

Report to Congress

Status of Department of Defense Emerging Technology Adoption Training Programs

Prepared in accordance House Report 117-118 of the National Defense Authorization Act for Fiscal Year 2022



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Reporting Requirements

This report fulfills the direction of House Report 117-118 of the National Defense Authorization Act (NDAA) of Fiscal Year 2022 that requires the Undersecretary of Defense for Acquisition and Sustainment, in coordination with the Under Secretary of Defense for Research and Engineering, to report on the status of the Department’s emerging technology adoption training programs. The NDAA cites the importance of Department of Defense efforts to train its active duty and civilian workforce on innovation and technology adoption. According to the NDAA language, the report should include:

- (1) a detailed description of the types of training programs already underway on these subjects and the professional series of the participants;
- (2) the metrics collected on workforce performance following each program (to include the rate of adoption of emerging technologies and innovative contracting methods);
- (3) a list of the Department and private sector organizations providing the training programs;
- (4) a description of any plans to expand the training programs; and
- (5) a discussion of any authorities or funding needed to support expanded trainings.

Executive Summary

Innovation is the development of a new or significantly changed service, product, process, structure, or policy. Adoption occurs when change agents have identified, developed, or acquired, integrated, and leveraged the value of a new innovation. Change agents include innovators, facilitators, leaders, and users.

In response to Congressional tasking, the Defense Acquisition University (DAU) contracted with the Acquisition Innovation Research Center (AIRC) through the Systems Engineering Research Center (SERC), a Department of Defense sponsored University Affiliated Research Center, to conduct a study and report on the status of innovation and emerging technology adoption training programs available to Department employees (government civilians, contractors, and active duty). AIRC researchers from the Virginia Tech Applied Research Corporation (VT-ARC) prepared a comprehensive review of the topic through literature reviews, interviews, and surveys. Drawing from the broader study, this report defines innovation and presents the status of Department, academia, and industry innovation and emerging technology adoption training programs. It addresses the five enumerated items requested by Congress. The full AIRC report is found at <https://acqirc.org/publications/research/training-in-innovation-and-emerging-technology-adoption/>.

Academic literature offers that innovation is an effort to recognize and implement ideas that “create something of value”ⁱ during a knowledge-centric process across multiple systems.ⁱⁱ To ensure this report aligns with the literature, innovation is defined as the

development of a new or significantly changed service, product, process, structure, or policy. In line with NDA tasking, analysis focused on the following variable categories: Training Type (DoD and non-government), Innovation Adoption Phase (identification, acquisition, integration), four of the five categories of Change Agent¹ (innovator, facilitator, leader, and user), and Functional Area (specified professional series and career fields associated specifically with the facilitator role).

A detailed description of the types of training programs already underway that support innovation and emerging technology as well as a list of the Department and private sector organizations providing the training programs are included in Appendix A. Appendix A also includes the available facilitator professional series data provided by DAU. At this point in time, metrics are not collected regarding workforce performance following any program. No data address or tie the rate of adoption of emerging technologies and innovative contracting methods to a given training program or technology adoption phase. And finally, no data associate training programs with comparative phases of innovation.

Initial findings draw from an assessment of the available curriculum for 127 relevant courses offered as of March 2023. Of note, no training opportunities integrate the necessary interconnection between relevant career fields to provide a unified understanding of the overarching innovation in emerging technology pathway or process. This lack of knowledge impacts acquisition effectiveness and was identified during interviews as critical. Providing cross-organization learning opportunities will enhance the understanding of roles and responsibilities and will improve information flow across stovepipes, combating “cylindrical thinking”. In depth interviews also identified five other key points: processes and policies have great impact on adoption; tailored training to target specific gaps is necessary; workforce development is a critical enabler; culture has an outsized impact on adoption; and seams between organizations create boundaries to innovation and emerging technology adoption. Each of these themes are discussed further within the report.

Results suggest that while training is available to participants across the emerging technology adoption landscape, there are no defining metrics to qualify measures of effectiveness nor substantive curriculum review efforts to determine the growing requirements needed to address desired operational outcomes. Furthermore, three career fields (contracting, life-cycle logistics, and test and evaluation) have few traditional learning opportunities. Each of these functions play a critical role in the innovation and technology adoption journey. DoD staff performing these functions have limited opportunities to understand their role in the adoption process and the agility required to facilitate critical innovation and emerging technology integration and operationalization.

With respect to future and expanded training programs, services and organizations associated with emerging technology adoption phases work independently to address

¹ The fifth change agent, organization, was not identified as a training target group.

needed opportunities within traditional and nontraditional education settings. While authorities are available for curriculum and training development, funding, resources, and strategic direction are lacking. Ultimately, the absence of an overarching Department emerging technology innovation training strategy encourages systemic cylinders of excellence. As a result, numerous independent organizations take isolated initiatives to develop their own training resources in alignment with perceived local operational challenges, some more effectively than others. While important at the tactical edge, these cylinders of excellence do not translate into a strategic Department-wide staff capability as the seams between organizations create barriers to critical knowledge transfer across innovation phases and functional areas. It is recommended that a Department Strategy for Training and Education for Emerging Technology Transition be developed and championed by senior leaders with support across the Department at all echelons.

Scope of Study and Methodology

The original guiding NDAA language recognized that the Department often offers training programs on innovation and emerging technology through both program offices and private sector organizations. And because emerging technologies could potentially have a disruptive impact on U.S. national security, the committee interests in the topic intend to impact and affirm the importance of ensuring the DoD is trained and prepared to identify, acquire, and integrate innovative technologies. With these caveats in mind, the VT-ARC analytic team conducted a literature review to align the study design with innovation and technology adoption intellectual resources.ⁱⁱⁱ Existing academic literature served as the basis for the team’s innovation definition: the development of a new or significantly changed service, product, process, structure, or policy.² Innovation may be incremental, architectural, radical, or disruptive. (See Figure 1.)



Figure 1: Innovation Categories

² Service: an offering that does not involve manufacturing goods; Product: manufactured or refined goods; Process: a formalized series of actions or steps taken to achieve a particular end; Structure: organizational system that determines roles, responsibilities, and information flow; and Policy: an implemented procedure or protocol.

Although based in economic and business theories, innovation types are relevant to our nation’s defense. Incremental innovations create minor improvements to existing programs or products as occurs during standard weapon life cycle replacement. Architectural innovation combines existing innovation categories’ components in a novel way, such as with the Joint Warfighting Concept. A disruptive innovation is a new service, product, process, structure, or policy that creates an outsized impact on an existing system as occurred with the invention and technology transition of digital cameras which increased intelligence cycle speed. A radical innovation is a new service, product, process, structure, or policy that changes the way we defend our nation. Examples include but are not limited to the submarine, airplane, and tank. Few, if any current training on innovation and emerging technologies includes awareness and best practices for these various forms of innovation. Interviews suggested that DoD is most proficient in incremental innovation and struggles with the other forms.



Figure 2: Innovation and Emergent Technology Adoption Journey

The innovation definition and adoption journey categories serve as the foundation for this report framework across data life cycle stages, aiding to identify and assess innovation and technology adoption training programs across the Department, academia, and industry. Data were derived from a three-part collection approach: web search, interviews, and survey. Because learning opportunities and courses are constantly in flux, the programs

³ Change agents are defined as: innovator (an individual or team who initiates the conceptualization and/or development of an innovation; organization (a structured entity comprised of a collection of people formed to achieve a particular purpose); leader (a person with a vested interest in, authority over, and responsibility for an organization’s performance); user (an individual within an organization who uses or is directly impacted by an innovation); and facilitator (an individual who helps bring about an outcome by providing indirect or unobtrusive assistance, guidance, or supervision).

listed in Appendix A represent a snapshot in time and were used as a representative sample of trainings upon which to conduct analysis.

Analytic variables initially included Training Type (DoD and non-government), Innovation Phase (Identification, Acquisition, Integration), and Change Agent (innovator, facilitator, leader, and user).⁴ Results and analysis identified potential gaps in the available curriculum for 127 available courses in innovation and emerging technology adoption. Because a preponderance of the Department’s efforts regarding innovation are executed as part of the facilitator role⁵, and the DAU is responsible for training Defense Acquisition Workforce employees in related competencies, this category was further sub-divided into functional areas⁶ to ensure accurate analysis of the personnel who play a critical role in the acquisition phase of the innovation and technology adoption journey. This is also the phase

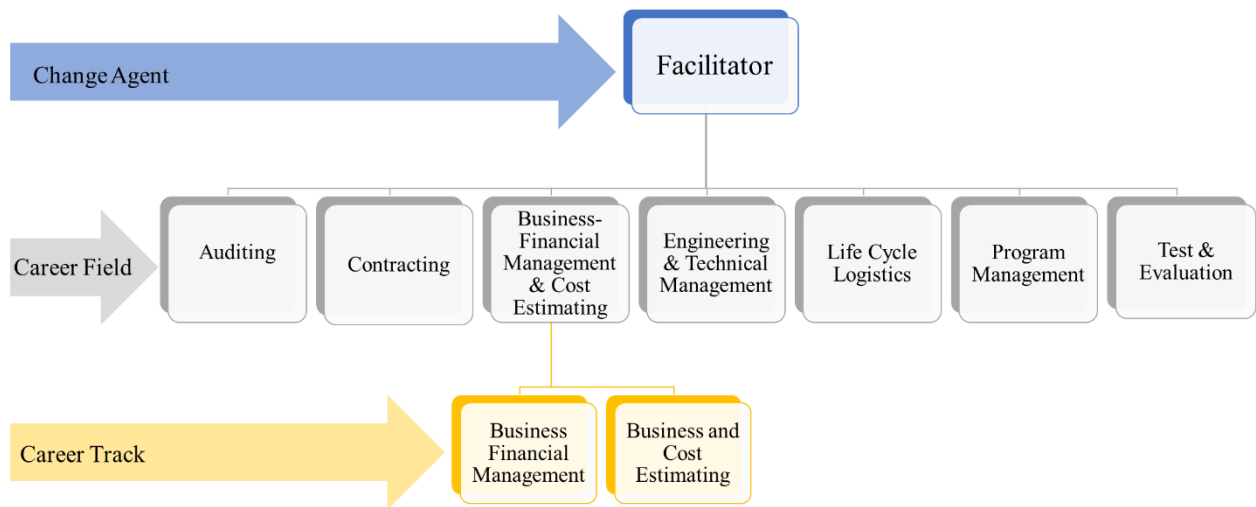


Figure 3: Facilitator Acquisition Functional Areas & Career Tracks

often described as the DoD “valley of death”.⁷ The facilitator sub-divisions include: auditing, business-financial management and cost estimating, contracting, engineering and technical management, life cycle logistics, program management and test and evaluation. (See Figure 3.) These functional areas are critical to the report findings and future training.

⁴ Organization was not identified as a training target group in the collected data.

⁵ According to DoD Civilian Careers (<https://www.dodciviliancareers.com/civiliancareers>) there are over 675 different DoD occupations which fall into the following categories Business, Industry, Program Management and Analysis; Cyber and Information Technology; Environmental Management; Facilities Engineering; Human Resources; Intelligence; Logistics; Medical, Health, and Wellness; Military Community and Family; Public Health, Mental Health, and Social Sciences; and Quality Assurance.

⁶ Functional areas and career tracks are utilized for the purpose of identifying professional series as required by the NDAA language.

⁷ January 15, 2020 House Armed Services Committee discussion utilized the term as a description of the substantial hurdle between a product’s development and the moment that product becomes part of a program of record.

Finally, with respect to the study methodology, it is important to note that learning opportunities come in a wide variety of formats and modes of delivery, including informal web resources and job aids, workshops, on the job training (OJT), and formal structured courses offered online or in traditional classroom settings. The open-source data collection and amplifying survey execution focused primarily on online and traditional classroom learning opportunities. The interviews provided opportunities to build an understanding of informal learning opportunities in addition to formal training not already captured in the open-source data.

Study Outcomes

Initial research data revealed training that focused on four of the five change agents: innovator, facilitator, leader, and user. (See Figure 4.) Most of the available traditional formal learning

opportunities targeted the innovator and facilitator change agents. Fewest trainings were offered to the user. It is important to note that user training on new systems is integrated at the program office level and would be identified as OJT. Organizations such as the Marine Corps Warfighting Lab constitute institutions dedicated to operational integration and associated adoption training. The low formal learning opportunities geared towards users should not be interpreted as a gap until new system training programs OJT data can be collected and assessed. At the time of this study such data was not available.

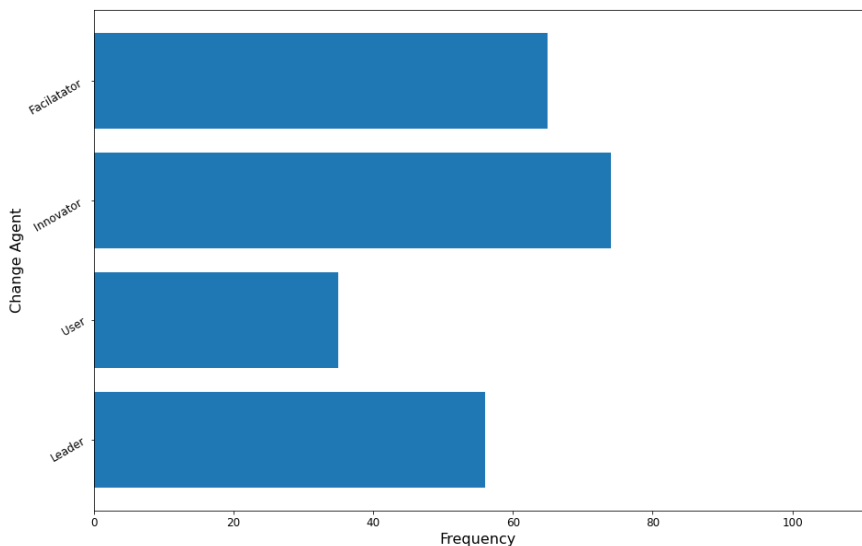


Figure 4: Distributions of Trainings by Change Agent

Based on additional research regarding change agents and the critical path of innovation and emerging technology, data showed that the preponderance of the Department innovation and emerging technology adoption journey occurs within the acquisition system. The innovator role, for example, is principally served by industry with key facilitator roles designed to bring new capabilities into the Department. Facilitator functions connect the identification of emerging technologies to their subsequent integration into the fleet or field. DAU provided further data needed to break down the facilitator category into acquisition functional areas or career fields.

Analysis identified one functional area, auditing (AU) that had no innovation and emerging technology adoption training. Engineering and technical management (ETM) had the most formal learning opportunities followed by program managers (PM). The remaining

functional areas, contracting (CON) business-finance management and cost estimating (BUS-FM/CE), life cycle logistics (LCL), and test and evaluation (T&E), had significantly

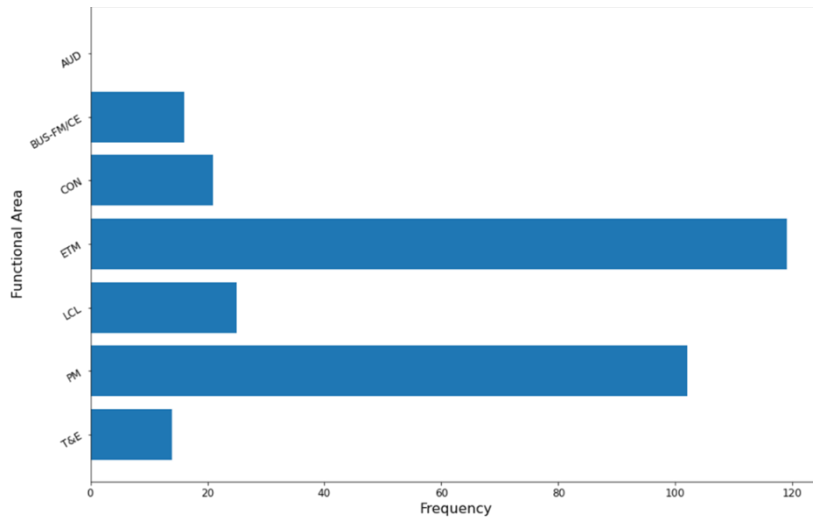


Figure 5: Distribution of Trainings by Functional Area

fewer offerings. Of those functional areas with the least traditional learning opportunities, CON, LCL, and T&E play critical roles in the innovation and technology adoption journey. Limited opportunities to understand their role and the agility required to facilitate critical innovation and emerging technology integration and operationalization likely impacts the rate of adoption. (See Figure 5.)

In addition to the open-source research and analysis, detailed targeted interviews were conducted across service institutions seen as critical to innovation and emerging technology adoption. Interviewees comprised different levels of leadership and varying management roles. The purpose of the interviews was twofold, to develop a collaborative innovation/technology adoption community of interest and to gather information

regarding how Department operational and research organizations are addressing innovation/technology adoption challenges.

Participating organizations included: the Office of Naval Research (ONR), Naval Special Warfare Command (WARCOM), the Army Research Laboratory, the Air Force Research Laboratory, the Marine Corps Warfighting Lab (MCWL) and the office of the Deputy Assistant Secretary of the Navy – Research, Development, Test & Evaluation (DASN RDT&E).



Figure 6: Interview Themes

Consistencies in narrative were prevalent across services and organizations. Five themes emerged. First, innovation and technology adoption are not just about the technology—it is

affected by processes and policies. Organizations and individuals who do not adopt innovative processes and policies create roadblocks to implementation which in turn effect innovation and emerging technology adoption.

Second, workforce development is critical to Department innovation/technology adoption success. Because training decisions are made at the local level there is significant variation in skills related to innovation and technology adoption across the Department. The lack of an overarching emerging technology transition training strategy implementation plan generates redundant expenditures, creates knowledge gaps, and may result in inequitable distribution of training resources. Any such strategy should include the option to either hire or internally develop expertise in emerging technology skills as well access to both formal and informal learning opportunities. There are no reported plans to assess innovation and emerging technology training impacts. To do so would require a data collection plan and clear metrics against which to measure which could be included in the overarching strategy.

Third, training should be tailored to knowledge gaps and therefore training programs need to be flexible. One important gap is a shared understanding of the acquisition process. Department staff whose career field is a part of the innovation adoption journey require a foundational understanding of the entire acquisition process not just knowledge directly related to their career field or functional area. Understanding the complex system of systems involved in acquisition should generate efficiencies for the innovation adoption journey. The current training is insufficient to address this gap.

Fourth, the seams between organizations and communities are often barriers to adoption. Providing cross-organization learning opportunities will enhance understanding of roles and responsibilities and improve information flow across stovepipes, combating “cylindrical thinking”. Interorganizational training opportunities also allow for peer mentoring as a part of the learning experience. Interorganizational training participation will require a senior leader to “own” and champion the problem and solution to ensure cross-organizational support and participation.

Finally, culture has an outsized impact on innovation/emergent technology adoption. Attitude toward and understanding of innovation can enhance or create barriers to successful navigation of the adoption journey at all staff levels and access to innovation opportunities. This can lead to extreme variance in adoption success. For example, The Middle Tier Acquisition (MTA) process creates gray areas, intended to allow decision makers some autonomy to enable faster adoption; however, successful rapid implementation is reliant on personality and risk tolerance. Additionally, organizations have differing perceptions of the role of emerging technology often referred to as the difference between “manning the arms” and “arming the warfighter(man)”. In one case the innovation or emerging technology is the primary focus and in the other it is the warfighter.

Metrics on Workforce Performance

At the time of this study, none of the training programs or organizations reported the collection of post learning workforce performance metrics. Because training is handled locally, there is no database that identifies

which Department employees are attending (if any) a given innovation and emerging technology adoption related training. Without access to information related to staff training participation, it is impossible to accurately report training effectiveness. This is further compounded as OJT is also not uniformly tracked but is known to potentially be as effective as training. Other learning opportunities including workshops, seminars, and professional events, which could have a measurable impact on performance, are also not centrally tracked or reported.

Key adoption enablers include a program's acquisition and contracting strategies. The selection and application of the appropriate acquisition and contracting strategies are essential to emerging technology adoption. Further, training on acquisition pathway selection and the proper use of innovative contracting approaches could impact the likelihood that the most appropriate strategies are applied to programs. Using the correct acquisition pathway and contracting strategy therefore enables innovation and emerging technology adoption. The VT-ARC team explored whether the available data could support analysis to determine a relationship between a learning opportunity and a change in performance. One course related to other transaction authorities (OTA) appeared to align with open-source data from Sam.gov stored on the pilot Defense Acquisitions Research Collaboration & Innovation Environment known as DARCIE. The available data included quarterly totals for obligations toward OTAs from Q1 2016 through Q3 2022 (See Figure 8.) Based on the total dollars obligated, the team concluded that it was likely the open-source data set was incomplete and could not be used to identify trends. Additionally, any relationship between the training and OTA use could not be determined because the DAU credential was not launched until FY23 which did not provide sufficient overlap with the available data set.

No MTA-related training was available for analysis; however, the Audit of Department of Defense Middle Tier of Acquisition Rapid Prototyping and Rapid Fielding Programs report

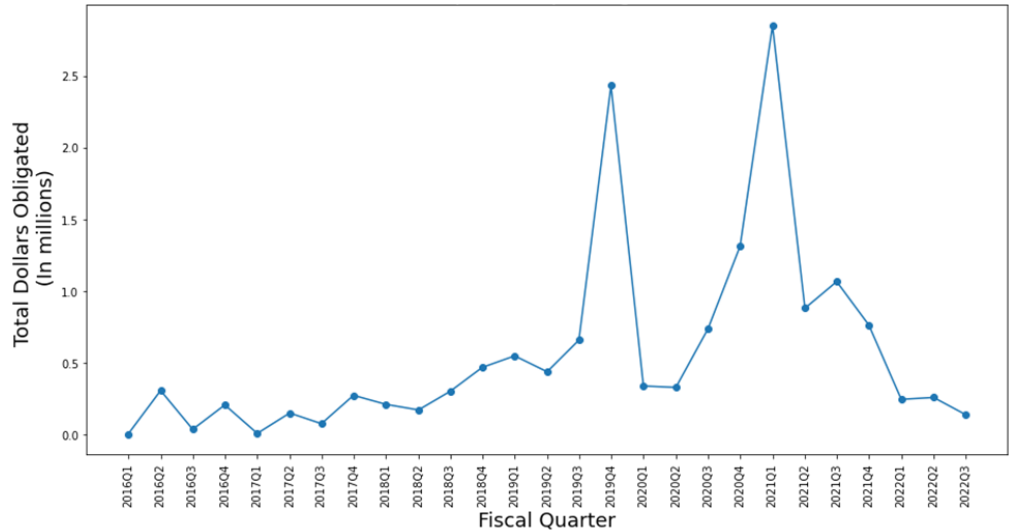


Figure 7: OTA Analysis

(DODIG-2021-131) found that “DoD acquisition personnel effectively leveraged the MTA pathway for 11 programs we reviewed to rapidly develop prototypes and field proven technologies to the warfighter.” Additionally, the reviewed programs demonstrated increased efficiencies and effectiveness. The report also recognized that this acquisition reform is a “work in progress” which requires appropriate oversight and management. As the DAU is a ready resource for MTA-related training, access to data related to MTA employment could result in an understanding of training impact and effectiveness for emergent technology adoption.

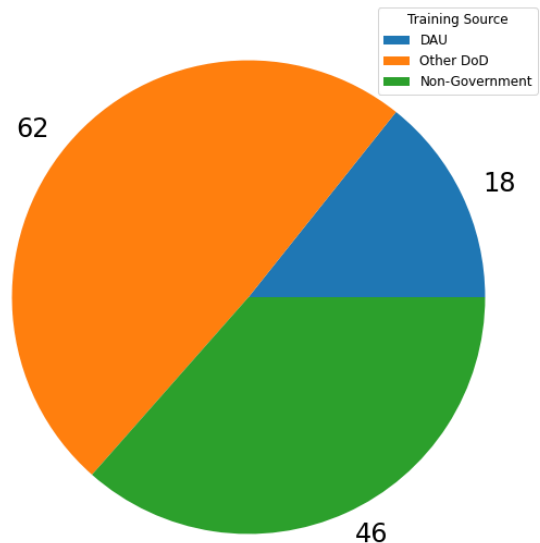


Figure 8: Training Source Distribution

The Department’s challenges associated with data access are not new and are well documented. AIRC was contracted to develop the Innovative, Data-Enabled Acquisition Strategy (IDEAS) proposal to help drive digital transformation and address such challenges. Additionally, the Deputy Secretary of Defense’s “Creating Data Advantage” memorandum (DSD, 2021) calls for the Department to:

1. *Maximize data sharing and rights for data use: all DoD data [are] enterprise resource[s].*
2. *Publish data assets in the DoD federated data catalog along with common interface specifications, and a set of [application programming interfaces (APIs)]/services to allow industry to adapt data models for consumption.*
3. *Use automated data interfaces⁸ that are externally accessible and machine-readable; ensure interfaces use industry-standard, non-proprietary, preferably open-source technologies, protocols, and payloads.*
4. *Store data in a manner that is platform and environment-agnostic, uncoupled from hardware or software dependencies.*
5. *Implement industry best practices for secure authentication, access management, encryption, monitoring, and protection of data at rest, in transit, and in use.*

As the Department initiates a data strategy that addresses such data-related challenges, the ability to accurately assess training impact should improve significantly.

DoD and Private Sector Organizations Providing the Training Programs

The VT-ARC study team collected and sorted data into three innovation and emerging technology-related training bins: DAU, DoD, and non-government. The non-government learning opportunities were limited to institutions that foster existing relationships with the Department. A complete list of the learning opportunities and their associated

⁸ e.g., application programming interfaces (APIs)

institutions can be found in Appendix A.⁹ DAU and Other DOD institutions provide the majority of training opportunities within this data set - with the exception of the innovator category. It should be noted that there are likely significantly more non-government programs available without the limitation of an existing relationship with the DoD. (See Figure 9.) The preponderance of DAU training is geared toward the university's target audience of facilitator and the spread of training sources is visualized across the facilitator functional categories. (See Figure 10.)

Training Expansion Plans

The web search and survey did not provide any data on training expansion. Interviews revealed two Department organizations are currently working to expand innovation and emerging technology adoption-related trainings. In addition to examining the Army's enlisted training and education relationship with Carnegie Mellon University for applicability to the Naval force, Dr. Jason Stack, ONR Division Director and Unmanned Task Force Deputy Director is leading a partnership with the Naval Post Graduate School to develop innovation adoption related graduate curriculum. The timeline for implementation was not in place at the time of the interview.

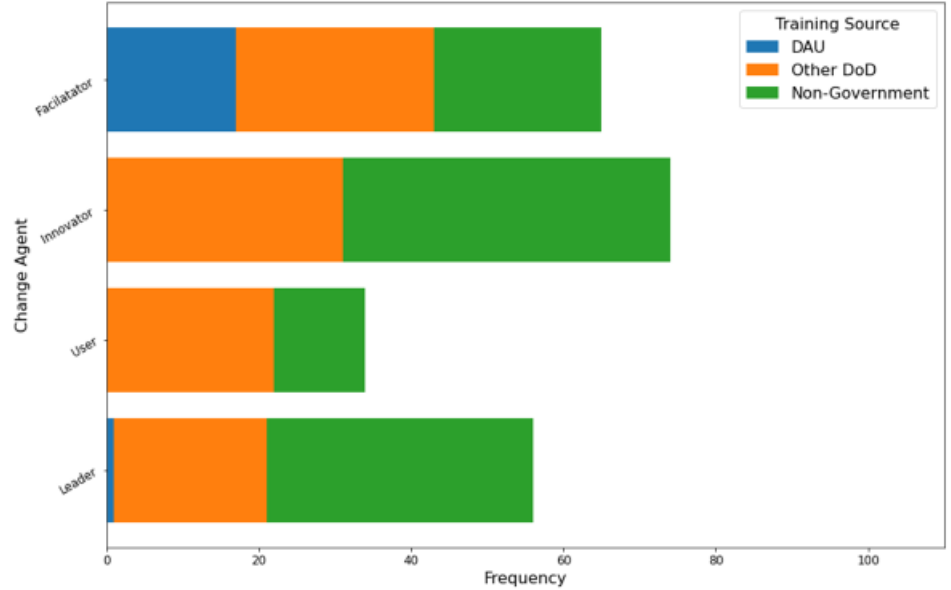


Figure 9: Distribution of Training Source by Change Agent

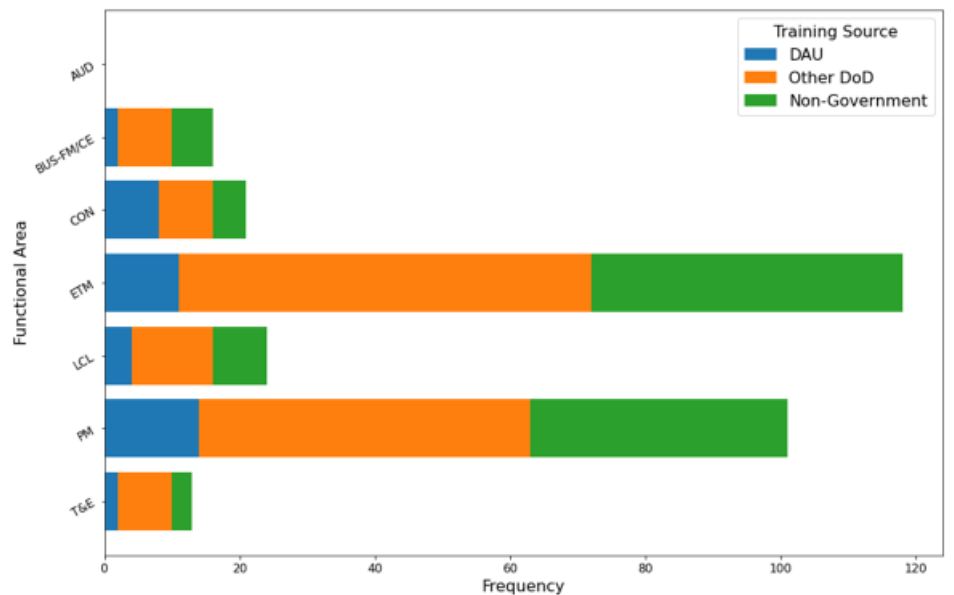


Figure 10: Distribution of Training Source by Functional Area

⁹ There was a single non-DoD government course included in the original data set which is not included in this analysis.

Additionally, Mr. Robert Freeman, ONR Corporate Strategic Communications Director, is currently conducting an evaluation of science communication trainings to provide a detailed analysis of options. These contracted trainings would be specifically targeted at the innovator change agent and intended to help them communicate complex concepts to decision makers to facilitate an appreciation for the innovation/emerging technology's potential operational impact. There is no reported timeline for the completion of the evaluation report.

The DAU is currently developing a Mission Engineering fundamental credential. Mission Engineering represents a relatively recent innovation in systems engineering and its effective application would likely have an impact on the innovation and emerging technology adoption journey. The intention is to complete three credentials (fundamental, intermediate, and advanced) to ensure the Department change agents have access to and ability to apply this innovation.

While the availability of training expansion data is limited, the near continual updates to training opportunities listed on the internet implies that innovation and technology adoption-related trainings are regularly being updated to ensure the curriculum remains relevant.

[Authorities/Funding Needed to Support Expanded Training](#)

While all organizations reported that they maintain the authorities to expand learning opportunities, funding is a different story. The lack of an overarching Department emerging technology transition training strategy likely impacts training funds distribution and therefore available funds for training expansion. Organizations, other than those discussed in the previous section, report they are not funded to expand offerings at this time. ONR and DAU are not currently resourced to add programs other than what was discussed. Based on the Mission Engineering credential development project plan, a well-designed, traditional learning opportunity could be developed for approximately \$600,000.

[Study Recommendations and Conclusion](#)

The lack of an overarching Department training strategy allows for cylinders of excellence, organizations who take initiative to develop an effective distribution of training resources in alignment with Department operational challenges. These cylinders of excellence do not translate into a Department-wide staff capability as the seams between organizations create barriers to expansion. It is recommended that a Department Strategy for Emerging Technology Transition be developed and for a senior leader to own and champion this strategy with support across the Department at all echelons.

This strategy should include considerations for:

- Democratized data collection and analysis to ensure leaders at all levels can make data driven decisions in alignment with the strategy.
- The development of a Department data base of formal and informal learning opportunities offered by Department, industry, and academic institutions.

- Metric design and data collection strategy to assess impact of formal and informal learning participation.
- Implementation of cross-organizational and cross-functional training to bridge inter-organizational seams and increase understanding of the systems of systems required to ensure our Nation's defense. Providing cross-organization learning opportunities will enhance understanding of roles and responsibilities and improve information flow across stovepipes, combating "cylindrical thinking".
- Joint and force-specific learning needs to allow for customized learning opportunities.
- Maintaining decision authority at the command level.
- Appropriate training and education budget distribution.
- Streamlined reporting requirements to reduce unplanned data calls.

In addition to these recommendations, this study fulfills the direction of House Report 117-118 of the National Defense Authorization Act (NDAA) of Fiscal Year 2022. It explores and assesses the status of the Department's innovation and emerging technology adoption training programs that impact our active duty and civilian workforce. The report includes a detailed description of the types of training programs already underway on these subjects and the professional series of the participants; the metrics collected on workforce performance following each program (to include the rate of adoption of emerging technologies and innovative contracting methods); a list of the Department and private sector organizations providing the training programs; a description of any plans to expand the training programs; and a discussion of any authorities or funding needed to support expanded trainings.

Appendix A: Formal Learning Opportunities¹⁰

Type	Name	Objectives/Description	Functional Areas
Other DOD Innovation Trainings	AFIT Avolve: Foundations of Creativity and Innovation	Avolve is a content sharing platform for all Air, Space, and military professionals to explore and view videos, documents, websites, and learning paths for their training, education, and self-improvement. Content can be contributed by anyone who wishes to share their expertise or interests with other Air, Space, and military professionals, all behind a secure CAC authenticated firewall. Individuals and organizations, enlisted, officers and civilians, are all able to share their knowledge and messages across services, commands, career paths, and geography. AFIT has recently released a learning path within the Avolve platform entitled “Foundations of Creativity and Innovation”	PM, CON, ETM
Other DOD Innovation Trainings	AFIT: Education With Industry (EWI) Program	The EWI Program is a highly selective, competitive, career development program designed to improve the technical, professional, and management competencies of participating students by partnering with top tier public and private sector companies. During the ten-month tour, students embed with an industry team to meet their specific career desired learning objectives. Through hands on exposure to industry best practices, students develop the necessary competencies, skills, knowledge, and abilities to build, sustain and retain a mission-ready workforce, as well as learn how to better partner with industry in the future. The Program is sponsored by SAF/AQ and managed by the Air Force Institute of Technology (AFIT). The ultimate goal of the program is to develop Air Force leaders with greater business acumen and empathy with the expertise to implement innovative practices when they return to the Air Force. Upon completion, graduates are assigned to Air Force duty consistent with their EWI experience.	ETM
Other DOD Innovation Trainings	AFIT: Innovator, Leader, Organization, Acquisition professionals (CO, CORs, PMs), Facilitator	Evolution, revolution, and innovation have defined human existence for millennia. Innovation is pervasive and resident in everything we do. Since the dawn of history, nations have engrossed themselves in developing new tools, techniques, and methodologies to protect their geographical boundaries. From the crude implements used by prehistorical people to the very modern technologies, the end game has been the same. That is, for national defense. Even in times of peace, efforts must be made to develop new machinery, equipment, processes, and devices targeted for the protection of the nation. The emergence of organized nations and structured communities facilitated even more innovative techniques of national defense. The drive to achieve new national defense tools led to better underlying science and technology, which most often end up having other beneficial societal applications that are outside the bounds of national defense. It is through the efforts of industry that those societal benefits are manifested as practical consumer products. It is important to recognize, document, and demonstrate the paths of converting defense science and technology developments into general applications through deliberate transfer actions. From the ice age to the stone age, the bronze age, the iron age, and to the modern age, innovation, rudimentary as it may be in many cases, has determined how humans move from one stage to the next. The innovation pursuits of The Wright Brothers led to the fast-tracking of aviation. This course presents a variety of topics related to how to innovate, how to use innovation, how to build innovation teams, how to lead innovation efforts, and how to teach innovation	PM, ETM
Other DOD Innovation Trainings	AFIT: RDMT 541 Operational Technology and Innovation	This course has three components. Part one is the theory on innovation and technology ranging from the dynamics of innovation and technology S-curves, to disruptive technologies through dominate designs, and from lead users to corporate regeneration. Part two is an overview of the current state of technology in our fielded systems from fighters to satellites to communication systems. Part three is a look at the technologies developed or being developed in our laboratories, universities, and commercial firms and how these technologies may be applied in current and future defense and commercial systems. Some lectures will be held at the secret level	ETM
Other DOD Innovation Trainings	AFIT: RDMT 554 Management in R&D Organizations	Technological change and innovation have impacted the socio-political economic systems in our society in a variety of ways. These changes often play a dual role –they disrupt the existing order and create new opportunities. Although most innovations and technological changes fail, companies that do not pursue innovation often fail too. Therefore, managing innovation is often considered one of the most difficult challenges a manager faces. The focus of the course is on the management of product and process innovation; both sustaining and disruptive innovations will be discussed	ETM, PM
Other DOD Innovation Trainings	AFIT: RDMT 654 Seminar in Research and Development 4 Management	As the capstone course for the S&T focus sequence, this course builds on material presented in previous courses. The purpose of the course is to help students think strategically about technological innovation in an R&D environment. The text will be augmented with additional readings and case studies. Topics include entrepreneurship, managing innovation, the technology life-cycle, management of R&D personnel and projects, and integrating technology strategy with business strategy. The course will be taught in seminar fashion with substantial class discussion. This is a writing-intensive course in which assignments include case analyses and research papers.	PM, ETM, BUS-CE/FM

¹⁰ The contents in the Objectives column are taken directly from the on-line information and lightly edited.

Other DOD Innovation Trainings	AFWERX - SPARK	Intensive and immersive training for innovators; students solve real Department of Air Force (DAF) problems (1-week and 1-month options offered) Development Branch (RGST) specializes in training and developing Airmen & Guardian Innovators as a warfighting capability through curriculum and experiential learning.	PM, ETM
Other DOD Innovation Trainings	Air Force: Acquisition innovation pilot program Base Camp	The 60-hour training program is designed to integrate into participants' daily work and to help build a DOD-wide network of innovators.	PM, LCL, ETM, BUS-FM/CE
Other DOD Innovation Trainings	Air University: BH5011 Field Study 1	The class will go on a week-long field study early in the course to gain insight into how organizations innovate, both within and (especially) without the Air Force. Examples of sites the group might visit are Kirtland AFB in Albuquerque NM, Sandia National Laboratory, Los Alamos National Laboratory, Lawrence Livermore National Laboratory, Google, Space-X, and others dependent on the topic for the year and individual student research interests. The students will then utilize the insights gained from these visits to inform their own approaches to prototyping and, potentially, to partner with one or more of the organizations with which they interact. Just as crucially, these visits provide the core of the innovation networks each student will develop over the course of the 10 months and take with them when they leave.	PM, ETM
Other DOD Innovation Trainings	Air University: EL6944 Innovation Research Task Force	Accelerate change or lose! The term innovation seems to be a top priority for most organizations today. The CJCS and CSAF make remarks concerning how the DoD must innovate, but what does it mean to innovate and how do we make it happen? Through readings, class discussions, and lectures, the AU innovation research task force (iRTF) explores frameworks to discover how different kinds of thinkers and leaders can create constructive conflict, channel it, and develop something completely new. Students spend the first semester working through historic innovators, methodologies, and concepts while working towards a project pitch. Second semester, students spend time in research, prototyping, visiting local labs, and diving into innovation topics to include war gaming, virtual reality, artificial intelligence, machine learning, quantum, energy, naming only a few. Meetings will occur at MGMWERX in downtown Montgomery	PM, ETM
Other DOD Innovation Trainings	Air University: RE 5327 Innovation by Design	This course examines a framework to explain how different kinds of thinkers and leaders can create constructive conflict, channel it, and develop something completely new.	PM, ETM
Other DOD Innovation Trainings	Air University: RE 5823 Innovation	This course seeks to inform officers about the purpose, nature, and process of this thing called "innovation." What is it, why is it difficult, how do you do it, who does it, when, and where does it happen?	PM, ETM
Other DOD Innovation Trainings	Air University: WF6501 Air, Space, and Cyber Power in the Future	This core course focuses on assessing issues associated with the innovation and the future employment of joint airpower. The rapid pace of change occurring throughout the world compounds the uncertainty and complexity of the future operating environment. If the Air Force is to continue to succeed, we must consider both the challenges and opportunities we will face in air, space, and cyberspace. Once students have learned to anticipate challenges to future Air Force core missions, the course focuses on the integration of airpower into future joint operating concepts	PM, ETM
Other DOD Innovation Trainings	Air University: EL6209 Creative Thinking: From Imagination to Innovation	Students will compare creative thinking strategies with critical thinking strategies, explore multiple opportunities to think "outside the box," will write extensively about their experiences, and how to translate what they learn about creative thinking into their leadership and mentoring philosophies. This course is designed to show students how to move from imagination through creative thinking to innovation, to be ready to recognize innovation, and to nurture innovation. The written and oral deliverables of this course will also enable students to practice communication with multiple audiences	PM, ETM
Other DOD Innovation Trainings	Army University: CES Advanced 1-250-C62	The CES Advanced Course offers leadership development and education to upper-level leaders, who by necessity are required to be more agile, innovative, and self-aware to effectively lead and care for personnel and manage assigned resources (AR 350-1, Aug 2014). The course focuses on educating the competencies and attributes for individuals serving in Enterprise or Strategic leader roles or as those who work on those persons' staffs who are called upon to usually work with more complexity, more individuals, greater uncertainty and unintended consequences Phase 2, the Resident Phase, consists of four weeks. The course is focused around three (3) main themes or modules across 4 weeks. Weeks 1 and 2 are building Foundational Skills and Application, Week 3 focuses on Strategic Leadership and developing an Enterprise Wide Perspective and Week 4 focuses on How the Army Runs. Students will participate in Executive Coaching sessions with their instructors twice during the course and on the 19 th day of the course provide a 15 minute leader development plan brief to the seminar on what you learned and how you will apply it when you return to work.	PM, ETM, LCL
Other DOD Innovation Trainings	Army University: CES Continuing Education for Senior Leaders Course Number:1-250-C63 (CP)	The CES Continuing Education for Senior Leaders Course offers leadership development and education to senior-level leaders, who by necessity are required to be more agile, innovative, self-aware, and enterprise thinkers who can effectively lead and manage assigned resources. CES CESL resident training consists of both small and large group activities. The course structure is a combination of senior leader guest speakers and interactive exercises on subjects presented by university graduate-level instructors. This resident phase of the CES CESL Course has several	PM, ETM, BUS-FM/CE

		general outcomes: 1. Develop a leadership reading program. 2. Improve student understanding of Army doctrine, policy and strategies. 3. Develop a leadership development plan.	
Other DOD Innovation Trainings	Army University: Innovative Leader Course Number: 9E-F102/920-F-99	The purpose of the Innovative Leader Course is to further develop leadership attributes and competencies and provide proficiency in the functional role of leading, shepherding, facilitating, and encouraging the innovation process and innovative thought within an Army organization. The purpose of the Innovative Leader Course is to further develop leadership attributes and competencies and provide proficiency in the functional role of leading, shepherding, facilitating, and encouraging the innovation process and innovative thought within an Army organization.	ETM, PM, T&E
Non-Government Innovation Trainings	Carnegie Mellon: Special Topics: Corporate Venturing & Innovation	Startups aren't the only career destination for aspiring and experienced entrepreneurs - large, established companies need entrepreneurs more than ever to help them avoid the risk of being disrupted. The future survival of many large companies is in the hands of entrepreneurs who understand both technology and business - learn the skills you will need to engage corporate executives on the topic of corporate venturing. This course is created to help entrepreneurs design corporate venturing programs for large companies who want to avoid being disrupted by innovative and more nimble startups *How can you convince corporate executives to invest in corporate venturing capabilities? *How can you be successful as an entrepreneur inside a large company that is set on its ways? *How can a large company compete with faster and more nimble startups by building their own?	PM, LCL, ETM
Non-Government Innovation Trainings	Carnegie Mellon: Commercialization and Innovation: Strategy	Commercialization and Innovation, Strategy (45-807) focuses on innovation (transformational or disruptive innovations and by sustained innovations) and on the development of open innovation business models and market strategies required to introduce these innovations into the market, grow thru market share capture, and to establish dominant market positions. Students will gain a perspective of various current theories and models of innovation, how innovations are brought to the market and positioned for successful launch and subsequent growth. Students study and discuss both successful and unsuccessful attempts to bring innovations to the market via a series of lectures, readings, and case discussions. The first mini course focuses on the upfront strategic market thinking that must be the basis of a proactive and potent business plan to introduce innovations to the marketplace. It is the result of intense understanding of the SET factors (social, economic, and technology) and industry dynamics into which the opportunity will be introduced. It is strategic because of rapid changes in the marketplace and the competitive set which the opportunity must confront for execution in the emerging marketplace (emergent strategy or agile approach). Student teams are expected to take on a project determined by the team (with faculty approval) or framed by an outside organization (within or external to CMU). The goal of the project in Mini 1 is to understand the industry dynamics and competitive set, to identify a market based on use of an agile needs-driven innovation methodology (job + job executor + context defines the market), and to segment the market based on identification of jobs to be done by the job executors. These are the drivers for identification of a successful Minimum Viable Product (MVP), a market entry point, and development of a differentiating strategy and self-sustained growth strategy.	PM, ETM
Non-Government Innovation Trainings	Carnegie Mellon: Economics of Innovation Strategy	This course will introduce students to the economic models that underpin innovation strategy. We will emphasize the application of frameworks from the economics of technical change to understand how technology markets evolve and what strategies allow firms to capture value from innovation. The aim of the course is to develop a rigorous foundation in economics that students can use in professional roles such as: a manager in a technology-intensive firm an engineer or scientist interested in new product development/RD an analyst or investor in technology markets a management consultant specializing in technology-intensive industries	PM, LCL, CON, ETM
Non-Government Innovation Trainings	Carnegie Mellon: Change Management for Innovation	How do companies avoid going the way of Kodak, Nokia, Blockbuster and Borders? In each of these cases, the companies enjoyed early success and grew quickly to positions of market dominance. But that growth came at a cost - they became overly focused on the internal control systems required to manage growth while seeking to shape their market to perpetuate their dominance. All in cases, they were failed to detect fundamental shifts in both competitor behaviors and market preferences. These shifts were driven by changes in technology. Today there is a different set of dominant players that are very aware of the reasons for the failure of their predecessors. How are they looking to avoid going the same way? This is a new course which looks at strategies being used by companies such as Microsoft, Amazon, Google/Android and Apple to grow their businesses in ways which do not rely on control but on the two constants for success - change and continuous innovation. Particular attention is paid to two critical success factors - leadership and knowledge management. The course focuses largely on case studies, looking at them through some theoretical lenses.	PM, ETM, CON
Non-Government Innovation Trainings	Carnegie Mellon: Engineering and Technology Innovation Management in Practice	Innovation takes place inside organizations, whether it's a small company, a large corporation, a university or a government laboratory or agency. In this course, we will focus on the people who lead innovative organizations, what they do to promote and sustain innovation, and the skills and attributes they need to be successful. The instructors experience as President of Carnegie Mellon, guest lecturers from industry and the literature will be the sources from which the course will draw. Students will gain insight into the roles they may play in contributing to and leading innovative organizations, and the skills and attributes they will need for success. 19684 is part of the Engineering and Technology Innovation	PM, ETM

		Management (ETIM) Master's Program. ETIM students should register for the 6-unit course, reflecting the supplemental course requirements for ETIM. Other students are welcome to enroll for the 3-unit course.	
Non-Government Innovation Trainings	Carnegie Mellon: Innovation Management in Practice	Innovation has been described as the intersection of invention and insight leading to the creation of social and economic value. Companies increasingly rely on innovation to establish and drive their success. Public policy makers see innovation as a critical driver for economic development. This course is an opportunity to learn about innovation management from those in the front lines. How are innovation opportunities identified? What are the challenges to realizing these opportunities and how can the challenges be addressed? What roles are played by processes technologies and the business environment as well as by individuals in organizations? This course will feature speakers who drive innovation in a variety of settings paired with readings from the innovation literature that will help frame the presentations and discussion	PM, ETM
Other DOD Innovation Trainings	CNAS Defense Program	The CNAS Mission Brief speaker series, hosted by Defense Fellow Becca Wasser, features deep-dive discussions with the military and civilian leaders driving strategy and future force planning to delve into how the Department of Defense and the services are innovating and preparing for future strategic and operational challenges. Conversations cover a wide array of topics including future defense strategy and force design, new operational concepts, and crucially, balancing readiness with ongoing operations. Past speakers include the Lt. General Hinote, Air Force Deputy Chief of Staff for Strategy, Integration and Requirements, and Dr. Mara Karlin, Assistant Secretary of Defense for Strategy, Plans and Capabilities, among others.	PM, ETM, LCL
Non-Government Innovation Trainings	Colorado State University: Creative Organizational Innovation	Forward thinking and creative problem solving are valuable abilities in today's ever-changing professional landscape. Many of the most successful leaders and enterprises have flourished because of their willingness to embrace change and innovation. Obstacles are inevitable, but with the right kind of strategic planning and organizational creativity, it becomes much easier to transform ambitious ideas into definitive results. This online digital badge program provides a series of innovation training courses that teach you how to envision, execute, and promote a more creative organizational ecology.	PM, ETM
Non-Government Innovation Trainings	Columbia University: Digital Strategies for Business (Online): Leading the Next-Generation Enterprise	In today's world, almost every business is a digital business. In every industry, processes are being transformed by the proliferation of digital technologies and the rise of disruptive threats. To compete, businesses need to adapt and thrive. Organizations need leaders who can think strategically and harness the digital change to create new value for customers and opportunities for business. This program focuses on how managers can develop new strategies and business models to enable their organization to thrive in the digital age. Case studies will feature both digital trailblazers as well as traditional enterprises that are adapting to the digital era.	PM, ETM, CON, BUS-FM/CE
Non-Government Innovation Trainings	Columbia University: Leading Strategic Growth and Change	Leading Strategic Growth and Change is focused on the process of finding opportunities, launching new ventures, and leading necessary organizational changes to revitalize and transform an organization in times of uncertainty. Participants will learn how to thrive in rapidly changing and highly uncertain environments and will be able to immediately apply their learning to make rapid progress on an issue they identify. If you have ever worried about how to drive new growth or how to make a change initiative successful, you will enjoy the insights developed in this program.	PM, ETM, BUS-FM/CE
Non-Government Innovation Trainings	Cornell University (online): Building Innovation Competencies	To create and sustain a culture of innovation and entrepreneurship in your organization, it is helpful to establish an environment that supports certain mindsets. And these mindsets can create first a culture change in your organization, often followed by a higher financial return on investment. These mindsets are the competencies that convert ideas to impact. In this course, you will learn about and apply three key innovation competencies: lean startup, maker culture, and design thinking. Each of these competencies are used by large and small organizations, resulting in new products and services and satisfied employees and customers. Lean thinking is a form of customer discovery where you will develop a series of hypotheses and then test them. Maker culture is based on the do-it-yourself ethos and can help you prototype and test products quickly, reducing time to market. Design thinking is a process of empathetically listening to and then co-designing with your customers. While the three competencies have some overlapping methodology, one or two of them will best support your innovation strategy and tie in more effectively with your organization's overall strategy.	ETM, PM, T&E
Non-Government Innovation Trainings	Cornell University (online): Developing Innovation Strategy	An enterprise with an innovation culture doesn't just happen. You must plan for both financial success and cultural change. There are several types of and approaches to innovation. How do you create an innovation strategy for your enterprise? In this course, you will begin to create a roadmap called the innovation placemat. You will identify your organization's goals and align your innovation strategy to it. You will cultivate an executive champion and set SMART goals for your new product, service, or technology. You will identify risks and barriers to deployment and create mitigation plans to overcome them. Along the way, you will hear case studies of organizations large and small, private and government, established and startup, and in many domains who have successfully established an innovation strategy with sustainable positive effects on their bottom lines.	PM, ETM

Non-Government Innovation Trainings	Cornell University (online): Evaluating and Scaling Innovation	In this course, you will devise a strategy to manage a portfolio of innovation projects at your organization. You will examine best practices for portfolio management and establish a plan to spread your innovation and innovation culture. Then you will examine typical risks to your scaling strategy and establish a sustainment plan. Finally, you will revise your innovation placemat and present a practice pitch. This activity will prepare you to pitch your innovation placemat at your organization.	PM, ETM
Non-Government Innovation Trainings	Cornell University (online): Implementing Innovation	So far you have created an innovation strategy and established a vision, SMART goals, and outcome measures. You've identified competencies such as lean startup, makerspace, and design thinking, and selected tools to build an innovation culture. Now you will learn how to implement your strategy. After you map key internal stakeholders, you will devise a campaign plan for your strategy and build a dedicated team. You will understand the different motivations of your innovation shop and "the performance engine" and learn to work effectively with performance engine team members. You will further build out your innovation placemat with your implementation plan, identifying policies that can enhance innovation at your organization.	PM, ETM, CON
Non-Government Innovation Trainings	Cornell University (online): Innovation Tools	There are many exciting tools you can use to implement innovation at your organization. These tools are the "hammer and nails" of innovation. In this course, you will learn about 14 innovation tools. You will also see how other organizations have used them to successfully increase cultural and financial ROI, please customers, and improve operational efficiencies. These tools range from simpler activities such as conducting employee training, hosting hackathons, and implementing design sprints to more complex methods such as establishing an external incubator, founding a center of excellence, and acquiring another company. You will then further iterate your innovation placemat.	PM, ETM
Other DOD Innovation Trainings	Dragon Innovation Team Training	DITT is an eight-day virtual course partnered through NSIN to connect our Soldiers and Civilians with the nation's brightest academics. During DITT, Corps personnel learn creative thinking, problem solving, and solution development skills. Each DITT serial has a unique course problem statement to solve a real problem for the Corps. DITT makes us better by educating our people, solving problems, and driving an innovative culture across XVIII Airborne Corps.	PM, T&E, ETM
Other DOD Innovation Trainings	DSI's 3rd Annual DoD Hypersonic Capabilities Symposium	DSI's 3rd Annual DoD Hypersonic Capabilities Symposium will emphasize the continued need to develop American hypersonic technologies and leverage these technologies to achieve U.S. National Security goals. Hypersonic Missiles and Glide Vehicles have the potential to be game changing weapons that could cause the US to rethink its posture and strategy across the globe. The 2021 Hypersonics Symposium will facilitate discussions to accelerate the acquisition of hypersonic platforms that will provide the United States the capabilities to maintain the balance of global power.	PM, LCL, ETM, BUS-FM/CE
Other DOD Innovation Trainings	Expeditionary Warfare School: Military Adaption and Innovation	The pace of change continues to accelerate. In order to better prepare ourselves for decision-making in "Tonight's Warfare," it is critical to establish understanding of how history has defined present warfare, how the Marine Corps conducts warfare, and then finally what threats exist. This three-pronged approach to understanding is the fundamental idea that informs the construct of the Military Adaptation and Innovation (MAI) course at Expeditionary Warfare School (EWS). Once understanding is achieved, the MAI curriculum seeks to provide students and faculty with opportunities to analyze and discuss how to spearhead/advocate for relevant change, as both a member and a leader within the organization.	PM, ETM
DAU Innovation Trainings	FAC 031 - SMALL BUSINESS PROGRAMS	Small businesses make up about 99% of all the nation's businesses and employ half of all Americans, and small businesses are the source for many of our greatest innovations. This module provides Federal contracting professionals and program officials an overview of small business types and programs and provides them with the information they need to encourage small business participation in Government acquisitions. It will also help contracting professionals meet specific acquisition requirements related to small business concerns and achieve agency small business goals, while supporting increased opportunities for small businesses.	PM, CON
DAU Innovation Trainings	FCL-A-0021 To Bid or Not to Bid: Industry Perspective	Learn about industry's perspective on Federal procurements such as what influences industry's decision to bid on a given government requirement and/or get on government-wide acquisition contracts/schedules. This video is from the perspective of three distinguished industry professionals, representing a cross-section of industries both large and small.	PM, BUS-FM/CE, CON
DAU Innovation Trainings	FCL-A-0027 Can We Talk: Industry Day Conferences	Explore how to conduct effective Industry Day Conferences. Understand how to set-up and conduct a meaningful and well defined industry day conference that ensures that both the government and industry, engage in outcomes that are optimal.	PM, CON, BUS-FM/CE
DAU Innovation Trainings	FCL-A-0036 - INNOVATIONS IN ACQUISITIONS (AS)	Gain knowledge about key initiatives and policy updates related to innovation, such as Acquisition Innovation Advocates, examples of implementing innovation (i.e., Office of Personnel Management), and information on the Department of Homeland Security's Procurement Innovation Lab (PIL).	PM, CON
DAU Innovation Trainings	FCL-A-0038 - PROCUREMENT INNOVATION LAB (PIL) PRIMER	This Procurement Innovation Lab (PIL) Primer introduces the Procurement Innovation Lab at the Department of Homeland Security, how it's working to change the procurement culture in the agency, and how its work can help change the procurement culture in your agency. The eight techniques shared are ways to improve the outcomes of your procurements, with the ultimate goal of helping to change the procurement	CON, LCL

		culture in your agency. This is a condensed version of what is taught in the full-day PIL Boot Camp intensive workshop. It is recommended that you review the PIL Boot Camp workbook prior to watching the video. After viewing, students will have an understanding of 8 PIL techniques: - Oral Presentations-Product Demonstrations-Confidence Ratings-Down-Selects-Comparative Evaluations-Selecting Best-Suited, Then Negotiating-On-the-Spot Consensus Evaluations-Streamlined Documentation	
DAU Innovation Trainings	FCL-CM-2500 Category Management 101	This recorded presentation by the Government-wide Category Management Program Management Office gives an abbreviated overview of category management to Federal buyers. By the end of this course, participants will be able to: - Define category management - Explain why the government is adopting category management Students will learn fundamental category management concepts as well as the government's specific approach, how category management will affect them, and about tools they can use to better utilize category management concepts. This recorded presentation by the Government-wide Category Management Program Management Office gives an abbreviated overview of category management to Federal buyers. By the end of this course, participants will be able to: - Define category management - Explain why the government is adopting category management Students will learn fundamental category management concepts as well as the government's specific approach, how category management will affect them, and about tools they can use to better utilize category management concepts. This recorded presentation by the Government-wide Category Management Program Management Office gives an abbreviated overview of category management to Federal buyers. By the end of this course, participants will be able to: - Define category management - Explain why the government is adopting category management Students will learn fundamental category management concepts as well as the government's specific approach, how category management will affect them, and about tools they can use to better utilize category management concepts.	LCL, CON
DAU Innovation Trainings	FCL-CM-3000: Understanding and Applying the new IT Product Service Code (PSC) structure to IT Acquisitions	This course is designed to introduce users to the new IT Product and Service codes and assist them in selecting the most relevant PSCs for IT acquisitions. The PSCs have been modernized for the first time in approximately 40 years, leading to wide-spread changes in how Information Technology Products and Services are acquired, managed, and reported on.	ETM, PM, LCL
DAU Innovation Trainings	FCL-NSF-3001: Understanding and Applying the new Research & Development (R&D) Product Service Code (PSC) structure to R&D Acquisitions	This course is designed to introduce users to the new R&D Product and Service codes and assist them in selecting the most relevant PSCs for R&D acquisitions. The PSCs have been modernized for the first time in approximately 40 years, leading to wide-spread changes in how R&D Products and Services are acquired, managed, and reported on. https://youtu.be/dl_GbQ8TXT8	PM, LCL, ETM
Other Government Innovation Trainings	Federal Laboratory Consortium: What is Technology Transfer	It is the FLC's mission to educate the federal tech transfer community --from newcomer to seasoned professional -- on best practices through in-person and online training. Technology transfer is the process by which existing knowledge, facilities, or capabilities developed under federal R&D funding are utilized to fulfill public and private needs. The videos included are an overview of the federal laboratory commercialization process and the impact technology transfer can have on our economy and everyday lives. Visit federallabs.org to learn more about the FLC and technology transfer.	PM, T&E, LCL, ETM
Non-Government Innovation Trainings	Georgetown: Business Essentials for Successful Managers Bootcamp	Taught by business industry experts and practitioners, this 10-week bootcamp features a blend of online lectures, class exercises, individual, and group work. You'll examine, discuss, practice, and reflect upon the qualities of any successful manager, including effective communication, supporting diversity, optimizing budgets and resources, and problem solving. Leveraging your personal strengths, this program will teach you how to increase team performance and achieve your organizational goals. By the end of the bootcamp, you will know the difference between a manager and a leader and when to be both.	PM, ETM
Non-Government Innovation Trainings	Georgetown: Business Essentials for Successful Managers Bootcamp	Taught by business industry experts and practitioners, this 10-week bootcamp features a blend of online lectures, class exercises, individual, and group work. You'll examine, discuss, practice, and reflect upon the qualities of any successful manager, including effective communication, supporting diversity, optimizing budgets and resources, and problem solving. Leveraging your personal strengths, this program will teach you how to increase team performance and achieve your organizational goals. By the end of the bootcamp, you will know the difference between a manager and a leader and when to be both.	PM, ETM, Bus-CE/FM
Non-Government Innovation Trainings	Harvard University: Disruptive Innovation: Leveraging Multi-Sided Platforms	This program examines what actually happens during the design, development, launch, and scaling of a digital platform business. Moving beyond theory, participants will explore on-the-ground challenges in strategy and management that building a successful multi-sided business platform entails. Participants will identify and develop the skills they need to grow—or compete with—a multi-sided platform venture.	PM, ETM
DAU Innovation Trainings	HBS 421 Innovation and Creativity	Teams that flex their creativity and innovate regularly are simply more successful than others. Learn how to unleash your curiosity, overcome barriers to innovation, take smart risks, and collaborate with others so your organization can continuously improve. You will learn to: Spark curiosity at work. Unlock curiosity at work. Develop innovative ideas.	ETM

		Take business-appropriate risks. Innovate through collaboration.	
DAU Innovation Trainings	HBS 422 Innovation Implementation	Enough talk—it's time to make innovation happen. Transform your idea into a new product, service, or process that will make a real impact to your team, organization, and customers. You will learn to: Identify opportunities for innovation. Focus on your most promising innovations. Test and improve your innovations. Develop a network of supporters for your innovations. Learn from innovation successes and failures.	ETM, PM
Other DOD Innovation Trainings	Immersive Commercial Acquisition Program (ICAP)	Educate and provide top DoD contracting officers with experience on how to effectively acquire innovative commercial technologies from non-traditional defense contractors.	ETM, PM
Other DOD Innovation Trainings	Industrial College of the Armed Forces: Private Sector Fellows Program	Evaluate domestic and international industry, and the government-private sector interfaces that support the national innovation and defense industrial base, to develop and execute resourcing strategy.	BUS-CE/FM, ETM, PM
Other DOD Innovation Trainings	Innovation Project Leaders	The defense acquisition system can be slow and complex – it needs to be hacked! Innovation Project Leaders teaches students to apply lean innovation methodologies to defense acquisition problems. This five-week graduate-level course teaches soldiers modern innovation and entrepreneurship techniques while solving real defense acquisition problems. Soldiers will learn the same proven innovation skills taught to graduate students in over 50 universities across the country. This class focuses on filling a critical missing skill in the capabilities development process – defining evidence-based product features. Learning this skill provides soldiers with the ability to affect emerging capabilities across the development spectrum from the detailed product specifications of a project already in development to the requirements for a new Capabilities Development Document (CDD). Technical experts from the Army Research Laboratory, tech companies, universities and the capabilities development community will work with soldiers to develop real solutions to real problems that can really be implemented. Soldiers will present their final projects at the end of the course.	PM, LCL, ETM, BUS-FM/CE
Non-Government Innovation Trainings	Johns Hopkins University: Applied Innovation for Technical Professionals	“Fail fast”, “crowdfunding”, “agile”, “open innovation”—the nature of innovation is radically changing in the 21st century. How can technical professionals thrive amidst the new models, tools and processes that are creating faster cycles of disruption? This course will address challenges faced by technical managers in creating and sustaining innovation across a wide range of organizations and environments: from government labs to Fortune 1,000 companies to small businesses and startups. Students will learn the many issues involved in turning creative ideas into a product or service and how to gain support for projects, demonstrate value of the innovation, scale to a profitable venture, and sustain the innovation through successive competitive life cycles. Students will also learn about the challenges and techniques for sustaining innovative cultures in large organizations and how to foster “intrepreneurship”—the concept of creating innovations within the processes and cultures of an already established organization. Case studies and interviews with experienced senior managers will provide students with the latest real-world insights. Course Note(s): The weekly seminar-type presentations/discussions are attended via web meeting. Please refer to the course schedule for updated information.	ETM, LCL
Non-Government Innovation Trainings	Johns Hopkins University: Management of Innovation	A critical issue for entrepreneurs and technical managers is how to translate opportunity into competitive advantage. This course explores the management of innovation, including the technical transition of applied R&D into products, the planning and launching of new products, and product management. Management of discontinuous technologies will be explored. The impact of competition by the introduction of new discontinuous technology will be addressed. Managing engineers through the creative process, as well as innovation and technological evolution, will be covered. The course includes both formal and guest lectures. Case studies will be used as an important learning vehicle.	PM, ETM
Non-Government Innovation Trainings	Korn Ferry: Innovation Fundamentals for Defense: 1 Day Program	Our mission succeeds or fails on our ability to re-think challenges, seize new possibilities, and turn new ideas into action faster than ever. Sponsored by the Defense Innovation Unit, Innovation Fundamentals is our an intensive, one-day experience designed from the ground-up to help you think, feel and act as a modern defense innovator. Delivered by defense experts at Korn Ferry, one of the world's foremost experts in leadership development, Innovation Fundamentals combines practical lessons from game-changing businesses with the psychology of behavior change. The result is an intense one-day program tailored to help you become the force that helps make change happen in our unique context.	PM, ETM, BUS-FM/CE
Other DOD Innovation Trainings	Marine Innovation Unit: Marine Expeditionary Force (MEF) Innovation Team (MIT)	Provides a mutual, innovative medium with an opportunity for Marines in the MEF to communicate their ideas, grow innovative knowledge and insight, mass observations and results to (re)assess emerging capability requirements, and incorporate a cyclical process using the aspects of	ETM, LCL

		design thinking based on the warfighting attributes. The MIT's mission is to educate, collaborate, and accelerate the application of technologies and design thinking toward MEF priorities to transition the MEF to the future operating environment by challenging conventional approaches.	
Other DOD Innovation Trainings	METC (Medical Education and Training Campus) Technology Innovation Group	The team, made up of mostly METC instructors, operates four main lines of effort to progress curriculum and instructional delivery that will allow METC students and other trainees to gain exposure to a variety of technological aids that augment the learning environment. These four lines of effort are virtual/augmented reality, 3D printing, video/podcast production, and machine learning/artificial intelligence. "We are a group of volunteers with a passion for innovation and technology that emphasizes a 'grassroots' approach to solving problems around the TRG," stated Air Force Master Sgt. Brian Hermes, an instructor in the METC Radiologic Technologist program and the Alamo Spark lead.	PM, ETM, LCL, CON
Other DOD Innovation Trainings	MIT IKIM (Initiative for Knowledge and Innovation in Manufacturing): Fundamentals of Integrated Photonics	Are you an engineering student or early- to mid-career engineer, in a specialty area that is rapidly adopting optical and photonics-based materials or device designs, to create innovative systems solutions for modern high-tech applications? Are you seeking a comprehensive and yet succinct introduction to silicon-based integrated photonics? Do you want to promptly acquire a common lexicon and technical perspective to help you begin to envision new application-specific systems components, that can leverage the unique optical functions of integrated photonics? Welcome to Fundamentals of Integrated Photonics: a self-paced, modular gateway course that upskills you in the foundational principles of silicon-based materials and devices, and in integration design strategies for planar photonics links. Silicon-based integrated photonics is a modern engineering technology that caps thirty-plus years of research and development, into hybridizing the information-relay capacity of optical fiber telecommunications, with the processing infrastructure of microelectronics. While the early days of silicon photonics presumed this synergy to enable ever-higher computational performance for microprocessors, the last two decades have begun to open up transformative new opportunities for it in cloud computing datacom, microwave and millimeter-through terahertz wireless, chemical and biological sensing, augmented imaging, and quantum computing area applications—in addition to next-generation telecom.	PM, ETM
Other DOD Innovation Trainings	MIT IKIM (Initiative for Knowledge and Innovation in Manufacturing): Integrated Photonics Simulation Library	In this introductory course, you will explore a library of interactive web simulations that help you build intuition for PIC component design. You will move beyond ray optics to learn the basics of modal analysis and mode superposition using novel methods of 2D and 3D data visualization. The simulations, videos, and exercises will help you gain an advanced foundation in integrated photonics that will be useful for both novice and expert PIC designers alike.	T&E, PM, ETM
Other DOD Innovation Trainings	MIT IKIM (Initiative for Knowledge and Innovation in Manufacturing): Integrated Photonics Test: Passive Devices	Prof. Hu (MIT) reviews test characterization methods for passive integrated photonics components, including fiber-to-chip coupling schemes, waveguides, spirals, Mach Zehnder Interferometers, Y-splitters, ring resonators, and directional couplers. Waveguide characterization will focus on loss and dispersion measurements, and examine wavelength and polarization dependencies. Prof. Jaime Cardenas (U of Rochester) will offer his expertise in Design for Manufacturing (DfM) and testing at a wafer-scale. This three-week asynchronous course will be released in Spring 2021.	PM, T&E, ETM
Other DOD Innovation Trainings	MIT IKIM (Initiative for Knowledge and Innovation in Manufacturing): Photodetectors and Modulators for Silicon Photonics	The course will discuss the basic principles of designing and fabricating photodetectors and modulators for silicon photonics. The devices are often fabricated in research fabs but can easily be adapted for the use of PDKs. The first part will review photodetector requirements and the materials and device designs that can meet those requirements. Examples of fabricated photodetectors will be given and simple process flows will be discussed.	PM, T&E, ETM
Other DOD Innovation Trainings	MIT IKIM (Initiative for Knowledge and Innovation in Manufacturing): Photonic Integrated Circuits 1 (PIC1) Fabless Design of Photonic Integrated Circuits within the AIM Photonics Foundry	The course is structured around the design of a basic transceiver, and starts off with an overview of fabless PIC design followed by a review of passive photonic devices (waveguides, bends, splitters/combiners, interferometers). You're then walked through the process of designing the transceiver chip with a focus on two active devices (electro-optic modulator, photodetector). The course highlights device compact models as the PDK methodology for flexible simulation and layout of PIC chip designs, and rigorously trains you in EPDA industry-standard software.	PM, ETM, CON
Other DOD Innovation Trainings	MIT IKIM (Initiative for Knowledge and Innovation in Manufacturing) : Photonic Integrated Circuits: Sensors	Have you wondered about how a PIC sensor works? This new course covers the basics of photonics chem-bio sensing components and techniques. This will provide learners with insights that will lay the foundation for them to envision their own PIC sensors. They will learn to make judicious decisions regarding wavelengths, materials platforms, light sources, spectrometers, and photodetector solutions based on their desired application. The course includes a diverse line-up of invited lectures with leading-edge PIC sensor experts from around the world, who review critical metrics for designing photonics sensing systems.	PM, ETM, BUS-FM/CE
Other DOD Innovation Trainings	MIT IKIM (Initiative for Knowledge and Innovation in Manufacturing): Understanding Cost and Environmental Impacts of Photonics Manufacturing	Can sustainable integrated photonics be produced cost effectively? The goal of this class is to make students aware of the key cost and environmental issues in integrated photonics manufacturing and to expose them to the core methods of evaluating production cost and environmental impact. Specifically, these tools are process-based cost modeling and environmental lifecycle assessment. This course was developed to cultivate awareness of these issues and the corresponding analytical tools within designers of photonics integrated circuits, but the	PM, ETM

		strategic nature of these topics makes the content relevant for most individuals engaged in design, production, or marketing of such products. The course includes a diverse line-up of invited lectures with leading-edge experts from around the world, who review critical methods for evaluating photonics.	
Other DOD Innovation Trainings	National Intelligence University: MST 656 The Economics of Technology	This course examines resource allocation, intelligence collection, and strategic philosophies from an economic perspective, as they jointly apply to technology and innovation. At the completion of the course, the students will be able to assess how technological innovations are affected by various economic inputs and how those innovations are then applied to benefit the nation's ability to develop its defense. Practical knowledge gained in the application of this course will partially fulfill U.S. congressionally mandated reforms within the acquisition and intelligence interface.	PM, ETM, BUS-CE/FM
Other DOD Innovation Trainings	National Intelligence University: MST 659P Research, Development, Test, and Evaluation (RDT&E) Intelligence (former MST 698R)	This course examines principal facets of science and technology intelligence (S&TI): security, intelligence, and counterintelligence aspects of worldwide scientific research, development, test, and evaluation (RDT&E), and system acquisition. The economic drivers and effects of technical innovations are studied, with special attention to disruptive technologies that have large and rapid social, economic, or military consequences. Worldwide academic, commercial, and government research in physical science, biomedical science, and engineering is considered, as well as the acquisition processes used to design and deliver innovative devices and systems, and to verify that the devices and systems meet their design requirements. These matters are viewed from an intelligence and counterintelligence perspective, with an eye to how they can be exploited or disrupted.	PM, ETM
Other DOD Innovation Trainings	Naval Post Graduate School: Applied Design for Innovation (697)	This curriculum provides students with experiential learning around the challenges of innovation. Students will use a blend of design-thinking and analytic social science methods to engage in the problem-framing, ideation, creative collaboration, and stakeholder engagement necessary for successful innovation. This curriculum is designed to meet the changing needs of Special Operations, partners and allies in the context of rapidly changing technology and Great Power Competition.	PM, ETM
Other DOD Innovation Trainings	Naval Post Graduate School: INFORMATION SYSTEMS MANAGEMENT (870)	The Information Age has generated a revolution in the means in which we conduct business and warfare. New technologies have changed the traditional views of the marketplace, supply chain management, and logistics. As the range and complexity of computer applications have grown, the need to manage and exploit those resources has increased. This curriculum provides both the technical skills and business acumen to deal with a constantly evolving digital world. The information Systems Management (MBA) curriculum provides the knowledge skills and competencies to: <ul style="list-style-type: none"> • Manage the acquisition of Information Systems. • Manage Information Systems and infrastructure support afloat and ashore. • Solve Information Systems engineering and management problems individually and in teams. • Effectively manage and lead in today's constantly changing digital world. • Develop and implement effective strategies and policies to take advantage of technological opportunities and mitigate risk. • Assimilate new technologies and transform organizations, processes, and strategies to compete in the marketplace or on the battlefield 	PM, CON, BUS-FM/CE, ETM
Other DOD Innovation Trainings	Naval Post Graduate School: SYSTEMS ENGINEERING AND ANALYSIS (308)	This curriculum is designed for combat officers, and will enable the student to exploit emerging technologies to achieve war-fighting advantages. The students will blend their operational experience with a thorough technical education to expeditiously integrate new technological capabilities into operational applications. The officer will be able to evolve current tactics and doctrine to expeditiously leverage imminent technological advances. This warfighting oriented program provides a solid understanding of the principles and applications of systems engineering, and employs these principles to gain insight into operational problems. This program includes a core of courses, in fields of modeling, simulation, weapons, and sensors that will enhance understanding and analysis of selected case studies and weapons systems. The program is designed as a highly integrated graduate education experience. There will be lectures, team projects, and individual research as well as seminars from visiting experts. Each arriving officer is evaluated for existing knowledge, skills and competencies and an individual course of study developed.	PM, LCL, ETM
Other DOD Innovation Trainings	Naval Post Graduate School: TEMASEK DEFENSE SYSTEMS INSTITUTE (TDSI) PROGRAM (MS	This joint Naval Postgraduate School (NPS) and National University of Singapore (NUS) program provides qualified personnel with an advanced understanding of the dynamic complexity of military warfare for exploiting emerging technologies to achieve war-fighting advantages. The joint curriculum provides a platform for the education and the integration of operational staff and defense technologists to plan, design, develop, create, operate and sustain Integrated Military Forces of the 21st Century. The first two quarters (six months) of the joint curriculum are conducted at NUS by faculty from NUS and NPS, and provide a firm grounding in key technical and project management skills. The third to sixth quarters (one year) are conducted at NPS, where the students will enter into	PM, CON, BUS-FM/CE

		designated specialization tracks such as Communication Systems, Sensor Systems, Operations Research, Information Assurance and Guided Weapons Systems. The students blend their operational experience with a thorough technical education to expeditiously integrate new technological capabilities into operational applications.	
Other DOD Innovation Trainings	Naval PostGraduate School: Innovation Certificate	This certificate supports students who are working to bring innovation into adoption. The three courses teach how to design for a military environment, how processes of adoption work in organizations and communities, and how to learn the leadership skills to mobilize a community to adopt the innovation. The certificate includes a capstone project that applies the learning from the three courses to design a significant innovation and bring it into adoption in a military community. This certificate is delivered online with a mix of synchronous and asynchronous elements. It includes coaching for the capstone project. An optional in-person workshop will be offered for students who want to learn more about hands-on practices.	PM, LCL, ETM, BUS-FM/CE
Other DOD Innovation Trainings	Naval War College - EL 605 Science, Technology, and Strategy	What role does technology play in the development and transformation of strategic thought? At one extreme, some argue that technology is no more than strategy's handmaiden; others argue that technology transforms strategic thought by inventing new forms of action and destruction. This course eschews both extremes, arguing that new ways of understanding the history and sociology of science and technology demand new ways of understanding the dynamics of technology, strategy, and state power. Rather than study these domains separately, the course will use historical and contemporary materials to examine how new forms of scientific and technological knowledge shape, and are shaped by, strategic concerns. We aim to provide students with a toolkit to better understand the incorporation of technical knowledge into the modern state's strategic focus.	T&E, PM, ETM
Other DOD Innovation Trainings	Naval War College - EL 660 Cybersecurity: Preparing for a Post-Western, Hostile, Advanced Cybered World	The course will be an overarching look at the cybered world threat development. The course will examine wider issues where cyber space and other trends are likely to intersect to produce surprises for the U.S. and other civil digitized societies. The course will push the envelope to explore not only what exists today but what can be foreseen as likely sources of future surprise including emerging technologies such as artificial intelligence, and what trends we should follow to continuously recalibrate our anticipation of both technological and societal developments associated with cybered.	T&E, PM, CON, ETM
Other DOD Innovation Trainings	Naval War College - EL 681 Information Warfare, Electromagnetic Maneuver Warfare and Cyberspace Operations	This course examines the importance of the information environment in contemporary warfare, the emergence of cyberspace as a warfighting domain, and the challenges associated with the joint military operations, as it pertains to cyberspace and electromagnetic spectrum operations through electromagnetic maneuver warfare (EMW) and information warfare (IW). Today's operating environment requires commanders and their staffs to think beyond traditional military solutions. This is an area in which concepts are ever evolving, technology is nearly impossible to baseline, and available operational expertise is constrained. Throughout the semester, we will investigate and seek to understand how commanders can leverage IW, EMW and cyberspace capabilities in operational planning and execution.	ETM, CON
Other DOD Innovation Trainings	Naval War College - EL 780 AI for Strategic Leaders – Unpacking the Black Box	This is a project-based course which prioritizes seminar time for collaboration between student teams and external partners in industry, academia, operational units, and federally funded research and development centers. Students will identify an operational problem and design a proposal for AI-based solution in accordance with expectations and protocols of Defense authorities such as the Defense Innovation Unit and the Rapid Reaction Technology Office (DASD EC&P). The Chief of Naval Operations has prioritized the "integrat[ion] of decision science into leadership development [...] to improve our understanding of human judgment and, through that understanding, improve decision-making and leadership" (FRAGO 01/2019). This course responds to this call and provides a team-based environment to learn fundamental concepts of data science and how they apply in operational contexts. The course will explore the strengths, weaknesses, opportunities of, and threats to systems employing Artificial Intelligence in its application to contemporary operational challenges	ETM, PM
Other DOD Innovation Trainings	NDU: ES 6104 - Innovation and Entrepreneurship in Defense Acquisitions	Sustaining a technological advantage requires defense acquisition leaders to balance on the edge of a coin. On one side, technological innovation continues to transform our world at an increasing pace. Examples include robotics, information and communications technology, genetics, nanotechnology, biotechnology, and more. On the other side, the decision support systems within the DoD progress at the same methodical pace. Thus the edge, where defense acquisition leaders operate, is a tension between the dynamic world of innovation and a defense acquisition process characterized by highly defined methods, budgets, schedules, and oversight requirements. Through a mix of seminar lessons, case studies, and guest speakers, ES 6104, seeks to understand how DoD acquisition programs can guide, enable, and leverage innovation. Field studies are planned for the Boston, MA, to explore government and industry innovation ecosystems	ETM
Other DOD Innovation Trainings	NDU: ES 6134 - Industrial Mobilization and Competition	Industrial Mobilization and Competition (IMC) explores two capabilities required of the national security innovation and industrial base: (1) Mobilization in production to in response to conflict or national crisis ("sprint") and (2) competition in innovation to outpace and deter strategic rivals over the long-term ("marathon"). IMC investigates mobilization through explorations of history, modern challenges, and current policies and procedures. The course investigates competition by comparing innovation investment incentives and patterns relative to rival nations and	ETM

		evaluating the costs and benefits of active innovation policy. IMC further supports these investigations by examining the challenges, trends, and management of global supply chains	
Other DOD Innovation Trainings	NDU: ES 6206 - Industry Analysis	The Industry Analysis (IA) course provides students with tools, frameworks, and vocabulary to understand firm behavior through the lens of firm leadership. By focusing on leadership incentives, the course identifies policy implications for government action – or non-action – in improving the ability of the related industry to meet national innovation and defense industrial base requirements in the context of strategic competition. These implications then support the student’s Industry Study in developing policies to help industry improve or sustain its ability to meet U.S. national security requirements in the context of the 2021 Interim National Security Strategic Guidance and 2022 National Defense Strategy.	PM, ETM, BUS-CE/FM
Other DOD Innovation Trainings	NDU:ES 6105 - Leading Innovation in Business and Government	With the recent interest in bridging the gap between the U.S. military and cutting-edge companies in Silicon Valley, the DoD has come to recognize the value of leaders that can consistently create the conditions for innovation in organizations across a broad spectrum, from technology development to leadership of large military units. As such, this seminar begins to study how to lead innovation by investigating the topic through the lens of business theory, to include the writings of Harvard Business School Professor Clayton Christensen and other prominent authors and through the discussion of key case studies. Seminar members then apply this theory as they meet with business and government leaders from such organizations as the Defense Advanced Research Projects Agency (DARPA), In-Q-Tel, XPRIZE, Sirius XM, and Innovation Works to observe and discuss innovative business concepts and public sector acquisition policies and practices. Field studies are planned for the Pittsburgh, PA, robotics, and autonomous systems innovation ecosystem	ETM
Other DOD Innovation Trainings	Next Generation Materiel Readiness Forged through Data Advantage, Technology, and Innovation Symposium	Here, members of the maintenance and sustainment communities in both the public and private sectors discuss current and future initiatives and issues, share lessons learned, establish and maintain valuable networks, and recognize the best DoD maintenance units.	ETM, PM, CON
Non-Government Innovation Trainings	Northwestern: Leading and Sustaining a Culture of Innovation	This intensive program takes you through all the essential elements of creating, leading and sustaining a culture of innovation. Our expert faculty and industry-practitioners will guide you through an exploration of how to instill an innovation mindset within your organization, how to identify resources and commercialize innovation opportunities, how to foster innovative behaviors and values, how to build innovation capabilities and how to create an agile and innovative organization. Every participant will be coached on how to develop an innovation strategy for their own organization and an Innovation Culture Blueprint. Some participants will also present their strategy and blueprint to their peers.	PM, ETM, LCL
Other DOD Innovation Trainings	NSIN Bootcamp: U.S. Army XVIII Airborne Corps ¹¹	Together, we will transform XVIII Airborne Corps to meet the challenges of today and tomorrow. All of us, regardless of rank, are empowered to solve problems and identify opportunities to improve how we fight and how we support our people. We will establish the right culture, processes, and capture our initiatives in programs of record that will outlast all of us.	ETM, PM
Other DOD Innovation Trainings	NSIN Capstone: Arizona State University: National Security Academic Accelerator Program	NSA2 launched in 2021 as an exciting new partnership with the National Security Innovation Network. Its purpose is to leverage ASU’s active presence in the defense innovation ecosystem to advance development of dual-use ventures capable of serving both commercial and defense markets. Throughout the fall and spring, participating teams engage with the Department of Defense, as well as with business development professionals and industry contacts and will engage with targeted training and mentorship experiences to move their ventures forward. ASU Capstone students developed a loading system with Naval Air Systems Command (NAVAIR) Cargo and Special Operations for the CH-53 Super Stallion, VF-22 Osprey, and CH-47 Chinook helicopters. In March 2022, the team traveled to Marine Corps Air Station Yuma to learn about the aircraft that they were working on and ask Marines questions to better understand how loading systems should function.	ETM, PM, LCL
Other DOD Innovation Trainings	NSIN Capstone: ¹² Georgia Tech	Capstone students innovated a software application with U.S. Special Operations Command (USSOCOM) to modernize departure airfield control officers (DACOs) processes, adapting operational procedures such as personnel and inventory reloading onto aircraft during a crisis.	ETM, LCL
Other DOD Innovation Trainings	NSIN Capstone: Ohio State University	Students in the inaugural cohort of the Masters in Translational Data Analytics program at Ohio State University presented their Capstone solutions to DoD leadership at the end of the semester.	PM, ETM
Other DOD Innovation Trainings	NSIN Capstone: San Diego State University and Rice University	NSIN Capstone students at San Diego State University and Rice University prototyped boats for the U.S. Coast Guard this semester. These student technologists improved coastal surveillance, detection, and interdiction capabilities against threats posed by the transit of drugs in autonomous surface vessels across the maritime border with Mexico and into California. The students at Rice University also received a cash award of \$3,000 as the top innovation prize at the university’s engineering design showcase event, Willy Revolution Awards for Outstanding Innovation.	ETM
Other DOD Innovation Trainings	NSIN Capstone: Texas A&M	Ten students improved a vital computer-aided design system with the guidance of mentors from the U.S. Army Combat Capabilities Development Command (DEVCOM) Analysis Center. The students also visited DEVCOM to demonstrate their prototype.	ETM

¹¹ NSIN offers multiple “bootcamps” but this is the only one that had enough information to be integrated into the study.

¹² NSIN Capstones appear to be individual events. As the data represents a snapshot in time this data was included.

Other DOD Innovation Trainings	NSIN Capstone: University of Colorado at Denver	University of Colorado Denver (CU Denver) students in NSIN Capstone developed cost-effective solutions for first responders to communicate and navigate during indoor emergencies, working with staff and resources from the Air Force Research Laboratory (AFRL).	BUS FM/CE, ETM
Other DOD Innovation Trainings	NSIN Capstone: University of Hawaii	Capstone teams showcased their prototypes to over 70 people from the DoD, UH Mānoa faculty, and economic developers and researchers at Defense Powered by Innovation in April 2022.	ETM
Other DOD Innovation Trainings	NSIN Capstone: Wash U	WashU Capstone students presented Arctic research to National Geospatial-Intelligence Agency (NGA) at Moonshot Labs.	ETM
Non-Government Innovation Trainings	Penn State World Campus: CORPORATE INNOVATION AND ENTREPRENEURSHIP	The graduate certificate in Corporate Innovation and Entrepreneurship is a 12-credit online program for industry professionals who are interested in developing a knowledge base and skill set in the area of innovation and entrepreneurship in the corporate sector. The program focuses on all aspects of corporate innovation management, such as: ideation, product / service development, managing customer experiences, brand management, entrepreneurial leadership, innovation strategies and methods, developing innovative corporate cultures, leading innovative teams, benchmarking, competitor assessment, future trend tracking, new venture creation, and technology commercialization. The certificate is geared towards individuals working in small businesses, on up to and including global conglomerates, where innovation and continuous improvement are imperative. Individuals interested in launching startup companies will also find this program beneficial.	ETM
Non-Government Innovation Trainings	Penn State World Campus: ENTR 820 Corporate Innovation Strategies and Entrepreneurial Methods	Explores the methods used to foster innovation and entrepreneurship in a corporate setting, with a special emphasis on how organizations foster creativity, innovation, and new venture creation.	PM, ETM
DAU Innovation Trainings	PMT 4020 Executive Program Manager's Course	In the classroom (CLRM) Executive Program Managers Course (EPMC) you will: Capitalize on enhanced thinking approaches to evolve organizational constructs and portfolio strategies Optimize portfolio capabilities management by leveraging innovative approaches aligned to customer need and available resources Synthesize leadership styles and impact to balance resources with stakeholder expectations Construct governance processes to support successful capability delivery and sustainment Develop your workforce by aligning personnel to meet mission need while cultivating skills Employ Business Acumen to grow the industrial base and improve acquisition outcomes Strategize at the enterprise level to maintain alignment and awareness of key stakeholders IMPACT: EPMC is designed to increase the collaboration skills and leadership capabilities of leaders selected to serve as program and portfolio managers, and to provide the skills and abilities propelling them to be the top in their Service and DOD. EPMC takes a multidimensional approach to developing key leaders by combining lessons, reflective learning, self-evaluation, networking opportunities, and immersive simulations to provide attendees new insights and requisite abilities. During this three-week offering, you will: Conceive portfolio-level changes to improved future outcomes Develop and assess value propositions for innovative approaches Analyze portfolio-wide leadership styles to consider constraints and leverage diverse opinions Compile governance processes for organizational operation and capability delivery Evaluate business strategies and consider the impact on the industrial base Appraise stakeholder engagement to influence key relationships You will work with a team of faculty and peer experts from diverse business disciplines, providing in-depth knowledge in core areas including Thinking Models, Integration, Leadership and Management, Governance, Workforce Development, Industry and Stakeholder Engagement.	PM, ETM
DAU Innovation Trainings	PMT 4050 Leading Change to Drive Innovative Culture	The course is designed to take you on a journey of self-discovery with focused attention on practicing innovational techniques to address real world problems through simulation exercises. Enter the course with your team's wicked-hard-challenge and develop a breakthrough idea through peer-to-peer dialogue, simulation exercises and instructor-led training using intersectional thinking. Depart the course with a breakthrough idea for your team and expanded knowledge on innovational thinking for other challenges in your organization. Immerse yourself into several simulations and explore radically different thinking in pursuit of new breakthrough ideas for your team and program. Work in a peer-to-peer learning environment and grow through the art of team collaboration.	PM, CON, ETM
DAU Innovation Trainings	SBP 102 Introduction to Small Business Programs - Part B	Only taught in VILT mode, see SBP 102V. The course goal for SBP 102 is to apply basic knowledge of the legislation, policies, acquisition process, and market research techniques required to advise stakeholders effectively, to advocate for small business participation in defense acquisitions, and to educate small businesses on doing business with the Department of Defense (DoD).	PM, CON

Other DOD Innovation Trainings	School of Advanced Air and Space Studies: SAASS 660 Technology and Military Innovation	This course presents theories and utilizes case studies to help students understand technological evolution throughout human history, from the Stone Age to Artificial Intelligence. It also considers why military organizations successfully innovate—or fail to do so. The course draws on theories of complexity, computation, and heterogeneous engineering, but also emphasizes the human and social aspects of innovation	PM, ETM
Other DOD Innovation Trainings	SOF Design and Innovation Basic Course - Virtual	Course is fully online blending asynchronous lectures students can watch at their own pace with scheduled faculty guided group video conferences. Faculty and students meet once per week for 3 to 4 hours. Course provides foundational military design education for students interested in organizational change, innovation, creativity and disruptive thinking for SOF applications in complex emergent contexts. Students learn how to operate in design teams, use a wide range of multi-disciplinary design concepts in a flexible, adaptive methodology for fostering reflective practitioners and change agents across the SOCOM enterprise.	ETM, PM
Other DOD Innovation Trainings	Squadron Officer School: Design Thinking	In Gen Brown's strategic approach for Air Force success titled "Accelerate Change or Lose," he calls on us to "place capability in warfighters' hands faster—through innovation, experimentation and rapid prototyping, and a collaborative approach with our service and industry teammates." The Strategic Design curriculum applies the team building techniques and leadership behaviors learned in the Leadership curriculum through the practice of human-centered design thinking, which is a set of activities used in industry to drive creative problem solving. Using a complex organization as the foundation, this curriculum is delivered in a series of workshops starting with empathy building and analysis, and working through problem definition, idea generation, low resolution prototyping, and testing. The Strategic Design week is aptly referred to as "Accelerating Change and Solving Problems Together."	PM, ETM
Non-Government Innovation Trainings	Stanford University: Achieving Innovation through Inspiration XINE110	It is often said that success is 1% inspiration, 99% perspiration. Ironically, teams tasked with growing business ventures often neglect the 1% that fuels the 99%. Inspiration isn't something you wait for. It's something you work for. With practice, you can approach the world as a rich source of raw material to provoke new ways of thinking, and benefit from diverse collaborators to get inspired when you need it the most. This innovation course equips you with the critical tools you need to consistently and repeatedly source inspiration and turn unknowns into radically new products and services. Use simple-yet-powerful tools to "think outside the box" and overcome business bottlenecks Collaborate effectively with your team and generate ideas that drive innovation Apply strategies for continuously filling your "Innovation Funnel" with great ideas Increase your likelihood of delivering breakthrough solutions, goods or services	PM, LCL, ETM
Non-Government Innovation Trainings	Stanford University: Building Company Culture XINE242	People are the heart and soul of your organization. The mindsets and values of your employees define your company and ultimately determine the experience of your customers. Knowing how to build processes that create, foster, and reinforce culture helps you stay true to your organization's vision, even as it expands. In this course, you'll learn how to thoughtfully and meaningfully grow company culture. Attract and hire the right employees Form, manage, and align effective teams Create incentives, offer feedback, and manage friction Rebuild or strengthen your existing company culture Operationalize company mindset and avoid losing your culture while scaling up	PM, ETM, T&E
Non-Government Innovation Trainings	Stanford University: XINE 214 Empathize and Prototype: A Hands on Dive into the Key Tools of Design Thinking	Move beyond theory and dive into hands-on practice in the art of innovation. In this course, you'll be introduced to the key concepts and tools of design thinking by two of the Stanford d.school's top design thinking practitioners. Through a series of application-based exercises, you'll learn step by step how to approach new projects and challenges with the mindset of an innovative problem-solver. Build empathy with your customer to gain valuable insights Use rapid experimentation to prototype concepts quickly and effectively Gain early user feedback to reduce time to launch Synthesize your project findings into a compelling problem statement	PM, ETM, BUS-FM/CE
Non-Government Innovation Trainings	Stanford University: XINE 229 Leading Innovation	Do you have what it takes to inspire people to practice—rather than just talk about—innovation? In this innovation course, Professor Robert (Bob) Sutton digs into the differences between leading innovation and managing routine work. You'll explore the hallmarks of skilled leaders with a special focus on staying in tune with the people you lead. The course features interviews with four, star innovators: Sylvia Acevedo, tech executive, and entrepreneur; Michael Dearing, venture capitalist, and senior business strategy leader; Perry Klebahn, Director of Executive Education at the Stanford d.school; and Carl Liebert, global business leader. Embrace "failure" and learn from it Foster innovation by combining creativity with practical application	PM, ETM

		Build and maintain a motivated, cohesive team of doers Lead organizations and teams through challenging times Turn knowledge into action by overcoming common traps that prohibit the implementation of innovation	
DAU Innovation Trainings	STM 0010 Prototyping and Experimentation	This Online Training (OLT) course provides an overview of the role of prototyping and experimentation in the DoD acquisition process, the fundamentals of prototypes and experiments and the process for planning and executing prototyping projects and experiments. It is based on the DoD Prototyping Guidebook and the DoD Experimentation Guidebook	T&E, ETM
DAU Innovation Trainings	STM 1010 Introduction to DoD Science and Technology Management	This online training (OLT) course provides an introduction to the management of developing and transitioning new technologies from the Department of Defense research enterprise to its customers, including acquisition programs, warfighters, and industry. It provides an overview of the role of science and technology in the systems acquisition life cycle. The course focuses on the processes, techniques, policies and best practices that will be employed to ensure the Department is investing in appropriate technologies and that those technologies are refined, matured, and protected to be ready for use in a timely fashion to provide its warfighters with the technological edge needed to accomplish their mission.	PM, ETM
DAU Innovation Trainings	STM 2040 Technology Project Management	This Online Training (OLT) course provides select topics, procedures and mechanisms that can be used to develop and transition new technologies into the DoD's warfighting systems. It provides learners with the opportunity to identify strategies to achieve project goals, identify project planning activities, determine appropriate science and technology business arrangements, identify elements of a project technical review, and identify why technology transition is challenging and important.	PM, ETM, T&E
DAU Innovation Trainings	STM 204V Intermediate Science and Technology Management	This virtual instructor led training (VILT) course provides Science and Technology professionals with an understanding of the procedures and mechanisms that can be used to develop and transition new technologies into the DoD's warfighting systems. It provides students with the opportunity to apply critical skills in areas such as technology evaluation, budgeting, schedule management, contracting strategies, transition agreements, risk/opportunity management, intellectual property, and technology verification. Students apply these skills in evaluating a set of technologies as they progress from applied research to the point of transition to a program of record.	PM, ETM
DAU Innovation Trainings	STM 304V Leadership in Science and Technology Management	The virtual instructor led training (VILT) course is designed for senior DoD science and technology managers, this course focuses on the application of leadership skills within DoD science and technology organizations. It emphasizes the principles of strategic planning, technology roadmap development and technology portfolio development prioritization and evaluation. The course challenges students to think critically in instructor facilitated exercise to make sound recommendations on which technologies to pursue consistent with organizational core functions, customer requirements and technology opportunities.	PM, ETM
Non-Government Innovation Trainings	Temple University: Innovation Strategy	A graduate certificate in Innovation Strategy is an efficient, high-impact program that prepares the next generation of innovation leaders and high-potential employees to build agile organizations, strategically drive innovation, and make decisions appropriate for the rapidly changing global competitive landscape. It is part of a system of entrepreneurship and commercialization support programs offered by the Innovation and Entrepreneurship Institute (IEI).	PM, LCL, ETM
Non-Government Innovation Trainings	Texas A &M: BUSA 516 - Emerging Technologies and Business Innovations	This course covers emerging technology applications in business analytics and management. The hands-on course contents include the mechanisms of new technologies and how managers can integrate technology innovations into their decision making process.	PM, ETM
Non-Government Innovation Trainings	UC Berkeley: Innovation Management	This 1 unit elective provides an in-depth look at the discipline and function of innovation management. The class begins by answering the questions, "What is innovation, innovation management, and how does it differ from product management". Modules then cover setting an innovation strategy, building support structures inside firms, managing innovation pipelines and processes, and creating a holistic innovation culture. Last, students will get an in-depth look at a "day in the life" of an innovation manager and finish with a class project.	PM, ETM
Non-Government Innovation Trainings	UC Berkeley: Special Topics in Technology Innovation and Entrepreneurship Topic: Future of Technology: How Innovators Critically Examine Game Changing and Time Wasting Technologies	Why did Altavista fail, and Google succeed? Same for Myspace and Facebook? Was it technology, marketing, people, luck, execution, or something else? It is trivial to discern good ideas and profound technological shifts after the fact. But how could you become your own futurist and learn to analyze emerging trends and foretell the outcome? We will study and analyze both failures and successes in virtual reality, blockchain, artificial intelligence, healthtech, and other technologies. Students will conduct literature reviews, netnographic analysis, and case studies in order to identify patterns that they could later apply to their own research, career decisions, or entrepreneurial ventures. The format of the class will include lectures, guest speakers from distinguished entrepreneurs and innovators, peer-reviewed presentations, quantitative and qualitative data gathering, and group exercises. Students will produce a technical report highlighting the barriers for adoption of emerging technologies. The report has the potential to be published and added to your professional portfolio. Critical thinking and the ability to question everything are the only prerequisites for this analytical survey course. This class is open to students from all majors and levels. Some seats in the class may be reserved for students in certain majors to ensure that we have the appropriate mix of	PM, LCL, ETM

		technical backgrounds, but the remaining seats are open to anyone. SCET welcomes students with diverse backgrounds, perspectives and skills to join our collider environment where we create new ideas!	
Non-Government Innovation Trainings	UC Berkeley: Special Topics in Technology Innovation and Entrepreneurship Topic: Leadership Exploration and Discovery (LEAD)	Leadership Exploration and Discovery (LEAD) prepares technical and business minded students to be leaders at any level of a technology organization. Instruction in this class takes many forms including individual learning through assigned reading, videos, case studies and self-assessments; and in-class learning with lectures, immersive activities, and dynamic guest lecturers. Throughout this course, you will learn who you are as a leader and how you can become the leader you want to be. This course explores key leadership concepts relevant to the high-technology world in firms of all sizes from startups to large corporates. Topics include leadership traits and characteristics, leading when not in charge, leading through change / uncertainty / chaos, creating and leading teams, effective leadership communication, leading remote / distributed workforce, how to promote innovation, and leadership tools and techniques. This is an introspective course. Students who push themselves to explore what is important to them and who they are authentically be as a leader will gain the most from this course. This course will immerse students in entrepreneurial leadership concepts, principles, mindsets, behaviors, and philosophies necessary to thrive in technology firms today. The course focuses on building skills such as leading effective teams, leading product decisions, leading in uncertainty, and effective communication. The class will explore leadership at all levels from individual contributor to founder and CEO, and students will examine techniques required for success in various entities. Students will get a sense of how leadership impacts an organization, and how they can lead, grow, and improve to ensure their organizations are effectively led. The goal is to arm students with specific knowledge both about leadership and about themselves for them to be effective leaders now and into the future.	PM, ETM, LCL
Non-Government Innovation Trainings	UMBC: Entrepreneurship, Innovation, and Leadership	This certificate has an emphasis on diffusing innovation and design thinking. It is intended for someone who wants to drive change through innovation and incorporate innovative practices in their workplace. Students will learn to successfully harness, promote and diffuse innovation and an innovation mindset across all levels of an organization. Students will learn the models of innovation to prepare individuals in leadership positions for effective decision-making. Students will learn to foster an innovative environment of communication and collaboration, including how to identify the Rules of Engagement in a collaborative environment, spot the barriers to collaboration, and see the difference between getting collaboration right and wrong. Students will learn how to find and frame problems in creative ways using techniques such as ethnographic observation, prototyping, storytelling, journey mapping, value chain analysis, and divergent/convergent idea generation.	PM, ETM, BUS-FM/CE
Non-Government Innovation Trainings	University of Maryland: ENES463 Strategies for Managing Innovation	Emphasizes how the technology entrepreneur can use strategic management of innovation and technology to enhance firm performance. Examines the process of technological change, the ways that firms come up with innovations, the strategies that firms use to benefit from innovation, and the process of formulating technology strategy. Provides frameworks for analyzing key aspects of these industries and teaches students how to apply these frameworks.	ETM
Non-Government Innovation Trainings	University of Maryland: ENES660 Fundamentals of Product Management	Provides a comprehensive survey of product management and its growing role in producing technology-driven products that customers love. Guides students through the product lifecycle and market lifecycle, diving into the competencies needed at each stage. Topics include startup and corporate strategy, product strategy, vision setting and evangelism, development lifecycle approaches based on customer involvement and product stage, the various types of innovation at each stage of the lifecycle, and how the product manager leads the team through it all. Learn the basics of customer discovery, product discovery, product delivery, and the core-context model for managing products through maturity.	ETM
Non-Government Innovation Trainings	University of Maryland: ENES662 Innovative Ideas and Concept Development	Enables aspiring entrepreneurs to understand the content, methods, and models for new venture opportunity assessment and analysis. Focuses on how to identify and analyze entrepreneurial opportunities for technology-based ventures by first understanding the personal self and decision-making factors. Explores how to evaluate new venture opportunities and challenges within industries and markets.	BUS-FM/CE, PM, ETM
Non-Government Innovation Trainings	University of Maryland: ENES663 Strategies for Managing Innovation	Emphasizes how innovative leaders can use strategic management of innovation and technology to enhance firm performance. It helps students to understand the process of technological change; the ways that firms come up with innovations; the strategies that firms use to benefit from innovation; and the process of formulating technology strategy. It provides frameworks for analyzing key aspects of these industries and teaches students how to apply these frameworks.	ETM
Non-Government Innovation Trainings	University of Maryland: ENES464 International Entrepreneurship and Innovation	Focuses on the need for every entrepreneur and innovator to understand the global market in today's hypercompetitive world, and to appreciate how to compete effectively in domestic markets by managing international competitors, suppliers, and influences. Explore how the distinction between foreign and domestic markets is becoming less pronounced. Develop skills to identify and manage opportunities on a global basis.	ETM
Non-Government Innovation Trainings	University of Michigan: EMGT 500 Management for Engineers	This course provides the knowledge, skills, and attitude required to manage an efficient and productive engineering organization within the company, and manage effectively at upper cooperate levels. Topics include: integrating and coordinating people, functions and projects; managing technical resources; leadership and management; strategic planning for integrating and transferring technologies into products and processes; managing innovation, ethical behavior and legal compliance.	PM, ETM

Non-Government Innovation Trainings	University of Michigan: EMGT 535 Marketing Mgt and Policy	This course studies the salient features of technology-driven marketing and distinguishes technology-push from market-pull marketing. Highlights the technology-marketing interface in the context of strategy planning, market segmentation, product innovation, channels of distribution, promotional and pricing decisions. Particular attention will be paid to technology inventor-user interactions, process of adoption, and technological innovation. (College of Business).	ETM
Non-Government Innovation Trainings	University of Michigan: OM 662 Product Development & Tech Management	The objective of this course is to provide in-depth knowledge of the frameworks, policies, and issues that arise in the design and development of new products and the management of technology. In particular, the integration of new product development and innovative technology management within a supply chain forms the basis of knowledge offered in this course including the set of activities and processes associated with new product introduction and the development of new technologies. Topics include the product design and development phases, firm capabilities, product architectures, the make vs. buy decision, supplier involvement, industrial design, design-for-manufacturing, prototyping, and the management of technological change. Part of the course is project-based and covers modern tools and methods for product design and development. Prerequisite(s): OM 521 or IMSE 580 or EMGT 520	PM, T&E, ETM
Non-Government Innovation Trainings	University of North Carolina: Carolina Graduate Certificate in Innovation for the Public Good	The certificate provides graduate-level training that teaches students how to: Focus innovation designs around the voices, experiences, wishes and aspirations of those affected by the innovation. Develop an understanding of their own experiences, intentions, strengths, limitations, motivations and biases as changemakers. Identify, define and analyze problems. Recognize opportunities, challenges and the assets of communities. Generate optimal solutions by applying social innovation in practice. Understand how the context of problems and imagined solutions affects the way innovations are designed and implemented. Recognize and assess the strengths and limitations of various social innovation approaches – and identify which are most appropriate in specific contexts. Engage stakeholders in the co-design, implementation, evaluation and adaptive learning associated with an innovation. Build and maintain collaborations and partnerships in support of shared mission over time.	PM, ETM
Non-Government Innovation Trainings	University of Notre Dame: National Security Innovation	National Security Innovation is a University 3-credit hour course in collaboration with the Department of Defense that teaches students to work with the Defense and Intelligence Communities to rapidly address the nation's emerging threats and security challenges. Military and government civilian leaders understand and appreciate the global missions of the Department of Defense and the most pressing challenges that threaten our national security. From inside the Pentagon, the challenge collaborators meet with student teams virtually for one-hour each week to frame the challenge and share resources that inform the team's activities. The teaching team facilitates these meetings to ensure they are productive conversations.	PM, ETM
Non-Government Innovation Trainings	University of Virginia: Innovating for Defense	In this course, students will work on real problems facing the U.S. Department of Defense. Students will study the structures and processes of the various national security agencies and how those agencies approach the problem of innovation. For most defense institutions this is a combined problem of technology, policy, and law. Multifunctional student teams made up of students from each of the School of Engineering and Applied Science, the Batten School, the School of Law, and the College of Arts and Sciences will work together through the semester on an actual problem submitted by DoD to the class. As part of the course, student teams will prepare a series of project updates along with a draft and final project presentation.	ETM, CON
Non-Government Innovation Trainings	University of Washington: Introduction to Technology Commercialization	Explores essential business, legal, engineering, and other skills necessary to take new technology from research to market. Covers intellectual property, market analysis, licensing, funding mechanisms such as venture capital, and product marketing. Presenters are entrepreneurs and successful business-people representing a broad range of areas relating to the commercialization process.	PM, ETM
Non-Government Innovation Trainings	Utah State: TESY 4330 - Product Innovation Processes, Tools, and Strategies	In this course, students experience the processes, tools, and strategies used by new product developers in industry. The course encompasses strategies for production, development, innovation, and management.	PM, ETM
Other DOD Innovation Trainings	William & Mary: National Security Innovation Network (Hacking 4 Defense)	The National Security Innovation Network sponsors programs at 50 nationwide universities. Sometime referred to as Hacking for Defense (H4D), it is designed to provide students the opportunity to learn how to work with the Department of Defense (DoD) and Intelligence Community (IC) to better address the nation's emerging threats and security challenges.	PM, LCL, ETM, T&E

Appendix B: Acronyms

Acquisition Innovation Research Center	AIRC
auditing	AU
business-finance management and cost estimating	BUS-FM/CE
contracting	CON
Defense Acquisition University	DAU
Deputy Assistant Secretary of the Navy – Research, Development, Test & Evaluation	DASN
engineering and technical management	RDT&E
life cycle logistics	ETM
Marine Corps Warfighting Lab	LCL
middle tier acquisition	MCWL
National Defense Authorization Act	MTA
Naval Special Warfare Command	NDAA
Office of Naval Research	WARCOM
on the job training	ONR
other transaction authorities	OJT
program manager	OTA
Systems Engineering Research Center	PM
test and evaluation	SERC
Virginia Tech Applied Research Corporation	T&E
	VT-ARC

Appendix C: Resources

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Joint Innovation Enterprise Approach

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