Calhoun: The NPS Institutional Archive

DSpace Repository

NPS Scholarship | Conferences

2025-05-05

The Impact of the Joint Interagency Field Experimentation Program on Small Business Success

Book, Ashley

Monterey, CA; Naval Postgraduate School

https://hdl.handle.net/10945/73785

Copyright is reserved by the copyright owner.

Downloaded from NPS Archive: Calhoun

http://www.nps.edu/library

Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

SYM-AM-25-315

Excerpt from the Proceedings of the Twenty-Second Annual Acquisition Research Symposium and Innovation Summit

Wednesday, May 7, 2025 Sessions Volume I

The Impact of the Joint Interagency Field Experimentation Program on Small Business Success

Published: May 5, 2025

Disclaimer: The views represented in this report are those of the author and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.

Approved for public release; distribution is unlimited.

Prepared for the Naval Postgraduate School, Monterey, CA 93943.

The research presented in this report was supported by the Acquisition Research Program at the Naval Postgraduate School.

To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact any of the staff listed on the Acquisition Research Program website (www.acquisitionresearch.net).

ACQUISITION RESEARCH PROGRAM
DEPARTMENT OF DEFENSE MANAGEMENT
NAVAL POSTGRADUATE SCHOOL

The Impact of the Joint Interagency Field Experimentation Program on Small Business Success

Ashley Book—is Research Faculty in the Information Sciences Department at the Naval Postgraduate School, where she also pursues a Master of Science in Applied Design for Innovation. She has almost a decade of experience supporting Department of Defense innovation through field experimentation, small business engagement, and interagency collaboration. Her professional background includes environmental planning with a focus on hazard mitigation and emergency management. Book's research explores the role of innovation ecosystems in national security, emphasizing the impact of experimentation events on technology acceleration and small business success. [Ashley.book@nps.edu]

Abstract

This paper examines the impact of the Joint Interagency Field Experimentation (JIFX) program at the Naval Postgraduate School (NPS) on the success of small businesses within the Department of Defense (DoD) innovation ecosystem. JIFX provides a collaborative, real-world experimentation environment for companies to test emerging technologies, refine capabilities, and engage with government stakeholders. Through a mixed-methods approach including quantitative data analysis and interviews with repeat and first-time JIFX participants, this study identifies how JIFX participation contributes to technological development, strategic business positioning, and long-term outcomes such as funding, acquisitions, and follow-on contracts. The research finds that JIFX serves as a strategic entry point into the defense market and fosters a resource-based competitive advantage for its participants. Recommendations are provided for enhancing the JIFX program's visibility, collaboration mechanisms, and integration with downstream acquisition pathways. These insights support policy and program development to better connect early-stage innovators with DoD operational needs.

Executive Summary

This paper examines the Joint Interagency Field Experimentation (JIFX) program and its influence on the success of small businesses that participate in its events. JIFX serves as a platform for private-sector innovators to engage with the Department of Defense (DoD) and other government agencies, providing an opportunity to test emerging technologies in an operationally relevant environment. The objective of this research is to assess the benefits of JIFX participation for small businesses. The findings of this study will be valuable to multiple stakeholders, including small businesses seeking entry into the DoD innovation ecosystem, policymakers shaping defense innovation initiatives, and JIFX organizers looking to enhance the program's impact on private-sector innovation.

Problem Statement

Despite the DoD's emphasis on fostering innovation, small businesses often struggle to access and integrate into its complex acquisition and development frameworks. JIFX presents a unique opportunity for these businesses to showcase and refine their technologies in a low-risk, collaborative setting. However, the specific impacts of JIFX participation on small business success remain largely anecdotal, with limited empirical analysis available. This research seeks to bridge that gap by systematically evaluating the role of JIFX in supporting small business growth, measuring key outcomes such as technological development, investment traction, and government contracting success. By identifying patterns and trends, this study aims to provide a data-driven understanding of how JIFX contributes to the broader DoD innovation ecosystem and how it can be leveraged to enhance small business participation and success.

Research Approach

This paper employs a comprehensive research approach to examine the perceived impact of the Joint Interagency Field Experimentation (JIFX) program on the success of participating small businesses. Specifically, the research focuses on how participation in JIFX events influences the technological development and strategic direction of these businesses. The methodology is divided into three core areas:

1. **Creation of the JIFX Participant Database.** A foundational element of this research involves compiling and structuring a comprehensive database of all JIFX participants. This database will aggregate historical data on attendees, including company information such as size, headquarter location, and founding year, and financial information such as investments and acquisitions. Future research could incorporate funding mechanisms such as the Small Business Innovation Research (SBIR) fund.
2. **Data Analysis of the JIFX Participant Database.** Once the database is established, a detailed analysis will be conducted to identify patterns and trends in repeated participation and business success following attendance at JIFX events. Key metrics such as the frequency of participation, the nature of innovations showcased, and measurable outcomes (e.g., contracts awarded, partnerships formed) will be examined. This analysis aims to quantify the impact of JIFX participation on technological development and business growth.
3. **Interviews with Historically Active Participants.** To gain qualitative insights, interviews will be conducted with select companies that have attended multiple JIFX events. These discussions will explore the motivations behind continued participation, the perceived benefits of engagement, and how JIFX has influenced their technological development and broader business strategies. The aim is to uncover longitudinal impacts and unique perspectives on how JIFX fosters innovation and collaboration for small businesses.

The combination of structured data and personal insights ensures a complete understanding of the role JIFX plays in supporting the success of small businesses through technological innovation and strategic development.

Introduction

The Department of Defense (DoD) innovation ecosystem is a dynamic network of programs, organizations, resources, and partnerships aimed at driving technological advancements to meet evolving defense and security needs. At its core, the ecosystem thrives on principles of collaboration, experimentation, and rapid innovation. By fostering relationships across government, academia, and industry, it enables the identification, development, and scaling of emerging technologies for defense applications. A widely held view within the ecosystem is that traditional development and acquisition methods are too slow to keep up with the rapid pace of technological change. To address this, many emphasize the need for the DoD to leverage commercially available technologies that are already advancing quickly to ensure the United States remains competitive and responsive to emerging challenges.

The strength of the DoD innovation ecosystem lies in its ability to leverage expertise and resources across multiple domains. By creating a pipeline for technology development, experimentation, and transition to operational use, the ecosystem accelerates the delivery of advanced capabilities to the warfighter. This collaboration supports the growth of innovative technologies that enhance national security. Additionally, it ensures the DoD can respond swiftly to emerging challenges by integrating cutting-edge solutions from both commercial and defense sectors.

NPS Innovation

The Naval Postgraduate School (NPS) plays a pivotal role in the DoD's innovation ecosystem by facilitating advanced education and research in military and defense technologies. The 2023 NPS Strategic Framework reports the establishment of an Innovation Pillar to lead naval innovation via a collaborative ecosystem connecting NPS students with academia and industry. Through programs like the Joint Interagency Field Experimentation (JIFX), the Warfare Innovation Curriculum (WIC), Naval Innovation Exchange (NIX), and the Naval Innovation Center (NIC), NPS provides a unique environment to support emerging technologies. Additionally, master's degree programs, such as the Applied Design for Innovation curricula, equip military leaders with experiential learning in design-thinking, social science methods and creative collaboration to address innovation challenges in the context of evolving technology and military challenges

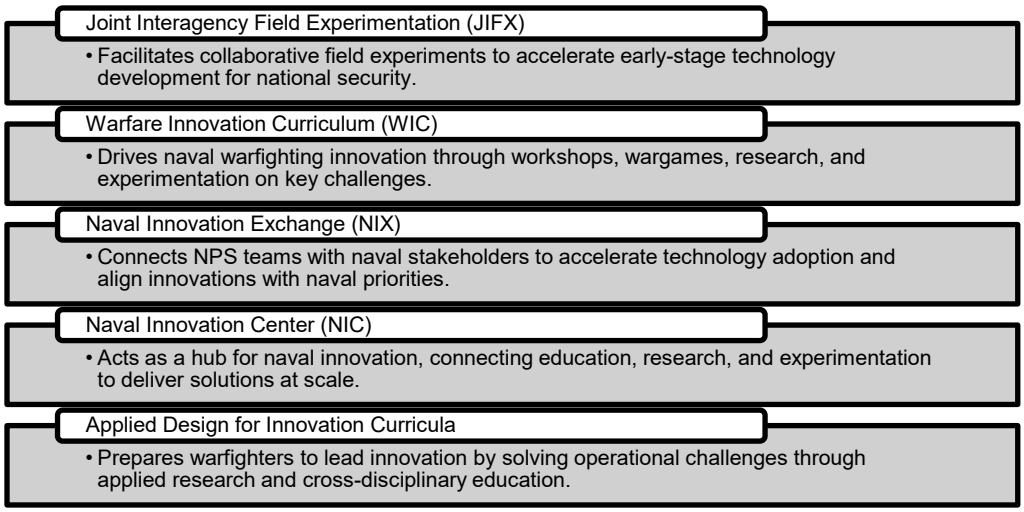


Figure 1. Naval Postgraduate School Innovation Efforts

Joint Interagency Field Experiment

JIFX is a sponsored research project at NPS, and it exists to support experimentation in alternative methods to enable rapid technological development. JIFX is a multi-faceted program focusing on: (1) a community of interest focused on supporting emerging technologies and (2) broadly scoped quarterly collaborative field events. The community of interest and quarterly field experimentation events enable DoD, U.S. government, and allied stakeholders to identify, influence, and accelerate early-stage technology development that addresses national and collective security challenges. The JIFX events are driven by five tenets, shown in Figure 2, creating a unique culture of collaboration, inclusivity, and mutual learning.

Figure 2. JIFX Tenets

JIFX operates on a quarterly cycle with events typically hosted in February, May, August, and November. The proposal submission, driven by an annual Request for Information (RFI), for each event opens at the beginning of each fiscal year and closes approximately 75 days before each event. The proposals are reviewed by JIFX stakeholders for relevancy and the NPS team for safety, legality, and applicability for the event. The NPS team manages all flight, spectrum, laser, and safety approval processes for all experiments. Once approved, experimenters are invited to participate in a series of virtual coordination calls leading up to the event. Approximately 2 weeks before the event, the coordination call is devoted to experiment introductions amongst the group to facilitate collaboration opportunities. Experimenters are encouraged to work with other technologists prior to the event to coordinate any collaborations or integration experiments (*JIFX FY24 Request for Information*, n.d.).

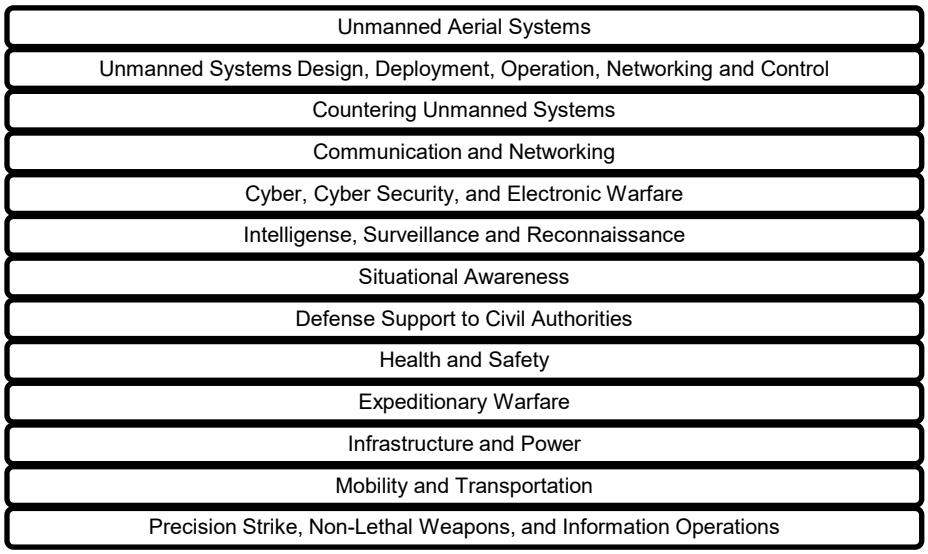


Figure 3. JIFX FY24 RFI Focus Areas

The JIFX program had its creation and evolution within the NPS Field Experimentation (FX) Program, which was launched in 2002 to provide operational environments for testing and refining emerging technologies. Initially focused on enhancing capabilities like unmanned aerial vehicle (UAV) support for Naval Special Warfare, the program evolved through partnerships with U.S. Special Operations Command (USSOCOM). Early iterations, such as the Surveillance and Target Acquisition Network (STAN) and later the Tactical Network Topology (TNT), developed networks to link soldiers with tactical sensors and unmanned systems. By 2013, JIFX was established to address broader interagency needs, integrating lessons learned from the FX program's decade-long evolution (Oros, 2014). In 2025, JIFX operated under the sponsorship of the Office of the Under Secretary of Defense for Research & Engineering (OUSD[R&E]) and NavalX, focusing on technology experimentation to meet diverse operational challenges across interagency commands.

JIFX is a critical but specialized component of the DoD innovation ecosystem, offering unique opportunities for experimentation and collaboration without serving as a funding mechanism. While JIFX provides an invaluable platform for small businesses and startups to refine their technologies, its role is inherently limited to facilitating experimentation and fostering connections. This makes the integration of JIFX with other DoD organizations such as the Defense Innovation Unit (DIU), NavalX, and Small Business Innovation Research (SBIR) programs essential for ensuring the long-term success of participating businesses. These complementary organizations provide funding pathways, transition support, and additional resources that JIFX itself does not offer.

For small businesses, JIFX serves as an entry point to the broader DoD innovation ecosystem by providing a unique platform to test solutions in realistic operational scenarios, gather actionable feedback from military and government end-users, and foster connections with key stakeholders. JIFX amplifies its impact through its curated network of participants, which includes subject matter experts from across the DoD. This network enables small businesses to identify potential funding opportunities, such as SBIR or STTR programs, and gain access to mentors who can guide product refinement and commercialization efforts. Furthermore, JIFX offers visibility to military stakeholders who may champion promising technologies through procurement or development programs, thereby positioning participants for success within the DoD acquisition pipeline. Through these targeted mechanisms, JIFX transforms opportunities into tangible pathways for innovation and growth.

JIFX events stand out as uniquely collaborative and innovative within the DoD innovation ecosystem. These events are structured not as traditional trade shows or demonstrations but as dynamic, hands-on experimentation environments where companies, government stakeholders, and researchers come together to push the boundaries of emerging technologies. JIFX prioritizes collaboration and experimentation over competition, creating a supportive atmosphere that encourages participants to explore new ideas, adapt their technologies in real-time, and learn from failure. As one participant described, “The true bleeding edge can be seen live in the making at JIFX because the lack of fear of failure allows experimenters to truly push the bounds of what is possible.” This mindset fosters an environment where early-stage prototypes—even duct-taped and minimally functional technologies—are not only welcomed but celebrated for their potential and growth.

JIFX’s format is intentionally open and fluid. Held at the NPS Field Laboratory at Camp Roberts, participants are free to set up experiments wherever they see fit across the austere environment, which includes runways, open terrain, and specialized facilities. A highlight of the facilities includes access to restricted airspace allowing experimental aircraft to fly without adhering to typical Federal Aviation Administration (FAA) Class C Airspace rules. This setting allows participants to test their technologies in real-world conditions, often adapting or improving them on the fly based on feedback from government science and technology experts or insights gained during the week. For instance, technologies that may not meet specific requirements on the first day can evolve by the end of the week to address those needs, demonstrating the program's emphasis on rapid prototyping and development. The combination of JIFX's unique facilities and its diverse community of attendees creates a unique environment for innovation and collaboration.

Another hallmark of JIFX events is the ad hoc collaboration that naturally occurs among participants. Approximately 50% of attendees represent private industry—startups and established companies—while the other 50% are government stakeholders, including scientists, engineers, and operational experts. This mix creates a productive environment for cross-pollination of ideas and partnerships, where companies often integrate their experiments with one another to explore new applications. For example, one participant might fly a payload for another, while a third integrates the resulting data into a sensor system, forming a chain of innovation that would be difficult to replicate in a more rigid environment. Additionally, pre-event coordination calls and networking opportunities allow participants to connect with potential collaborators before the event even begins.

JIFX events also emphasize networking and mentorship, with many participants leaving with not only valuable feedback but also new relationships and follow-on collaboration opportunities. Government attendees often provide insights into operational needs and potential use cases for the technologies, helping companies refine their approaches. Participants are encouraged to invite additional government stakeholders or contractors to the event, further

enriching the ecosystem of expertise and opportunities. This mix of experimentation, networking, and collaboration ensures that JIFX provides significant value for early-stage and cutting-edge technologies, offering a pathway for iterative development and a platform for showcasing potential game-changing innovations.

Looking forward, JIFX is poised to play an increasingly significant role in the evolving DoD innovation ecosystem. As the defense landscape continues to change with new emerging threats, JIFX is structured to incorporate new focus areas into the RFI through the annual update process. Partnerships with entities like the Defense Innovation Unit (DIU) and NavalX are expected to grow, creating a more cohesive pipeline for transitioning experimental technologies into operational capabilities. By continuing to prioritize collaboration, inclusivity, and adaptability, JIFX will remain a foundation of the DoD's efforts to harness innovation from industry, academia, and government stakeholders. Furthermore, there is growing potential for JIFX to incorporate international partnerships, enabling allied nations to collaborate on joint experimentation initiatives.

JIFX exemplifies the value of collaborative experimentation within the DoD innovation ecosystem. By providing an open, hands-on environment for testing and iterating technologies, JIFX bridges the gap between early-stage innovation and real-world application. Its unique format, emphasis on partnerships, and ability to adapt to emerging priorities ensure it remains a vital platform for advancing cutting-edge capabilities. While JIFX is not a standalone solution, its role as an entry point into the broader innovation ecosystem highlights its importance in enabling small businesses, researchers, and technologists to contribute meaningfully to national security. As the DoD continues to pursue rapid innovation and maintain technological superiority, JIFX will undoubtedly play a key role in shaping the future of defense experimentation and collaboration.

JIFX Participants Analysis

Since its inception in 2013, the JIFX program has served as a dynamic platform for fostering innovation and collaboration between government entities, private industry, and academia. Over the years, hundreds of companies have participated in JIFX, representing a wide array of industries, specialties, and organizational sizes. Understanding the composition of these participants and identifying trends across their characteristics is essential to evaluate the program's role in promoting innovation and supporting industry growth. This thesis seeks to analyze a comprehensive dataset of all companies that have participated in JIFX since its inception.

The dataset was constructed using publicly available information from LinkedIn, Crunchbase, and company websites. LinkedIn was utilized to gather detailed information about company size, industry, specialties, founding years, and headquarters location, while Crunchbase provided insights into funding types and growth trajectories. Individual company websites were used to fill in information missing from LinkedIn and Crunchbase. The integration allowed for the creation of a robust database that paints a detailed picture of the JIFX participant landscape.

Crunchbase	**Headquarters Location**	The primary location of the company's headquarters. (City, State, County)
	Number of Employees	Categorized company size: 1-10, 11-50, 51-100, 101-250, 251-500, 501-1,000, 1,001-5,000, 5,001-10,000, 10,000+
	Funding Round	The type of funding the company as received: Convertible Note, Debt Financing, Equity Crowdfunding, Grant, Non-equity Assistance, Post-IPO Debt, Post-IPO Equity, Pre-Seed, Private, Private Equity, Public, Seed, Series A, Series B, Series C, Series E, Series F, Undisclosed, Venture - Series Unknown
	Crunchbase Ranking	A dynamic score that measures the prominence of entities (companies, people, investors, etc.) based on factors like connections, funding events, news coverage, and acquisitions, influencing how they appear in search results
	Total Funding Amount	Total amount raised across all funding rounds ($)
	Number of Investors	Total amount raised across all funding rounds
	Investor Names	Name of the investor who participated in the Investment
	Stock Symbol	Stock ticker symbol e.g. AAPL, FB, TWTR
	Valuation at IPO	Value of the Company at IPO ($)
	Money Raised at IPO	Amount the Organization raised at IPO ($)
	IPO Date	The date when the Organization went public (MM/DD/YYYY)
JIFX Shared Drive	**# of JIFX's**	The total number of JIFX events attended by the Company.
LinkedIn	**Industry**	The industry category self-selected by the company (over 200 options available).[1]
	Company Size (2025)	Categorized company size: 1, 2-10, 11-50, 51-200, 201-500, 501-1,000, 1,001-5,000, 5,001-10,000, 10,001+
	Founded	Year of company founding, self-selected by the company page creator.
	Specialties	A company can select up to 20 specialties for their profile.[1]
	Headquarters Location (Company Website)	The primary location of the company's headquarters, as listed on its website. (City, State, County)

Figure 4. JIFX Database Categories

By exploring these dimensions, this paper aims to provide a comprehensive understanding of the companies that have engaged with JIFX, their characteristics, and their growth trajectories. This analysis will offer valuable insights into the program's impact on fostering technological innovation and highlight potential opportunities for enhancing its effectiveness in the future.

Company Demographics

Understanding the demographics of companies that participate in JIFX is essential to evaluating the program's broader impact on innovation and small business success. By examining who participates—whether startups or established firms, private sector or government-affiliated, and which industries and regions they represent—we gain insight into the types of organizations that JIFX attracts and supports. This information helps identify patterns in participation that may correlate with successful outcomes, such as commercialization,

[1] LinkedIn does not publish a complete list of industry or specialty types.

investment, or acquisition. In particular, a strong presence of small and medium-sized enterprises (SMEs) can signal that JIFX provides a uniquely accessible and valuable platform for early-stage companies seeking to test, iterate, and demonstrate their technologies in realistic field conditions.

Figure 5 illustrates the organizational diversity of companies participating in JIFX, showing that a vast majority—87%—are privately held firms, while government, academic, and other entities make up the remaining 13%. This breakdown reinforces JIFX's role as a venue primarily serving innovation-driven private companies while maintaining an inclusive environment for public and academic collaboration. The presence of government and FFRDC participants highlights opportunities for dual-use technology exploration and transition pathways between commercial and public-sector applications. This diversity of participants sets the stage for analyzing how JIFX fosters technological innovation across a wide ecosystem of actors.

The data presented in Figure 6 through Figure 9 offer a comprehensive snapshot of the organizational, geographic, structural, and industrial diversity of past JIFX participants, illustrating the program's unique position as a catalyst for small business innovation. A dominant presence of private-sector entities, particularly small and medium-sized enterprises, underscores JIFX's appeal to agile, innovation-driven companies seeking opportunities to test and refine technologies in an applied field environment. Although large corporations and government-affiliated entities are also represented, the strong SME turnout signals that JIFX plays a vital role in supporting early-stage growth and market access. The geographic concentration of participants in U.S. innovation hubs—especially near defense and research institutions—suggests that proximity to government and military stakeholders enhances opportunities for collaboration and transition. Industry-wise, the program attracts companies working at the forefront of technological development, particularly in aerospace, cybersecurity, and AI, reflecting both JIFX's emphasis on dual-use technologies and the evolving needs of national security. Taken together, these trends provide essential context for evaluating JIFX's impact on small business success.

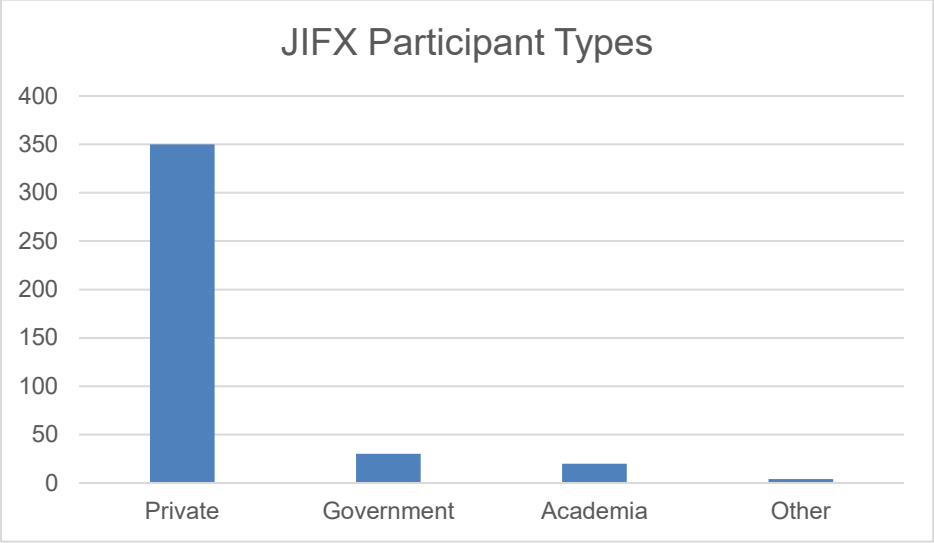


Figure 5. JIFX Participant Types.

(Note: The companies participating in JIFX range from early-stage startups to well-established corporations. The dataset includes information on company type (e.g., private, public, government-affiliated), providing insights into the diversity of organizational types engaged in the program. The data shows that most participants represent private industry (87%), with much smaller representation from government agencies (7%) and academia (5%). Representing the other category, which accounts for 1% of experiments, are Federally Funded Research and Development Centers (FFRDCs) and nonprofits.)

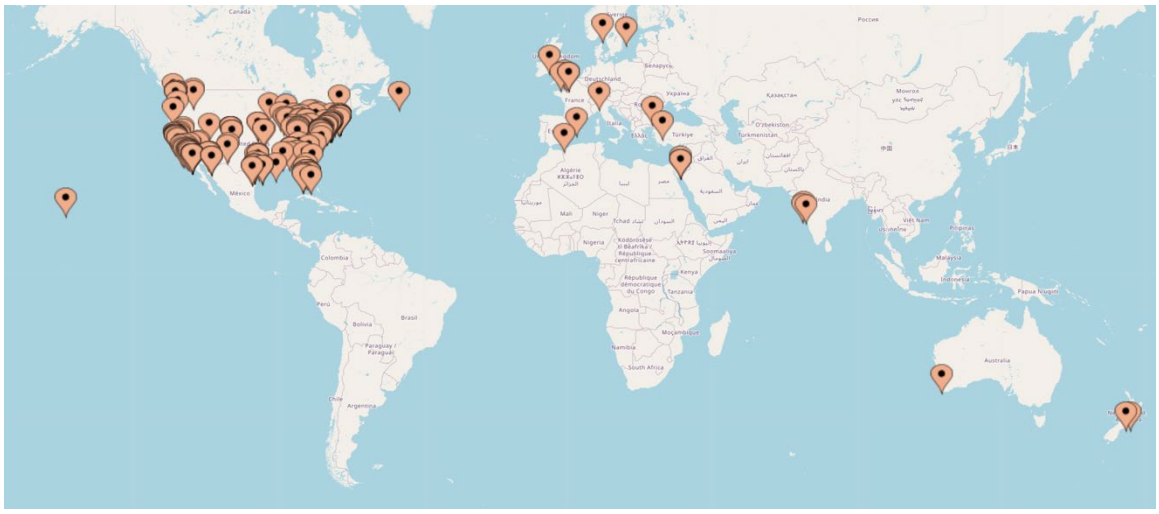


Figure 6. JIFX Participant Headquarters Location.

(Note: This map visualizes the headquarters locations of participating companies. The data indicates that a majority of participants are based in the United States, with notable clusters in California, Texas, and Virginia. International participation is observed but remains limited. The concentration of companies in key regions suggests that proximity to defense and government research institutions plays a role in fostering innovation and engagement with JIFX.)

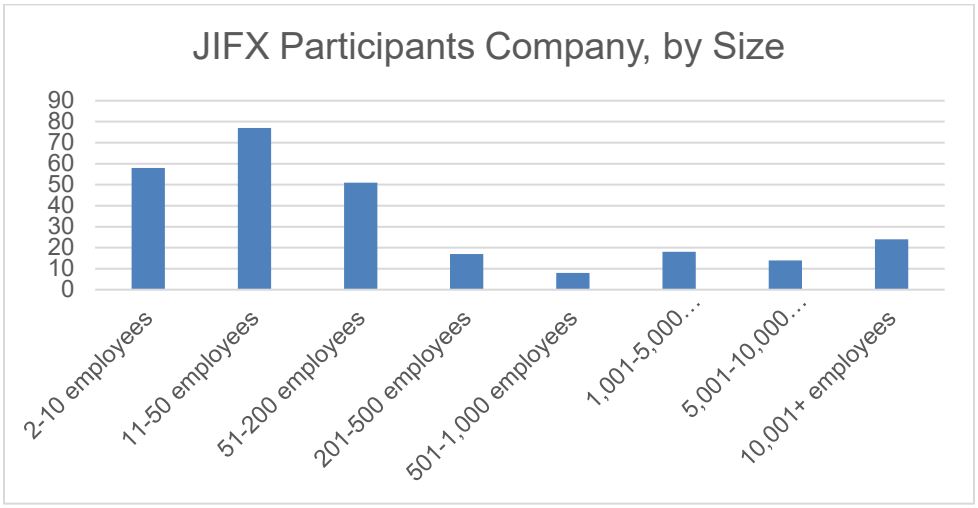


Figure 7. JIFX Participants Company, by Size.

(Note: This graph presents the breakdown of company sizes, ranging from small businesses with fewer than 10 employees to large corporations with over 10,000 employees. The analysis reveals that a significant proportion of JIFX participants are small and medium-sized enterprises (SMEs), indicating strong engagement from emerging innovators. Large corporations also participate, reflecting JIFX's ability to attract a broad spectrum of companies, from nimble startups to industry leaders.)

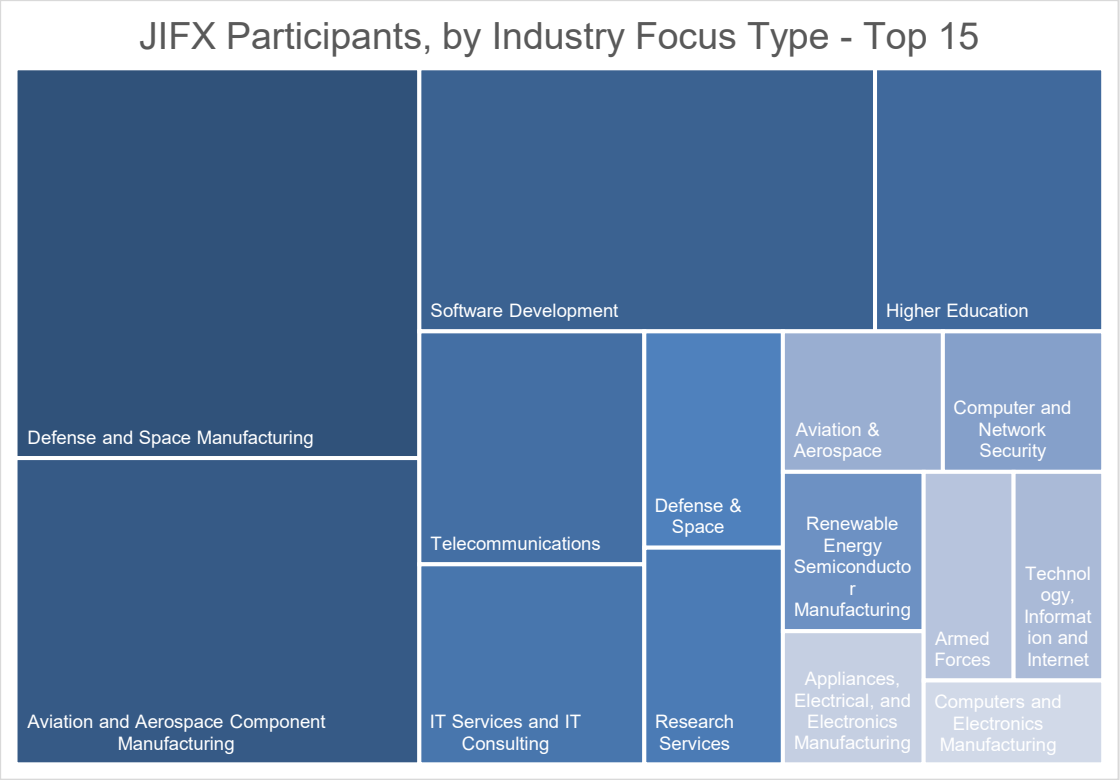


Figure 8. JIFX Participation by Industry Type.

(Note: The industries represented in JIFX participation are diverse, spanning aerospace, cybersecurity, artificial intelligence, and more. Analyzing these sectors helps to identify which technological fields are most actively involved in JIFX and which areas show the highest potential for innovation. This figure showcases the distribution of the top 15 industries among JIFX participants. The aerospace and defense sectors hold the largest share, followed closely by cybersecurity and AI-driven companies. This distribution highlights the program's focus on cutting-edge technological advancements. The presence of a strong cybersecurity segment suggests the increasing relevance of secure communications and AI-driven analytics in national security applications.)

Company Financials

Understanding acquisitions among JIFX participants provides valuable insight into industry consolidation and the commercial success of emerging technologies showcased at the event. Mergers and acquisitions (M&A) activity highlights the market relevance and long-term viability of these companies as they grow and integrate into larger corporate structures. Notable examples include Splunk's acquisition by Cisco for $28 billion and Inmarsat's acquisition by Viasat for $7.3 billion, both of which underscore the high value placed on innovations demonstrated through JIFX. Figure 9 presents a timeline of years between JIFX participation and subsequent acquisition, with most companies acquired after their involvement—sometimes many years later, as seen with Inmarsat and SystromDirect. These trends suggest that JIFX serves as a meaningful launchpad, increasing visibility and credibility among government and commercial stakeholders. By offering an environment to test and demonstrate capabilities in realistic settings, JIFX can catalyze strategic partnerships, investment, and eventual acquisition. When compared with the entire participant dataset, 3.6% of companies in the JIFX ecosystem have been acquired following their participation—demonstrating a tangible indicator of the program's role in accelerating commercial success.

Table 1. This table lists companies that participated in the JIFX program and were subsequently acquired. It includes each company's industry, acquiring entity, dates of JIFX participation and acquisition, and acquisition price when available on Crunchbase.

Company Name	Industry	Acquired By	JIFX Participation	Date of Acquisition	Price
Saab	Aerospace, Automotive, Infotech	Quantal	14-3, 20-4	March 3, 2021	
Ghost Robotics	Industrial, Military, Mining	Lig Nex1	21-1	July 28, 2024	$240M
Perforce Software	Analytics, DevOps, Infotech	Clearlake Capital Group	16-3, 16-4	January 10, 2018	
Mashable	Content, Digital Media, Infotech	Ziff Davis	15-4	Dec. 5, 2017	$50M
Orion Labs	Artificial Intelligence, Communications	Vontas	15-3, 16-2, 17-3, 18-3, 20-1, 21-4	Dec. 11, 2023	
Inmarsat	Communications Infrastructure	Viasat	15-3	May 9, 2023	$7.3B
Splunk	Analytics, Infotech	Cisco	21-4	Sept. 21, 2023	$28B
Tomahawk Robotics	Military, Product Design, Robotics	AeroVironment	22-2	August 22, 2023	$120M
Planck Aerosystems	Aerospace, Artificial Intelligence	AeroVironment	19-2, 22-2	August 17, 2022	
Haystax Technology	Analytics, Cyber Security, Public Safety	Fishtech Labs	14-2	May 21, 2018	
Javelin Networks	Computer, Cyber Security, Infotech	NortonLifeLock	17-1	Nov 5, 2018	
Asymmetric Technologies	Electronics, Infotech	Chesapeake Technology International	14-2, 23-3, 24-3	Mar 28, 2024	
Aurora Flight Sciences	Aerospace, Air Transportation	The Boeing Company	21-2	Oct 5, 2017	
Satcom Direct	Aerospace, Air Transportation	Gogo	14-2	Sept. 30, 2024	$375M
Tableau	Analytics, Big Data, Consulting	Salesforce	14-2	Jun 10, 2019	$15.7B
Leica Geosystems	CRM, Infotech	ABTECH Services Polytechniques Inc.	20-1	Feb 3, 2020	
HDT Global	Commercial, Government, Industrial	Behrman Capital	14-2	Jan 7, 2004	
Prox Dynamics	Aerospace, Air Transportation	Teledyne FLIR	16-1	Nov 30, 2016	$134M
Star Solutions	Infrastructure	OpenGate Capital	21-2	June 10, 2008	
Intelligent Automation	Innovation Management	BlueHalo	15-2	Aug 19, 2021	
OnLive	Cloud Computing, Gaming	Sony	15-1	Apr 4, 2015	
QRC Technologies	Manufacturing, Telecommunications	Parsons Corporation	22-2	Jul 22, 2019	$215M
Arcturus UAV	Aerospace, Manufacturing	AeroVironment	18-3	Jan 13, 2021	$405M
Protonex Technology Corporation	Electronics, Energy, Manufacturing	Ballard Power Systems	17-3	Jun 29, 2015	$30M

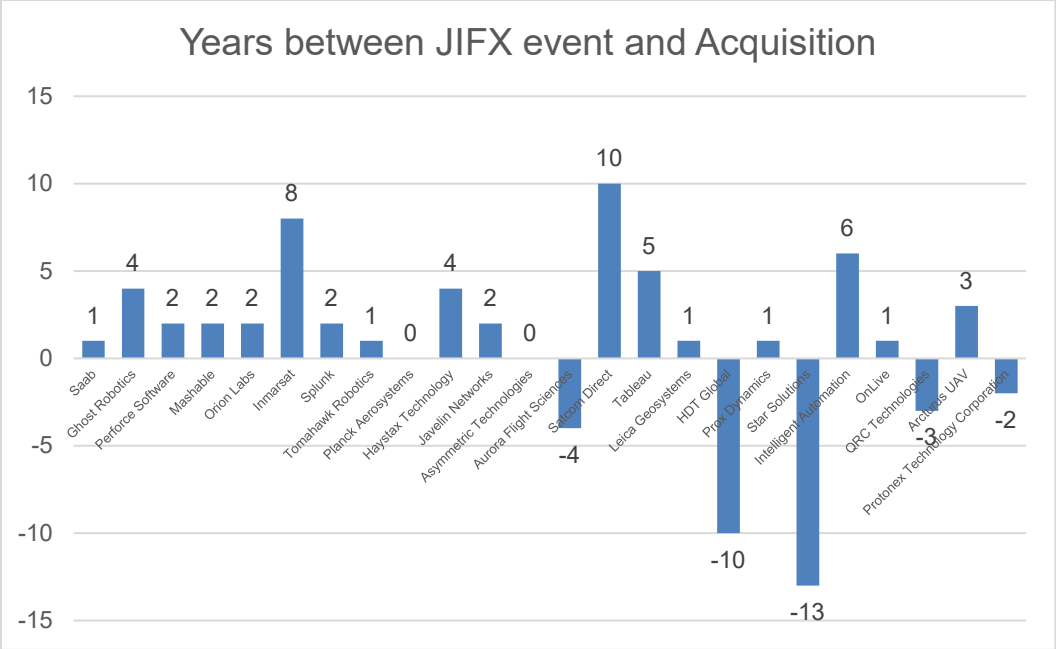


Figure 9. Time Between JIFX Participation and Acquisition for JIFX Participants.

(Note: Positive values indicate years after the JIFX event that a company was acquired, while negative values indicate acquisition occurred before the JIFX event. This timeline helps illustrate the relationship between field experimentation exposure and subsequent commercial or strategic acquisition.)

Repeat JIFX Participation

Repeat participation in JIFX is a strong indicator of the program's value to small and emerging technology companies. Many companies have returned to JIFX multiple times, with some attending as many as 14 events. To explore the motivations behind this continued engagement, interviews were conducted with representatives from seven companies that have participated in multiple JIFX events. These firms, ranging in size and sector, consistently cited the opportunity to test technologies in a realistic field environment as a key driver. The ability to conduct operationally relevant experiments—particularly for UAVs, sensors, and autonomous systems—was viewed as a major benefit, especially when compared to more traditional industry events.

Company	JIFX Participation	Motivation to Attend JIFX	How They Found Out About JIFX
Airrow	22-3, 23-2, 23-4	Wanted to explore DoD opportunities	Recommended by Roman Aerospace (another JIFX Participant)
Bluespace.ai	23-4, 24-1, 24-2, 24-3, 24-4	Seeking a military-recognized test environment for dual-use development and stakeholder engagement.	Through a contact at NAMC (National Advanced Mobility Consortium).
Gantz-Mountain	20-4, 21-3, 21-4, 22-1, 22-2, 22-3, 22-4, 23-1, 23-2, 23-3, 23-4, 24-1, 24-2, 24-4	Interested in stakeholder feedback and stakeholder engagement	Founders participated in JIFX while prior employees of NPS
Microwave Monolithics	15-3, 15-4, 19-2, 19-4, 21-1	Seeking a test environment to fly their unit on UAVs	Possibly saw something online or received outreach
Odys Aviation	23-4, 24-1, 24-3, 24-4, 24-4	Interested in stakeholder feedback and stakeholder engagement	Recommended by business consultant
Premise Data	23-2, 23-3, 23-4	Diversity of government stakeholders and networking with other companies	Likely through Vulcan SOF

Yotta Navigation	21-3, 21-4, 22-2, 22-3, 23-1, 23-2, 23-3, 23-4	Needed a location to test GPS tracking for mass fatality events, but cellular network limitations prevented attendance.	Discovered through online searches for government test events.

Figure 10. JIFX Interviews With Repeat Participants

Participants also praised JIFX's accessible application process, which lowers barriers to entry for startups unfamiliar with DoD procedures. Many discovered JIFX through word of mouth, recommendations from other participants, or defense-focused networks like NAMC or Vulcan SOF. While JIFX is primarily designed for experimentation, interviewees found significant value in the informal business development opportunities it offered. They highlighted the importance of interacting with government stakeholders and other innovators in a setting that allowed for deeper technical engagement than typical conferences. In many cases, JIFX opened doors to further funding opportunities and participation in high-visibility DoD demonstrations such as Project Convergence and USSOCOM TE.

Another prominent theme was the iterative nature of JIFX participation. Companies returned to refine their technologies across different environmental conditions and use cases. The open and collaborative atmosphere at Camp Roberts enabled spontaneous testing, peer-to-peer learning, and even unexpected collaborations. Participants valued the chance to observe and integrate with other systems on-site, which accelerated development cycles and revealed new operational applications for their technologies. For many, JIFX served as an entry point into the broader defense innovation ecosystem, providing early-stage validation before progressing to larger procurement or testing venues.

Despite its strengths, the interviews also identified areas for improvement. Notably, none of the participants mentioned the Joint Vulnerability Assessment Branch (JVAB), which suggests that either its role is not well understood or its integration into the experimentation process is lacking. Participants recommended increasing marketing outreach to startups, enabling structured collaboration with government representatives, and enhancing feedback mechanisms. They also suggested expanding the diversity of attending stakeholders and creating more direct links between JIFX and follow-on opportunities. These insights reinforce JIFX's critical role in accelerating defense-relevant innovation and highlight ways it can further support small business success.

Conclusion

The JIFX program represents a vital, though often underrecognized, mechanism for catalyzing small business success within the DoD innovation ecosystem. Through a uniquely accessible and collaborative structure, JIFX lowers the barriers that often prevent emerging companies from entering the defense market. Its open experimentation environment provides a rare opportunity for early-stage technologies to be tested, iterated, and validated under operationally relevant conditions, while simultaneously connecting small businesses to government stakeholders, potential partners, and a broader network of innovation champions. The findings of this research, derived from both quantitative data and qualitative interviews, affirm that JIFX plays an indispensable role in helping small businesses navigate the complex path from concept to capability.

Participation in JIFX has led to meaningful outcomes for companies, including iterative product development, connections to future funding opportunities, and increased visibility within the DoD. While direct contracting may not always be immediate, the cumulative impact of networking, real-time feedback, and government engagement helps position companies for downstream success. Repeat participants, in particular, view JIFX as a cornerstone of their defense innovation strategies. For many, it serves as a launchpad into larger demonstrations

and funding mechanisms such as SBIR, Project Convergence, and SOCOM Technical Experimentation. These longitudinal benefits highlight JIFX's importance not only as a venue for experimentation but as a critical on-ramp to the broader acquisition and innovation ecosystem.

At the same time, this research identified several opportunities to further enhance JIFX's effectiveness and strategic alignment. Greater awareness of cybersecurity requirements and integration of the Joint Vulnerability Assessment Branch (JVAB) could strengthen the program's alignment with modern defense priorities. More deliberate pathways from JIFX to acquisition programs and structured co-development with government users would also amplify its impact. In particular, expanding outreach to underrepresented startups and venture-backed firms would diversify the portfolio of participating technologies and maximize innovation potential. Clearer mechanisms for data sharing, post-event feedback, and metrics-driven outcomes would further support participating businesses in demonstrating their progress and value.

In summary, JIFX exemplifies how a thoughtfully designed, field-based experimentation program can unlock innovation from the private sector and channel it toward national security objectives. By providing a hands-on, low-risk environment for testing and collaboration, JIFX bridges the persistent gap between emerging technologies and end-user needs. Its continued evolution—through partnerships, increased visibility, and deeper integration with DoD transition pathways—will be essential in sustaining the pace of innovation and maintaining U.S. technological advantage. For small businesses, JIFX offers not just a proving ground but a launchpad—transforming potential into progress and ideas into impact.

References

America's seed fund: SBIR and STTR. (n.d.).

Bordetsky, A., & Netzer, D. (2009). TNT testbed for self-organizing tactical networking and collaboration. In *Proceedings of the 14th International Command and Control Research and Technology Symposium* (p. 63).

Chestnut, J. (2024, November 6). *Innovative Algorithms* [In person].

Crunchbase. (n.d.). https://www.crunchbase.com

Dagan, S. (2024, November 8). *Anello Photonics* [Microsoft Teams].

Defense Analysis (DA) curricula. (n.d.). https://nps.edu/web/da/curricula

The Defense Innovation Unit FY 2023 annual report. (n.d.). https://downloads.ctfassets.net/3nanhbfkr0pc/57VfnQbajgWdONRicxv6nG/5987e9a02c4d24f16b6d5f356c55fa63/DIU_Annual_Report_FY2023.pdf

Furey, R. (2025, February 6). *Premise Data* [Microsoft Teams].

Goshorn, D. & Goshorn, R. (2025, February 13). *Gantz-Mountain Intelligence Automation Systems* [Microsoft Teams].

Hazlett, A. (2025, February 5). *Yotta Navigation* [Microsoft Teams].

Kaye, D. (2025, February 6). *Airrow* [Microsoft Teams].

Kotila, B., Drezner, J. A., Bartels, E. M., Hill, D., Hodgson, Q. E., Huilgol, S. S., Manuel, S., & Simpson, M. (n.d.). *Strengthening the defense innovation ecosystem*. RAND.

JIFX FY24 request for information. (n.d.). https://nps.edu/documents/104517539/104522581/JIFX+FY24+RFI.pdf/df2c4fa5-1e5d-8c58-3fbd-63bb7b99256b?t=1692735046133

Joint Interagency Field Experimentation. (n.d.). https://www.nps.edu/web/fx/

LinkedIn. (n.d.). https://www.linkedin.com

Livingston, A. (2025, February 14). *Thermo AI* [Microsoft Teams].

Manuel, C. E., Murphy, H. R., Jr., & Paxton, K. A. (2004). *The Surveillance and Target Acquisition Network (STAN)* [Master's thesis]. Naval Postgraduate School.

Mena-Werth, R. (n.d.). *Empowering student ideas: NPS introduces the Naval Innovation Exchange*. Naval Postgraduate School. https://nps.edu/-/empowering-student-ideas-nps-introduces-the-naval-innovation-exchange

Moffitt, A. (2024, November 12). *Clara CoPilot* [Microsoft Teams].

Naval Innovation Center. (n.d.). https://nps.edu/web/naval-innovation-center

Naval Postgraduate School academic catalog. (2022). https://nps.edu/documents/104111578/117929723/Fall+Quater_NPS-Academic-Catalog_Sept+2022.pdf/5d801f39-d6b3-8bdd-42f6-6cb4574b8b9e?t=1664562884492

Naval Postgraduate School 2023 annual report & mission measures. (n.d.). https://nps.edu/documents/10180/149156382/NPS+Annual+Report+FY2023-WEB-single%5B85%5D.pdf/e3e9009b-c980-1b63-82fb-3c41168d2463?t=1727998157146

NPS Joint Interagency Field Experiment. (n.d.). www.nps.edu/fx

Oros, C. L. (2014). A brief history of the NPS field experimentation program: Spanning STAN, TNT, and JIFX.

Peterson, W. (2025, February 7). *Microwave Monolithics* [Microsoft Teams].

Pipenberg, B. (2024, November 7). *Knightwerx* [Microsoft Teams].

Radermacher, A. (2025, February 14). *Odys Aviation* [Google Meet].

Templeton, J. (2025, February 10). *Bluespace.ai* [Microsoft Teams].

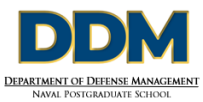
Vision & strategic framework. (2025). Naval Postgraduate School.

Warfare innovation workshops. (n.d.). Naval Warfare Studies Institute. https://nps.edu/web/nwsi/warfare-innovation-workshops

Warmoth, A. (2025, February 14). *Chariot Defense* [Microsoft Teams].

Wells, B. (2025, February 19). *uAvionix* [Microsoft Teams].

Youmans, T. (2024, November 7). *Rhoman Aerospace* [Microsoft Teams].

Acquisition Research Program
Department of Defense Management
Naval Postgraduate School
555 Dyer Road, Ingersoll Hall
Monterey, CA 93943

www.acquisitionresearch.net