fix, Track, Target, Engage and Assess (F2T2EA). An iterative series of experiments will explore innovative combinations of technologies, doctrine, operations, and organizations to achieve decisive strategic, operational, and tactical decision superiority against our adversary. This campaign will seek to: â€ Understand capability contributions of various technologies across identified Air Superiority constructs â€ Characterize technology interdependencies across mission effects chains. â€ Understand synergistic combinations of technologies, employment concepts, and command and control regimes â€ Increase warfighting exposure and knowledge of potential enabling technologies to include benefits and limitations â€ Understand DOTmLPF-P implications of technology-enabled concepts	260-0322	571-256-0322	SAF/AQRT	Washington	jerry.r.lautenschlager.civ@mail.mil	Jerry	Lautenschlager	NH-IV
110	Does the Air Force require a next generation special operations mobility platform?	The purpose of this study is to determine whether the US requires a next generation capability to rapidly project forces globally to conduct no-fail missions in A2/AD environments. If so, the paper should recommend a concept for a capability which provides strategic reach and access; and the ability to penetrate, operate, and survive in A2/AD environments. As the Department anticipates the changing face of warfare over the next several decades, the Air Force special operations community must ask itself what single event could surface that would require the U.S. to conduct a no-fail mission - a mission so critical that failure would change our nation or damage our reputation as a superpower. The security threat to the U.S. from peer competitors, rogue nations, and non-state actors will only increase, and the challenge of the no-fail mission will not recede. The projections and requirements of the National Military Strategy, Defense Strategic Guidance and QDR all suggest that U.S. defense planners must seek new mobility capabilities to penetrate future enemy anti-access environments to execute our nationâ€™s most critical operations. Prudence requires that the US prepare for possible future adversaries likely to possess and employ a degree of A2/AD capability - the ability to blunt or deny U.S. power projection - across all domains. Moreover, a capability that could clandestinely reach strategic targets beyond the reach and capability of the MC-130J and the CV-22 could reduce or eliminate the need to roll back enemy integrated air defense systems with conventional forces. A successful penetration offers U.S. response options that might prevent escalation into major combat.	312-579-7181	850-884-7181		Hurlburt Field	billy.montgomery.3@us.af.mil	Billy	Montgomery	Chief of Strategic Plans
111	The future of 3D printing in the US Air Force	As 3D printing capability matures, what concepts and new capabilities can the Air Force leverage? A couple obvious capabilities are rapid prototyping and rapid manufacturing - but what 3D printing trends and innovative concepts can be explored/leveraged to support the SecAF's question, "How will future Air Force forces deliver responsive and effective Global Vigilance-Global Reach-Global Power in the anticipated environment of 2035?" stated in the Air Force's Future Operating Concept?		703-697-0447	AF/A5R	Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ

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112	What is the current state of Quantum Computing (QC)	When will QC become available to US companies and DoD, when will it become available to adversaries, and what impacts will QC have on Air Force/DoD encrypted systems and encryption technologies?		703-697-0447		Washington	david.e.ellis2.civ@mail.mil	David	Ellis	Mr. / Civ
113	Cloud Computing, Social Learning Environments, Quantum Computing	1. Balancing Availability of Data with the necessary Confidentiality and Integrity (referring mostly to Cloud Computing and the continuing need to have data available to multiple entities constantly and consistently). 2. Social Learning Environments and Sharing of Data Across Multiple Platforms, Devices, and Within Divergent Cultures (referring to the advance of MOOCs, social media, and other collaborative spheres. This is also applicable to AF level business and operations in that info sharing and collaboration are paramount to accomplishing tactical/strategic goals) . 3. Physicists were able to manipulate light in two different places simultaneously where they could be in two different states at two different locations. Very interesting. The experiment was also supported (funded?) by Army and AF. http://news.yale.edu/2016/05/26/doubling-down-schr-dinger-s-cat		334 953-9511	LeMay Center/WES	Maxwell AFB	joshua.sipper.1@us.af.mil	Joshua	Sipper	Dr.
115	National and International policy overview concerning transit of potentially CBRN contaminated aircraft	Recent events related to the 2014 Ebola and 2011 Operation Tomodachi contingency response operations highlight the difficulty ensuring aircraft can transit international borders and return to the United States. There are many stakeholders in the public policy regarding transit of aircraft in these circumstances. With the advent of dispersed operations in A2/AD environments, the issue will become even more complex. The objective of this research topic is to identify the relevant public policies and regulatory framework for aircraft transiting international borders, and domestically within the United States, that may be CBRN contaminated or suspected of CBRN contamination. The author is encouraged to make recommendations for future tactics, techniques and procedures to facilitate the safe transit of aircraft while complying with applicable regulatory standards.		757 764-1209	HQ ACC/SGPB	Joint Base Langley-Eustis	randolph.smith.3@us.af.mil	Randolph	Smith	Col
120	Maximizing Diversity in USAF STEM Fields	Diversity is a major focus in the Air Force today. However, STEM career fields make up a large portion of the force, including rated as well as non-rated technical specialties. Women and some minorities have historically been underrepresented in university programs that lead to accessions in STEM fields, and this presents challenges to USAF diversity goals. Research could lead to possible solutions to recruiting challenges as well as leadership and institutional methods to ensure the underrepresented demographics make the maximum possible contributions and overcome barriers to professional success.	312-260-8088	571-256-8088	HQ USAF/A3WT	Washington	william.n.pryor.mil@mail.mil	William	Pryor	Lt Col
132	How can the Air Force keep pace with technological advances?	Major force programs often take decades to advance from concept to fielding. In that span of time technology can rapidly progress, increasing the risk that the platforms and munitions we field will approach technical obsolescence soon after deployment. What legal authorities does the Air Force possess in order to accelerate the acquisition processes of its major programs? What type of authorities would be required for reform? How should the Air Force balance oversight steps in the acquisition process with timely, relevant capability development?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
158	Linking an Exposure Science Data Analytics/Informatics IMS to AF Mission Sets and Major Weapons Systems	Establishing an Individual Longitudinal Exposure Record (ILER) for members/veterans of the Armed Forces remains a major initiative for ASD Health Affairs.Â AF Bioenvironmental Engineering (i.e., AFSCs 43E and 4B) plays a key role in data collection, analysis, and entry for the ILER; and continues to shape and populate the Defense Occupational and Environmental Health Readiness System (DOEHRS).Â How does the AFMS transition from an exposure repository to an Information Management System useful in real-time analysis of mission sets and weapons systems against Bioenvironmental Engineering exposure science work?Â		703 681-6988	AFMSA/SG3PB	Falls Church	anthony.j.cagle.mil@mail.mil	Anthony	Cagle	Maj
159	Hypersonics: The Research, Development, Flight Test and Evaluation	Described by many as the "next stealth", the application of hypersonic weapons offers disruptive advantages for military forces by establishing faster target access over a wider area of operations, and enabling the warfighter to get inside the decision making loop of the enemy. Many unanswered questions exist on how best to test hypersonic weapons and validate lethality/vulnerability modeling & simulation tools (e.g., JMEMS). USAF test capabilities exist to perform parts of the kill chain, but no complete end-to-end test strategy exists for this new class of very high velocity precision weapons against threat representative targets. This study will address future flight test requirements for hypersonic technologies and systems. Hypersonics is recognized as a game changing technology. Testing has been limited to ground tests which do not capture the environment without compromises or flight testing to capture data on one or two areas of interest (X-43, X-51, HIFiRE). What is needed is reusable, low cost flight testing for hypersonic technologies akin to the X-15. An assessment is needed to review the classes of technologies (materials and structures, seekers, apertures, propulsion, etc.) and identify those technologies that would benefit from this approach. Then the study should review potential flight test vehicles such as X-34 and derivatives, XS-1, and new designs and develop recommendations for robust, reusable, low cost flight testing for hypersonics.	872-5622 785-7081	(937) 255-7081	96TW/XP & AFRL/RQH		george.williams.1.@us.af.mil; robert.mercier@us.af.mil	George	Williams	
216	Partnerships for Cloud Computing, Big Data Analytics and Cyber Threat Sharing	Research how the Air Force can utilize existing infrastructure and best practices exhibited by the government, private sector and academia in the areas of cloud computing, big data analytics and cyber threat sharing to support Air Force mission at lower costs. These items are at the forefront of many high technology related Air Force mission areas. Yet numerous gains have already been made outside of DoD. What can the Air Force learn from these best practices? Are there any existing data centers or other infrastructure the Air Force can securely tap into without having to spend funds to build their own facility? Can the Air Force share and receive unclassified cyber threats from non-DoD entities through confidential models such as the Advanced Cyber Security Center?		781-225-0387	CSEP, CISSP, Air Force Li	Hanscom AFB	tim.rudolph@us.af.mil	Tim	Rudolph	Dr.
226	How should the Air Force address test and training infrastructure modernization challenges?	Aging platforms are not the service's only modernization concern, and in some cases not even the most pressing concern. The service has made a commitment to live-virtual-constructive training to support its modernization efforts. The Air Force may need to think of its testing and training infrastructure part of the weapon systems they serve, or as weapon systems in their own right. Does aging test and training infrastructure constitute a readiness concern as well as a modernization concern as the newest platforms and munitions arrive? What tradeoffs should the Air Force contemplate to preserve or replace these vital test and training capabilities?		703-697-0775	A5SG	Washington	kelly.d.burt.mil@mail.mil	Kelly	Burt	Lt Col
243	Reducing costs by defining tailored environmental test programs for different ranges of satellite masses	This study seeks to determine an analytic method to appropriately tailor the satellite environmental testing requirements outlined in TR-RS-2014-00016. Given that satellite test programs are shaped by the complexity of the satellite, the cost of any given test, and the perceptivity of that test, a relationship should be able to be devised that prescribes the appropriate satellite testing. Previous research suggests that mass may be an effective quantitative measure of complexity, and if true, the appropriately tailored test program could perhaps be defined as a function of satellite mass.	225-3549	703-695-3549	SAF/AQSE	Washington	brian.m.flusche.mil@mail.mil	Brian	Flusche	Maj
264	Perceived risks in the use of Genetic/Genomic Information for Personalized Medicine in the Air Force	As genomic and genetic testing becomes more mainstream, there are concerns about information security and potential misuse of genetic information. There may be additional concerns on behalf of Active Duty members as the 2008 Genetic Information Nondiscrimination Act (GINA) prevents discrimination based on genetic information for employment and health coverage in the civilian population, but does not apply to members of the DoD. This study could look at perceived risks among Active Duty Air Force members with regards to genetic testing, as well as potential risks associated with Commandersâ€™ access to this information and their subsequent career progression. As a benefit, this study could provide Air Force service members with awareness on current policy and protections.		703-681-6030	AFMSA/SG#PM	Falls Church	ruth.brenner.mil@mail.mil	Ruth	Brenner	Maj

Seq #	Title	Topic	DSN Phone	Comm Phone	Office	City	Email	First Name	Last Name	Rank
265	UEWR Object Classification (OC) Improvements	The early warning sensor classification of tracks is an area where improvements are needed to more accurately characterize the objects when they are lethal (RV), or delivery system parts (tanks or Post Boost Vehicles (PBV)), or debris pieces (leftover items once RV is deployed). To date the Object Classification (OC) efforts on the Upgraded Early Warning Radar (UEWR) sensors has focused on funding large defense contractors with the implicit assumptions that the state-of-the-art is mature, they know precisely what has to be done, and with no fundamental research necessary to put the models together. These assumptions are inherently flawed, and the products obtained by funding such projects are typically financially expensive and fail to meet the desired end results or expectations. Typically current OC efforts "train" their Databases (DB) to certain selected attribute or feature sets, which work well for the simulated training sets of trajectories and complexes, for specified physics of the underlying object scintillation. Any significant deviation from the training set, or scintillation characteristics, and application to new missile complexes can render the DBs useless. Even for the same complexes, if the objects in the training set emanate from different locations and/or fall into a different part of the globe compared to the trajectories being tested, the performance can be significantly different. Maps are created in multi-feature dimensions, and then to see if the contours associated with those maps can provide distinction or separation for different types of objects. Despite best efforts, the map contours of different types of objects may not distinctly separate out even in multi-dimensions of features once all the cases are merged into a single DB. Adding algorithmic complexity in the interest of tightly mapping a selected training set can actually backfire in those cases where simpler algorithms had worked in the past. A fundamental study needs to be carried out where additional innovative features need to be evaluated to see if they can provide enhanced distinction between objects. As an example, in addition to size based features (actual features are classified), one needs to examine how those size based features vary as distance from the sensor (e.g., size divided by distance squared), or with time (e.g., size change per unit time), or tumbling rate (e.g., size variation as a function of aspect angle), or other innovative features. The current approaches also bin each track to the same feature space contour maps, without considering the interdynamics of the objects. For example, if we know that certain tracks belong to a single complex (since they perhaps originated from a single track before splitting), and if each complex is known to have precisely a single lethal object, knowing that very basic fact should allow one to devise algorithmic refinements in assigning probabilities when the underlying single map based mechanism predicts multiple RVs as part of the same complex. The current approaches have also limited the OC determination to a single thread computation. The compute power is cheap, multiple software threads can be considered on different feature spaces, each providing their results to an executive thread with probability of classification, which will make the final determination of the object type. It is entirely possible that certain threads, in less number of size based features (perhaps even in one or two dimensions) may provide very good distinction for some objects (distinction between objects would be converted to a probability scale), whereas for some objects more dimensions may be needed if the simple approach does not yield adequate discriminating results. The simple or complex calculations should be immaterial if they are running on independent parallel threads, so long as each thread is able to cater to the real time requirements of the sensors		781-225-0395	AFLCMC/HBQR		mehtab.pervaiz.ctr@us.af.mil	M. Max	Pervaiz	Dr.
272	Can autonomous software be designed and licensed like a pilot is trained and licensed?	- Today: Certify platforms and license operators (pilots). - Future: Certify platforms and license Autonomous algorithms Applies to the V&V and Certification of all near future Autonomy based DoD systems. - Investigate current processes for training autonomous system operators, identifying requirements for documenting the â€œpedigreeâ€Œof an Autonomy algorithm (in design or as it learns) as it relates to the â€œpedigreeâ€Œor â€œcompetencyâ€Œof a human operator - Identify tech gaps, social implications, military advantages, should approach be pursued within DoD	312-785-8483	937 255-8483	AFRL/RQQ	WPAFB	matthew.clark.20@us.af.mil	Matthew	Clark	Electronics Engineer
279	Innovative and Agile	- What should the USAF do to make us more innovative and agile? What policies/processes can we streamline to make our research efforts more agile?Â - Objectives -- Independent review and analysis of USAF Policies/Processes and possible suggestions to make USAF more agile. Missions -- Air Dominance Desired Insights -- Recommendations for streamlining and enhancing Productivity and Military Capability	312-986-7274	937 656-7274	AFRL/RX	WPAFB	monica.poelking@us.af.mil	Monica	Poelking	Chief Strategist
280	Training SOF for the future: Identifying skill gaps and seams	The future operating environment is defined by an increasingly interconnected global commons paired with the increasing effects of non-state actors. SOF preparing to operate within this environment are bound by fiscal constraint, decreasing resources, and manpower limitations amongst an era of expanding SOF requirements. While the characteristics of warfare within this environment will continue to evolve, what are the skills not yet currently present within special operations that are assessed as necessary for success? How can USSOCOM effectively prioritize training efforts while addressing the risks assumed with inaction? Given the likely requirement for Foreign Internal Defense (FID) and UW missions, how critical are language capabilities? How does culture and cultural intelligence play a role? What are the current training gaps, and what are the future training requirements? Should training be broadened throughout all SOF or focused on specific SOF specialties?	312-299-3674	813-826-3674	JSOU-CSOSR	MacDill AFB	robert.nalepa@socom.mil	Robert	Nalepa	GS-13
282	What impact will a low cost attritable aircraft have for the USAF for warfighting, maintenance, and for the industrial base?	The concept of a low cost attritable aircraft has implications for future US strategy and warfighting. In addition, producing these aircraft on demand using multiple sources and equipping them with a variety of low cost payloads will impact the industrial base, manufacturing, and supply chains. Furthermore, changes to aircraft integrity and reliability requirements driven by low cost attritable designs will also impact maintenance and sustainment approaches. Research on this aircraft concept should address one or more of these areas that it may impact.		937-656-7274	AFRL/RX	Wright-Patterson AFB	monica.poelking@us.af.mil	Monica	Poelking	Civ
284	Microbiome and Human Performance nexus	Investigate connections and linkages between the microbiome and human performance. Explore how microbial community influence and regulate human performance. The basis of the study should examine the claims that having the "right" microbiome make-up in the gut could have beneficial effects on your performance. Explore the role of prebiotics, probiotics and other nutritional tools to manipulate the microbiome to enhance human performance in airmen.	785-8222	937-255-8222	711 HPW/CL		rajesh.naik@us.af.mil	Rajesh	Naik	Dr.
285	The Application of Export Control Laws to Defense Research	Examine the costs and benefits of applying the International Traffic in Arms Regulation (ITAR), Arms Export Control Act (AECA), and Export Administration Regulations (EAR) laws to the products of DoD 6.2 and 6.3 research efforts. Objective: Determine whether or not these laws are being appropriately applied to various categories of Defense Research; if not then there is considerable waste of effort and lost productivity from overly restricting R&D collaboration with international and domestic commercial and academic partners		937-528-8290	RYAT		vincent.velten@us.af.mil	Vincent	Velten	
288	What is the mpact of synthetic biology and low-cost gene splicing technologies on the defense enterprise?	Carlson curve predicts acceleration of DNA read and write technologies similar to Mooreâ€™s Law. DNA is the software that controls the cell, and these technologies promise to enable complete â€œread-writeâ€Œcapabilities. Biology then becomes a programmable factory or machine. What are the implications of this emerging technology revolution from critical material supply chains to weaponization? What policies and technologies are required to ensure AF use of these capabilities?		937-656-7274	AFRL/RX	Wright-Patterson AFB	monica.poelking@us.af.mil	Monica	Poelking	Civ