



2022 SPONSORED RESEARCH TOPICS

The Acquisition Research Program (ARP) of the Graduate School of Defense Management at the Naval Postgraduate School accepts research topics from potential sponsors. These topics have been compiled to assist graduate students in locating topics for their research projects.

Topic #	Sponsored Topic
T22-041	<p>Topic: Auditing the Domestic Biomanufacturing Supply Chain for Air Force Research Laboratory (AFRL)</p> <p>Overview: Defining the biomanufacturing supply chain’s technology (intellectual property), service, and product components is necessary in mitigating disruptions to the supply chain. Information gathering is needed to identify what must be measured how those metrics can be used to create models that predict the impact of investments and disruptions. Disruptions to this specific set of supply chains would cause significant delays in the development and production of new capabilities for the Department of Defense. Further, the ability to define this supply chain will provide the foundation for a tool to define the supply chains for other emerging technologies represented by defense modernization priorities.</p> <p>Research Objective: Find a way to give Department of Defense senior leaders a thorough evaluation of what capabilities and resources compose the fermentation-based biomanufacturing supply chain in order to inform policies to sustain and secure the supply chain.</p> <p>Main Research Question: What biomanufacturing supply chain technology (intellectual property), service, and product components are necessary in mitigating disruptions to the supply chain for domestic biomanufacturing?</p> <p>Secondary Questions: What are the best tools and metrics for measuring risks of disruption and deciding on investments to counter those risk?</p> <p>POC: Mr. Wallace Patterson Program Manager, Materials and Manufacturing Directorate Air Force Research Laboratory Wright-Patterson Air Force Base, Ohio wallace.patterson@afresearchlab.com wallace.patterson@us.af.mil</p>



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RELEVANT CONTEXT

- The biomanufacturing supply chain is composed of a large network of investors, venture capital firms, research laboratories, start-ups, small-, medium-, and large-scale suppliers, and commercial/government stakeholders.
- The Department of Defense has become more interested in bio manufactured products, such as polymers, coatings, adhesives, and specialty chemicals, and needs detailed information about elements of the supply chain so it can understand what products and services are available (domestically and globally), who is producing them, what the level of 'health' of these companies and labs are, where the materials are sourced, and the available capacity of these companies.
- Having this information will allow senior leaders in the defense biotech community to put together policies and systems in place to secure and sustain the sourcing and production of high-interest bio manufactured products.
- AFRL led a 90-day snapshot of the domestic biomanufacturing supply chain that provides a top [1] level view, but they need a fuller, more detailed and comprehensive picture of what the supply chain looks like.
- In particular, the Department of Defense is interested in fermentation-based biomanufacturing, all the way from feedstock through the design, build, test, learn cycle, to scale-up, downstream processing, to final product/service delivery to a customer.

POTENTIAL BENEFICIARIES

- Principal Director - Biotechnology, Office of the Secretary of Defense for Research and Engineering.
- Biotechnology Community of Interest (COI); Defense R&D stakeholders including the Army, Navy, Air
- Force, Space Force, and DARPA; BioMADE, the Bioindustrial Manufacturing Innovation Institute

RESOURCES

- Past H4D Project Report: A Strategic Report on the Domestic Bio-Manufacturing Industry (Dist A)
- Biomanufacturing for Air Force Needs – Phase 0 Study (Dist C)
- OUSD - Biomanufacturing Assessment Executive Summary May 2021 (Dist C)
- AFRL SynBio Final Deliverable 11SEP19 (Dist D)
- AFRL Syn Bio Market Segment (Dist A)



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T21-040	<p>Topic: Analysis of DoD Ammunition Manufacturing Industry and Supply Chain</p> <p>Overview: The U.S. Army is the lead agent for ammunition production for the Department of Defense (DOD). It accomplishes this through seven plants (1 mothballed) that are Government Owned / Contractor Operated (GOCO) facilities. They are single/sole source plants meaning that each plant is run by one contractor and produces one category within the broader ammunition supply chain (Explosives vs. Casings etc).</p> <p>This industrial policy has made the ammunition supply chain highly rigid, vulnerable to disruption and with a stagnating workforce operating in “state of the art as of 1952” plants in need of modernization. This challenge is compounded by the U.S. Army leveraging ammunition Procurement accounts for other platforms (OMFV, Chinook, etc) as well as O&M requirements to include travel. The net effect is the DOD receives ~70% of the ammunition requirement that Congress appropriates every year.</p> <p>The U.S. Army would benefit from student research on this challenge in general and specific problems that arise from maintaining ammunition plant resilience that aligns with the NSS and NDS objectives as well as DOD industrial policy.</p> <p>Main Research Question: TBD</p> <p>Secondary Questions: TBD</p> <p>POC: Dr. Rene G. Rendon rgrendon@nps.edu</p>
T21-039	<p>Topic: Explore use of Civil Augmentation Program contracts to perform base operating support in U.S. during times of high OCONUS demand for support/military forces</p> <p>Overview: How can Civil Augmentation Program (CAP) contracts be used to sustain our CONUS bases and deploy all the military? We’ve become used to contracted force protection at our gates, contracted support at the dining facility, and even contracted support on the flightline. This research will dig deeper into AF/Army/Navy operations (a joint team is ideal) to assess what base operating support-integrator (BOS-I) functions could be provided by CAP contractors during a major fight. For example, if we contracted out contracting functions to a CAP, we could free up some number of military people to do the job downrange. However, the cost is high (contracting people are expensive), and the risk is moderate (contracting people may not know FAR-based contracting well enough). The goal of this research is to give a view of what CAP support in CONUS would look like to the SESs and Generals that sit on the operational contract support functional capabilities integration board.</p> <p>Research Objectives:</p> <ul style="list-style-type: none"> • Identify BOS-I functions that could be performed by a CAP. • Develop relevant metrics including performance risk, cost of the service, availability of contractors to perform the function, number of soldiers/sailors/marines/airmen freed up



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	<p>for war, etc.</p> <ul style="list-style-type: none"> Assess each function against each metric and assign a “final score” of some sort to each BOS-I function. Develop a prioritized list of BOS-I functions to contract. Present results in a way that can inform future iterations of CAP contracts (e.g., what else might we want to include in performance work statements?). <p>POC NPS: Dr. Daniel Finkenstadt daniel.finkenstadt@nps.edu</p> <p>POC OUSD(A&S): Lt Col Landale karen.a.landale.mil@mail.mil</p>
T20-036	<p>Topic: Internal Audit Capability and Requirements.</p> <p>Overview: DCMA/DCAA/Price Fighters takes 84 days on average to complete an audit with widely varied degree of quality. Long lead and low-quality audit reports greatly slow speed to award as audit re-work, additional analysis, and cross-talk of contended contract elements prolong negotiations/settlement.</p> <p>Main Research Question: What are the resources needed to complete audits traditionally tasked to DCMA/DCAA/Price Fighters?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> What kind of internal audits are the best fit (dollar threshold/renewals)? Can internal audits save time? What kind of training/experience is need for audit personnel? <p>POC: Dr. Rene Rendon rgrendon@nps.edu</p>
T20-035	<p>Topic: ALT/PALT Metric Analysis.</p> <p>Overview: Acquisition Lead Time (ALT) measures the amount of time from PR creation to requirement delivery. Procurement Acquisition Lead Time (PALT) is a subset of ALT and measures the amount of time from completed PR package receipt in Contracts to requirement contract award. These times can be difficult to measure and more difficult to track/use as a management tool in a system of record.</p> <p>Main Research Question: Are ALT and PALT being measured correctly?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> What is the start/stop milestones for ALT/PALT? How can WSS measure, tracking, and maintain ALT/PALT without existing software? <p>POC: Dr. Rene Rendon rgrendon@nps.edu</p>



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T20-034	<p>Topic: Bundling Part Number Buys.</p> <p>Overview: Part Number requirements are a challenge because they are low demand and low quantity. Pricing history and piece part support take vendors much longer than average to determine, but the urgency for parts identified by part number only can be as critical to the Fleet as NSN requirements.</p> <p>Main Research Question: Is there a contractual means to bundle part number-supported requirements by vendor, determine a price range, and negotiate price/delivery (ex. 50ea P/N's valued at \$50k, rather than 50ea proposals/negotiations- execute one award at one bundled price premium = 1 year delivery at \$75k total [to achieve savings realized in gov't labor hours and delivery lead time])?</p> <p>POC: Dr. Rene Rendon rgrendon@nps.edu</p>
T20-033	<p>Topic: Forecast Reliability Improvement.</p> <p>Overview: In FY19, the forecast reliability for WSS was between 55-60% accurate. This requires additional contract actions to respond to realized demands vs forecasted demands. This also requires additional post award actions such as modifications to reduce qtys and funding accordingly. Often vendors are concerned that they are not compensated fairly for fixed costs which are spread across the forecasted amount of units to be repaired. This causes additional rounds of negotiations and re-work in N7.</p> <p>Main Research Question: Forecasted demand is currently based off of the last 8 quarters of demand, is this the correct amount of data to be used to forecast forward?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • What data could be used to improve forecasted demand? <p>POC: Dr. Rene Rendon rgrendon@nps.edu</p>
T20-032	<p>Topic: Sole Source Environment</p> <p>Overview: Over 80% of NAVSUP contracts are sole source which presents challenges to Contracting Officers. Contractors know they are the only company capable of meeting the Government's requirement and often drive the award schedule to the very end to force the Government's hand in both price and terms and conditions. Additionally, contractors will often no-bid due to capacity or unwillingness to deal with low profits which leaves the Government with no options. At NAVSUP WSS, it takes about 2 years to qualify a contractor as a repair source, if the Government owns the technical data.</p> <p>Main Research Question: What can be done to increase competition at NAVSUP WSS?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • Is it economical for the Government to by data rights to increase the number of repair sources? <p>POC: Dr. Rene Rendon rgrendon@nps.edu</p>



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T20-031	<p>Topic: Evaluate Far 12 for PBL and Complex Repairs.</p> <p>Overview: NAVSUP WSS contracting officers are experiencing recurring commerciality determination and price reasonableness problems with several large contractors who are only willing to do FAR 12 contracts. Challenges include a refusal to provide the data necessary to determine price reasonableness or commerciality and redacting key elements of sales data on invoices claiming their rights under FAR 12 thus making the data insufficient. Conversely, can the use of FAR 12 be expanded on repairs of items where the commercial aviation process of repair is similar to that of a military aircraft (i.e. aircraft propellers, landing gear, etc)?</p> <p>Main Research Question: FAR 12 is useful for truly commercial supplies procurements, but is the Government getting value using FAR 12 on more complex PBL and/or repair contracts where the contractor is unwilling to provide OTCCPD required to adequately support a F&R price justification?</p> <p>POC: Dr. Rene Rendon rgrendon@nps.edu</p>
T20-030	<p>Topic: Research Topic: How Can the Department of Defense (DoD) Procure Consumption-based Solutions?</p> <p>Overview: When buying capabilities such as cloud-based services, contracting officers must choose between the outdated categories of supplies or services. Defense and federal acquisition are growing increasingly misaligned with practices common in the private sector, as capabilities are increasingly sold as packages of hardware, equipment, software, and labor or services. As of October 2019, Senate and House versions of the National Defense Authorization Act for FY2020 include language requiring the Secretary of Defense to conduct a feasibility study on revising the Defense Federal Acquisition Regulation Supplement to include requirements relating to consumption-based solutions.</p> <p>The pending legislation gives the following definition: “The term ‘consumption-based solutions’ means any combination of hardware or equipment, software, and labor or services that together provide a capability that is metered and billed based on actual usage and predetermined pricing per resource unit, and includes the ability to rapidly scale capacity up or down.”</p> <p>Research Objective: This research would use data from current and projected future acquisitions to evaluate the impact of procuring capabilities as consumption-based solutions. Research should identify costs and benefits of this approach, including non-monetary costs/benefits such as industry relations, as well as identify acquisitions best suited to a consumption-based model. Students are encouraged to explore acquisition types related to their areas of expertise and experience in defense acquisition.</p> <p>Main Research Question: How can instituting a consumption-based approach to acquisition enhance DoD’s ability to procure modern capabilities at market prices?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • What types of defense acquisitions are currently miscategorized as either supply or service when they are in fact combinations of the two? What evidence exists to demonstrate the cost of this mismatch? • How were recent large contracts for cloud services (e.g., Defense Enterprise Solutions, Joint Enterprise Defense) structured? Are these in line with commercial best practice? • What oversight and accountability processes would be affected by consumption-based acquisition? • What laws or regulations would need to change to allow for the acquisition of



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	<p>consumption-based solutions?</p> <p>Data Sources:</p> <ul style="list-style-type: none"> • Section 809 Panel Recommendation #43, including implementation language (Volume 3, Section 3, p. 136) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_43.pdf • “How a single update to acquisition law can support cloud adoption” https://fcw.com/articles/2019/03/18/section-809-consumption-comment.aspx • Defense Enterprise Solutions (DEOS) https://disa.mil/NewsandEvents/2018/Defense-Enterprise-Office-Solution • “GSA and DOD Award Defense Enterprise Office Solutions Cloud Contract” https://www.gsa.gov/about-us/newsroom/news-releases/gsa-and-dod-award-defense-enterprise-office-solutions-cloud-contract • Joint Enterprise Defense (JEDI) Cloud RFP <ul style="list-style-type: none"> ○ DOD’s Cloud Strategy and the JEDI Cloud Procurement https://fas.org/sqp/crs/natsec/IF11264.pdf ○ DRAFT DOD JEDI Cloud RFP https://beta.sam.gov/opp/3860a4f4fe9d9ffc31e722ece82a143c/view?keywords=jedi%20cloud&sort=-relevance&index=&is_active=true&page=1 • OMB Cloud Smart Strategy https://cloud.cio.gov/strategy/ • Defense Digital Service www.dds.mil <p>POC: Nick Tsiopanas, nicolas.tsiopanas.ctr@nps.edu & Larry Asch, lawrence.asch.ctr1@nps.edu</p>
T20-029	<p>Topic: The Potential for Online Marketplaces to Realize Efficiencies in Defense Acquisition</p> <p>Overview: Online marketplaces have become a default way to purchase commercially available goods and services, but DoD and the federal government have been slow to adapt acquisition processes to these new technologies. Congress and the General Services Administration are taking the first steps with the so-called “Amazon amendment” of the FY2018 National Defense Authorization Act. Regardless of the technology, DoD has struggled to take advantage of market efficiencies when procuring commercial items, as numerous regulations have been added to ensure proper execution of these acquisitions. This problem is extending to the procurement of services as well; the federal government conducts hiring through portals such as usajobs.gov, while the private sector leverages more robust online marketplaces such as Indeed or Monster.</p> <p>Research Objective: This research would identify types of acquisitions and/or parts of the acquisition process that would most benefit from being conducted via online marketplaces. For instance, can market research be conducted differently with online marketplaces? Could online marketplaces enhance the acquisition of helicopters as well as office supplies? Research should provide data that could be used to justify parameters of pilot programs for the use of online marketplaces in defense acquisition. Given the large scope of this research question, students are encouraged to explore a category of acquisitions related to their experience and expertise.</p> <p>Main Research Question: Are certain categories of acquisitions more suitable to a process</p>



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	<p>defined by online marketplaces? What are they, and why?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • What efficiencies can be gained in terms of time, cost, and quality? What evidence exists to demonstrate these potential benefits? • What steps can be taken now to begin transforming acquisition of these capabilities in this direction, and on what timeline? <p>Data Sources:</p> <ul style="list-style-type: none"> • Section 809 Panel Recommendation #35, including implementation language (Volume 3, Section 1, p. 7) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_35.pdf • Section 809 Panel Recommendation #45, including implementation language (Volume 3, Section 3, p. 111) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_45.pdf • Section 846 of FY2018 National Defense Authorization Act https://www.congress.gov/bill/115th-congress/house-bill/2810 • GSA Implementation plan for Procurement Through E-Commerce Portals https://interact.gsa.gov/sites/default/files/Commercial%20Platform%20Implementation%20Plan.pdf • Accenture, “Workforce Marketplace: Invent Your Future” https://www.accenture.com/t20180803t070620z_w_us-en/acnmedia/accenture/next-gen-4/tech-vision-2017/pdf/accenture-tv17-trend-3.pdf?la=en. • “The US government is the world’s largest purchaser of consumer goods. Amazon wants a piece.” https://www.vox.com/the-goods/2019/5/1/18524111/amazon-business-government-purchasing-state-city-local • “The Pros And Cons Of The Marketplace Model For E-Commerce” https://www.forbes.com/sites/forbesnycouncil/2018/12/13/the-pros-and-cons-of-the-marketplace-model-for-e-commerce/#16d5a41b5935 • 2018 National Defense Strategy https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf <p>POC: Michelle Johnson, Michelle.johnson.ctr@nps.edu & Larry Asch, lawrence.asch.ctr1@nps.edu</p>
T20-028	<p>Topic: Online Marketplaces as a Tool for 21st-Century Transparency and Accountability</p> <p>Overview: Online marketplaces have become a default way to purchase commercially available goods and services, but DoD and the federal government have been slow to adapt acquisition processes to these new technologies. Congress and the General Services Administration are taking the first steps with the so-called “Amazon amendment” of the FY2018 National Defense Authorization Act. Regardless of the technology, DoD has struggled to take advantage of market efficiencies when procuring commercial items, as numerous regulations have been added to ensure proper execution of these acquisitions. This problem extends to the procurement of services as well; the federal government conducts hiring through portals such as usajobs.gov, while the private sector leverages more robust online</p>



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marketplaces such as Indeed or Monster.

Research Objective: As commercial e-commerce portals are being developed for use in the federal government, they are challenged to balance private sector efficiencies with federal regulations meant to ensure the integrity of transactions. This research would investigate how online marketplaces can provide digital oversight and real-time information about DoD's acquisition of commercially available goods and/or services. Given the large scope of this research question, students are encouraged to explore a category of acquisitions related to their experience and expertise.

Main Research Question: What data can online marketplaces provide to increase transparency into DoD's acquisition of commercially available goods and/or services?

Secondary Questions:

- How should this data be collected, organized, and delivered to key decision makers (noting that Congress and DoD leadership use such data for different purposes)?
- What laws and/or regulations can be modernized to realize the efficiencies of digital transparency?

Data Sources:

- Section 809 Panel Recommendation #35, including implementation language (Volume 3, Section 1, p. 7)
https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_35.pdf
- Section 809 Panel Recommendation #45, including implementation language (Volume 3, Section 3, p. 111)
https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_45.pdf
- Section 846 of FY2018 National Defense Authorization Act
<https://www.congress.gov/bill/115th-congress/house-bill/2810>
- GSA Implementation plan for Procurement Through E-Commerce Portals
<https://interact.gsa.gov/sites/default/files/Commercial%20Platform%20Implementation%20Plan.pdf>
- Accenture, "Workforce Marketplace: Invent Your Future"
https://www.accenture.com/t20180803t070620z_w_us-en/acnmedia/accenture/next-gen-4/tech-vision-2017/pdf/accenture-tv17-trend-3.pdf?la=en.
- "Public Data Marketplaces and Initiatives"
<https://dataflog.com/public-data/>
- "Data Marketplaces: The Holy Grail of our Information Age"
<https://hackernoon.com/data-marketplaces-the-holy-grail-of-our-information-age-1211a6fec390>
- 2018 National Defense Strategy
<https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

POC: Michelle Johnson, Michelle.johnson.ctr@nps.edu & Larry Asch, lawrence.asch.ctr1@nps.edu



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T20-027	<p>Topic: Small Business Participation in Online Marketplaces</p> <p>Overview: Online marketplaces have become a default way to purchase commercially available goods and services, but DoD and the federal government have been slow to adapt acquisition processes to these new technologies. Congress and the General Services Administration are taking the first steps with the so-called “Amazon amendment” of the FY2018 National Defense Authorization Act. Regardless of the technology, DoD has struggled to take advantage of market efficiencies when procuring commercial items, as numerous regulations have been added to ensure proper execution of these acquisitions. This problem extends to the procurement of services as well; the federal government conducts hiring through portals such as usajobs.gov, while the private sector leverages more robust online marketplaces such as Indeed or Monster.</p> <p>Research Objective: As commercial e-commerce portals are being developed for use in the federal government, some stakeholders in federal acquisition are worried they will lose their place in the market. Small businesses, for instance, have expressed concern that they can’t compete with a potential technological monopoly run by a company like Amazon. This research would explore the relationship between small businesses and current online marketplaces, comparing those relationships to current dynamics between small business contractors supporting the federal government and/or Department of Defense. Findings could help inform the composition of online marketplaces designed to support federal agencies.</p> <p>Main Research Question: How can online marketplaces provide market efficiencies to government buyers without sacrificing competition and diversity among providers?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • How do online marketplace providers structure relationships with their suppliers/business partners? • What concerns do small businesses and other interest groups have about the transition to online marketplaces? • How can small businesses profit and benefit from changing their business processes to better align with this digital acquisition approach? <p>Data Sources:</p> <ul style="list-style-type: none"> • Section 809 Panel Recommendation #35, including implementation language (Volume 3, Section 1, p. 7) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_35.pdf • Section 809 Panel Recommendation #45, including implementation language (Volume 3, Section 3, p. 111) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_45.pdf • Section 846 of FY2018 National Defense Authorization Act https://www.congress.gov/bill/115th-congress/house-bill/2810 • GSA Implementation plan for Procurement Through E-Commerce Portals https://interact.gsa.gov/sites/default/files/Commercial%20Platform%20Implementation%20Plan.pdf • “Monopoly critics decry ‘Amazon amendment’” https://thehill.com/policy/cybersecurity/359514-monopoly-critics-decry-amazon-amendment • “The US government is the world’s largest purchaser of consumer goods. Amazon



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	<p>wants a piece.”</p> <p>https://www.vox.com/the-goods/2019/5/1/18524111/amazon-business-government-purchasing-state-city-local</p> <ul style="list-style-type: none"> • 2018 National Defense Strategy https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf <p>POC: Michelle Johnson, Michelle.johnson.ctr@nps.edu & Larry Asch, lawrence.asch.ctr1@nps.edu</p>
T20-026	<p>Topic: Metrics for Assessing Programs Using Agile, Incremental Development</p> <p>Overview: DoD first began using earned value management (EVM) in 1967 to track contractors’ progress against a baseline and provide a mechanism for reporting key metrics. For example, cost performance index (CPI) measures conformance of actual work completed to actual cost incurred, and schedule performance index (SPI) is the ratio of the earned value to the planned value. Because threats and technology are now constantly evolving and necessitating rapid responses to changing operational requirements, DoD programs are transitioning to Agile methods to deliver capability more quickly. Given the dynamic nature of Agile, implementing a batch-oriented EVM system has limited value in an Agile environment.</p> <p>Research Objective: Even major weapon programs depend on software, often to a large extent, requiring a new approach to program assessment that accounts for incremental development. This research would investigate the continuing value of earned value management in relation to more modern metrics for assessing program performance, particularly where programs are software-intensive.</p> <p>Main Research Question: What metrics should DoD be using to assess agile/incremental program performance?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • What are the current tools, metrics, project monitoring and control processes, and best practices to track and review progress and performance of an acquisition program? • EVM has had questionable success. Should it be replaced or augmented as the standard for program performance? • What are the metrics being recommended by the Defense Science Board, Defense Innovation Board Software Acquisition and Practices study (DIB SWAP), and Section 809 Panel? <p>Data Sources:</p> <ul style="list-style-type: none"> • Section 809 Panel Recommendation #19, including implementation language (Volume 1, Section 4, p. 151) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume1/Recommendation_19.pdf • Defense Innovation Board Software Acquisition and Practices study (DIB SWAP) https://innovation.defense.gov/software/ • Defense Science Board Task Force on DoD Policies and Procedures for the Acquisition of IT https://www.hsdl.org/?abstract&did=37450 • Defense Digital Service https://dds.mil/ • DIU https://www.diu.mil/ • Kessel Run https://kesselrun.af.mil/



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	<ul style="list-style-type: none"> • GAO Draft Agile Guide http://fed-agile.com/blog/compiled-gao-agile-assessment-guide-v4-draft • DoD Agile and EVM Guide https://www.acq.osd.mil/evm/assets/docs/PARCA_Agile_and_EVM_PM_Desk_Guide.pdf <p>POC: Larry Asch, lawrence.asch.ctr1@nps.edu</p>
T20-025	<p>Topic: Enhanced Debriefings and Industry Relations</p> <p>Overview: Despite the Office of Management and Budget’s (OMB’s) Myth-busting Memo #3, which explains how meaningful debriefings can mitigate the risk of protest, many DoD contracting agencies do not consider debriefings as a means of avoiding protests. This perception results in debriefings that many industry and private bar stakeholders describe as adversarial, incomplete, and insufficient for informing unsuccessful offerors of the government’s rationale for making an award. The Section 809 Panel’s Recommendation #69 addresses this issue by calling for a redacted source selection decision document and the technical evaluation of the vendor in all procurements where a debriefing is required.</p> <p>Research Objective: This research will explore the debriefing process from the perspectives of both contracting officers and industry, identifying areas where each party appears to have competing goals. Findings should provide recommendations for changing the culture and practice around debriefings to support increased transparency. How can all members of the acquisition team (including industry) be encouraged to share information to understand warfighter needs and deliver capabilities more effectively?</p> <p>Main Research Question: How can enhanced debriefings improve information sharing between defense acquisition professionals and industry?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • What documents, information, and processes can facilitate an effective debriefing? • Will enhanced debriefings provide enough information to unsuccessful offerors to curtail bid protests? • Are certain categories of acquisitions more (or less) conducive to enhanced debriefings? • Who will be resistant to enhanced debriefings and why? • What statutory and regulatory changes are required to implement? What can be done now without statutory changes? <p>Data Sources:</p> <ul style="list-style-type: none"> • Section 809 Panel Recommendation #69, including implementation language (Volume 3, Section 6, p. 358) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_69.pdf • OMB Memorandum, “Myth-busting 3”: Further Improving Industry Communication with Effective Debriefings, January 5, 2017. https://www.whitehouse.gov/sites/whitehouse.gov/files/omb/procurement/memo/myth-busting_3_further_improving_industry_communications_with_effectiv....pdf. • Where in Federal Contracting? http://www.wifcon.com/ <p>POC: Larry Asch, lawrence.asch.ctr1@nps.edu</p>



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T20-024	<p>Topic: Portfolio Management and Coordinated Acquisition Decision Making</p> <p>Overview: In the current environment, a Major Defense Acquisition Program (MDAP) navigates three insufficiently (or poorly) coordinated systems to develop requirements, secure funding, and plan acquisition. Each of these three major DoD decision systems have processes with separate decision makers and timelines, that make it difficult to deliver the right capabilities in time to meet needs and within budget constraints. The same basic process is also applied to defense business systems (DBSs), which are burdened with additional oversight and approval processes such as business process re-engineering, enterprise architecture, and an Investment Review Board. Within the private sector, portfolio management has long been standard practice to consolidate decision making and deliver better capabilities faster, whether for hardware or software.</p> <p>Research Objective: DoD is beginning to modernize business processes to reflect concepts of portfolio management, but is it moving in the right direction? Research may focus on MDAPs, DBSs, or the intersection between the two. Topic should be directed by student's area of expertise.</p> <p>Main Research Question: How can portfolio management integrate and improve DoD's decision making across the budget, requirements, and acquisition processes?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> • What is the status of implementing Portfolio Management in DoD USD A&S? Does it sufficiently integrate the budget, requirements generation, and acquisition processes? • How do commercial companies use Portfolio Management? • The Air Force's Kessel Run is managing software development with a focus on coordinating capabilities at the enterprise level, not just managing individual programs. Does it provide a model for the rest of DoD? • Can program managers or program executive officers begin applying aspects of portfolio management today, or are changes necessary to existing policy, laws, or regulations? <p>Data Sources:</p> <ul style="list-style-type: none"> • Section 809 Panel Recommendation #36, including implementation language (Volume 3, Section 2, p. 53) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_36.pdf • Section 809 Panel Recommendation #37, including implementation language (Volume 3, Section 2, p. 64) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_37.pdf • Section 809 Panel Recommendation #16, including implementation language (Volume 1, Section 3, p. 111) https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume1/Recommendation_16.pdf • GAO Report, "WEAPON SYSTEM ACQUISITIONS: Opportunities Exist to Improve the Department of Defense's Portfolio Management" https://www.gao.gov/assets/680/672205.pdf • Article: "809 Panel Calls for Managing 'Capabilities,' Not Weapons" https://breakingdefense.com/2019/07/809-panel-calls-for-managing-capabilities-not-



Topic #	Sponsored Topic
	<p>weapons/</p> <ul style="list-style-type: none"> Article: “Smarter acquisition of defense business systems prioritizes results over reviews” https://www.federaltimes.com/opinions/2018/04/04/smarter-acquisition-of-defense-business-systems-prioritizes-results-over-reviews/ <p>POC: Nick Tsiopanas, nicolas.tsiopanas.ctr@nps.edu & Larry Asch, lawrence.asch.ctr1@nps.edu</p>
T20-023	<p>Topic: Using Big Data in Defense Acquisition Strategy</p> <p>Overview: DoD has spent billions of dollars building the necessary software and institutional infrastructure to collect enterprise-wide acquisition and financial data. In many cases, however, DoD lacks the expertise to effectively use that data for strategic planning and to improve decision making. There is a movement in DoD and the federal government to make better use of existing and future data, articulated by such documents as the Federal Data Strategy and the USD (A&S) priority to “develop analytical framework to support data-driven decisions,” and reflected in the creation of Chief Data Officers.</p> <p>Research Objective: This research will document areas in which access to data would lead to better decisions by program managers, contracting officers, and/or other strategic decision makers. Ideally, the student will explore the use of data in an area related to their training and expertise. Research will ideally offer strategies for increasing access this data, at both the unit and enterprise level.</p> <p>Main Research Question: How can DoD programs access data across existing defense business systems to inform strategic decision-making?</p> <p>Secondary Questions:</p> <ul style="list-style-type: none"> What initiatives are already underway with the current USD (A&S) priority to “develop analytical framework to support data-driven decisions”? What technologies (e.g., artificial intelligence) can be used to integrate information currently held in diverse legacy information systems? How can DoD access the technical expertise necessary to revise its use and organization of data? Are changes to policy, regulation, or laws necessary to enhance DoD access to data? <p>Data Sources:</p> <ul style="list-style-type: none"> Section 809 panel Recommendation #88 https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_88.pdf Section 809 panel Recommendation #89 https://discover.dtic.mil/wp-content/uploads/809-Panel-2019/Volume3/Recommendation_89.pdf “Data Marketplaces: The Holy Grail of our Information Age” https://hackernoon.com/data-marketplaces-the-holy-grail-of-our-information-age-1211a6fec390 Federal Data Strategy https://strategy.data.gov/ Office of the Under Secretary of Defense for Acquisition and Sustainment https://www.acq.osd.mil/fo/docs/as-roadmap.pdf Defense Digital Service https://dds.mil/ “Assessing Department of Defense Use of Data Analytics and Enabling Data



Topic #	Sponsored Topic
	<p>Management to Improve Acquisition Outcomes” https://www.rand.org/pubs/research_reports/RR3136.html</p> <ul style="list-style-type: none"> • “Federal Data Strategy promises to help government leverage “tremendous untapped potential”” https://www.fedscoop.com/federal-data-strategy-promises-help-government-leverage-tremendous-untapped-potential/ <p>POC: Michelle Johnson, Michelle.johnson.ctr@nps.edu</p>
T20-022	<p>Topic: Augmenting the Acquisition Decision Processes with Data Analytics</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-021	<p>Topic: Applying Model Based Systems Engineering to Defense Acquisition</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-020	<p>Topic: The Role of Innovation in Improving Defense Acquisition Outcomes</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-019	<p>Topic: New Dimensions in Managing Systems of Systems</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>



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T20-018	<p>Topic: Effects of Risk Tolerant/Averse Behavior on Cost, Schedule, and Performance</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-017	<p>Topic: Rapid Acquisition</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-016	<p>Topic: Cybersecurity</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-015	<p>Topic: Breaking down silos, enterprise management</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-014	<p>Topic: Incentivizing the workforce</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>



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T20-013	<p>Topic: Leadership Development and Talent Management</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-012	<p>Topic: Innovative Contracting Strategies - contracting at the speed of relevance</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-011	<p>Topic: Industry Best Practices and Barriers to applying them to DoN Acquisition</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-010	<p>Topic: Invigorating and Understanding the Industrial Base</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-009	<p>Topic: Workforce Bench Strength - now and planning for the future</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>



Topic #	Sponsored Topic
T20-008	<p>Topic: Evolutionary/Incremental Acquisition</p> <p>Within Defense Acquisition, an evolutionary strategy with incremental developmental approach is the preferred strategy for most acquisition programs. The basic advantage over a single-step acquisition developmental approach is that the warfighter can get some capability sooner than waiting for full capability. But, how hard is this to do for program managers (PMs)? The focus of this research is to examine how difficult it is to successfully develop an evolutionary acquisition strategy with an incremental development approach. The research will use the Joint Common Missile (JCM) program and the subsequent Joint Air Ground Missile (JAGM) program as the basis to survey acquisition professionals. The research will develop a survey for acquisition professionals that will ask them to develop an acquisition strategy for the JCM program based on approved requirements, a consensus technology risk assessment and sufficient funding. The results of the survey will be recommended acquisition strategies. These strategies will then be compared to the actual strategy implemented in the JAGM program. The research will provide insights into how PMs can better develop acquisition strategies based on requirements, technology, risk, urgency and funding. The study will also examine the effect that the approved requirements, technology risk assessment and funding levels have on the recommended acquisition strategy.</p> <p>Research Question: How difficult is it to develop a successful incremental acquisition approach for defense acquisition programs?</p> <p>POC: Dr. Robert F. Mortlock, COL (Ret), U.S. Army, 831-656-2672, rfmortlo@nps.edu;</p>
T20-007	<p>Topic: Why Do Programs Fail? An Analysis of Defense Program Manager Decision Making in Complex and Chaotic Program Environments</p> <p>This qualitative and ethnographic study will study DoD Program Managers to better understand the sense-making processes in complex and chaotic program environments. We will focus on how the program manager gains insight in the decision-making process and correlate this with overall program performance. Chaotic and complex decision-making environments are not limited to Defense program environments. Commercial programs tend to organize similarly to Defense programs and experience similar cost and schedule issues and cost their corporations millions of dollars in lost revenue. This study will provide a greater level of insight into these issues and will be the basis upon which future research and possible policy can be derived to affect the performance of complex programs. Additionally, by studying decision making in complex and chaotic environments, we may be able to correlate these findings with other chaotic scenarios such as disaster relief and other emergency situations environments. The nonlinearity of these events in which human decision making is predicated by chaos may have certain similarities and patterns that can be studied with regard to their association with the individuals involved in the decision-making process. If we better understood the human in the loop influence on decision making in ambiguous environments, perhaps future organizational and leadership theory and methods could be better tailored to the environment leading to more predictable outcomes.</p> <p>Research Question: How does the program manager gain insight in the complex and chaotic decision-making process and how does this insight correlate with overall program performance?</p> <p>POC: Raymond Jones; GSBPP, (831)656-3960, rdjone1@nps.edu</p>



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T20-006	<p>Topic: Measuring process efficiency in defense acquisition management: Comparing the acquisition processes of the US, other countries and/or large multi-nationals</p> <p>Study Questions:</p> <ul style="list-style-type: none"> • What are the key development processes used by nations and multi-nationals? • What are the efficiencies? • Can the development costs for similar acquisitions be compared? • What (if any) are the reasons for more or less efficiency? • What are the differences in buying performance between nations and multi-nationals? • What causes the differences? • What are the results? • How can you measure efficiency? <p>POC: Dr. Charles K. Pickar, GSBPP (703) 589-7544, ckpickar@nps.edu and Dr. Robert F. Mortlock, COL (Ret), U.S. Army, GSBPP (831) 656-2672, rmortlo@nps.edu</p>
T20-005	<p>Topic: Innovative Defense Acquisition Concepts</p> <p>Strategic Communication (STRATCOM) Plans for Defense Acquisition Programs</p> <p>This project would look at the importance of a STRATCOM plan in the success or failure of defense acquisition programs. A Stratcom plan is more than a public affairs guidance, and it serves as a program synchronization tool for the PM to get an entire Service “on the same sheet of music” for a particular program. This project would investigate the existence of Stratcom plans for particular programs and examine possible correlation with program success. This project would also look into the best techniques to develop and get a plan approved that is actually useful to Senior leaders.</p> <p>POC: Dr. Robert F. Mortlock, COL (Ret), U.S. Army, 831-656-2672, rmortlo@nps.edu</p>
T20-004	<p>Topic: Organic and Commercial Industrial Base: How to maintain the viability of each in a time of declining resources.</p> <p>Scope: This is a broad topic. The sponsor is interested in all research within this topic area. Develop your own research project within this topic area.</p> <p>Student researchers should exercise judgment and original thought toward attaining the goals of the study within broad parameters of the selected research area of interest. Researchers are encouraged to be creative in the selection of the technical and management processes; approaches; and consider the greatest and broadest impact possible.</p>
T20-003	<p>Topic: Case Studies of Defense Acquisition Programs</p> <p>The development of research historical case study and/or teaching case study based on past acquisition programs provides unique insights into the challenges within the Defense Acquisition institution. These case studies can then be used to enhance the course content and keep the courses relevant with current issues facing program managers. Case studies can focus on critical thinking, decision-making, stakeholder management, cost benefit analysis, ambiguous test results, quality challenges, and other areas pertinent to project management. Case study development involves the creation of new and innovative ways to relay information. Potential topics could include specific acquisition programs like shipbuilding, aircraft, combat vehicles, missile, and/or other weapon/information systems</p>



Topic #	Sponsored Topic
	<p>programs. Alternately, the case studies could focus on the application of relevant technologies like 3D printing/additive manufacturing, artificial intelligence, autonomy/unmanned systems, ISO 9001 quality standards, behavioral acquisition, process mapping, test & evaluation, and/or other emerging technologies.</p> <p>Research Question: Can we use a deep-dive analysis of past defense acquisition programs to document lessons learned, inform acquisition reform initiatives and enhance critical thinking among acquisition professionals?</p> <p>POC: Dr. Robert F. Mortlock, COL (Ret), U.S. Army, 831-656-2672, rfmortlo@nps.edu</p>

