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Bridging Academia, Industry, and the Dow: Developing an Innovation Accelerator at NPS

December 2025

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ABSTRACT

Defense innovation in the United States remains constrained by slow acquisition cycles, fragmented programs, and underused human capital. The Naval Postgraduate School (NPS) hosts a unique population of operationally experienced officers whose potential contributions to innovation are under-utilized. This thesis explores how an independent, third-party startup accelerator adjacent to NPS could bridge that gap. Using qualitative research and stakeholder interviews across defense, academia, and industry, it evaluates the feasibility and potential impact of such an accelerator. Findings indicate that a legally separate but closely affiliated accelerator could serve as a critical bridge across the "valley of death," linking early-stage concepts to fielded capabilities. Under strict ethical and conflict-of-interest safeguards, active-duty students could contribute operational insight to startups while gaining valuable learning from interacting with them that may contribute to their NPS experience. An accelerator could connect the DoW (Department of War), academia, and industry in a triple-helix ecosystem, accelerating technology transition through Cooperative Research and Development Agreements and Other Transactions. The thesis concludes that a startup accelerator adjacent to NPS could offer numerous benefits for NPS stakeholders.

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First and foremost, I would like to thank my thesis advisors, Dr. Nick Dew and Mr. Ken Beall, for their guidance, counsel, patience, and unwavering belief in this project. This work is one small contribution among many by those striving toward the same goal, and their passion, investment, and enthusiasm have set the standard for exceptional mentorship at NPS. Their collaboration and advocacy on my behalf have been invaluable.

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To the founding members of the NPS Entrepreneurship Club, thank you for your shared sense of purpose and belief in what this initiative can become for our club, our school, and the broader community. To Dr. Jeff Decker, Steve Blank, and the entire teaching team of Stanford's Hacking for Defense program, I am grateful for your inclusion and for the perspective, energy, and inspiration you brought to this project. The work occurring within H4D is helping to shape the future of national security.

I would also like to thank Lieutenant General Frank Donovan, USMC, for offering his time and strategic-level insights into the realities of defense innovation. To Col Rob Gerbracht, USMC, thank you for making the phrase "lethality is not an abstraction" a guiding principle of this project, one that helped guard against innovation theater across the defense enterprise. To Dr. Marina Theodotou, thank you for sharing your expertise in innovation strategy and for supporting this work with conviction. To Capt Ben Cohen, USMC (Ret.), your thought leadership and willingness to pressure-test ideas were instrumental; many of the final contours of this thesis bear your influence.

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LIST OF ACRONYMS AND ABBREVIATIONS

AFIT	Air Force Institute of Technology
AFWERX	Air Force Works (innovation organization)
AI	Artificial Intelligence
AWTL	Advanced Warfighter Technologies Laboratory
BUPERS	Bureau of Naval Personnel
C2	Command and Control
CAVR	Center for Autonomous Vehicle Research
CCW	Center for Cyber Warfare
CENETIX	Center for Network Innovation and Experimentation
CISER	Consortium for Intelligent Systems Education and Research
COI	Conflict of Interest
CRADA	Cooperative Research and Development Agreement
CNP	Chief of Naval Personnel
DARPA	Defense Advanced Research Projects Agency
DIU	Defense Innovation Unit
DoD	Department of Defense
DON	Department of the Navy
DoW	Department of War
GAO	Government Accountability Office
H4D	Hacking for Defense
HBS	Harvard Business School
HSI	Human Systems Integration
IRR	Individual Ready Reserve
JAG	Judge Advocate General
JIFX	Joint Interagency Field Experimentation
MOVES	Modeling, Virtual Environments and Simulation Institute
MIND Lab	Monterey Innovation for National Defense Laboratory
NDAA	National Defense Authorization Act
NPS	Naval Postgraduate School
NPSF	Naval Postgraduate School Foundation

NSIN	National Security Innovation Network
NSTXL	National Security Technology Accelerator Consortium
NWSI	Naval Warfare Studies Institute
OTA	Other Transaction Authority
OT&E	Operational Test and Evaluation
OUSD(R&E)	Office of the Under Secretary of Defense for Research and Engineering
PIA	Partnership Intermediary Agreement
PME	Professional Military Education
R&D	Research and Development
RDT&E	Research, Development, Test, and Evaluation
SBIR	Small Business Innovation Research
SJA	Staff Judge Advocate
SLAMR	Sea Land Air Military Research Facility
SOCOM	U.S. Special Operations Command
SOFWERX	Special Operations Forces Works (innovation hub for SOCOM)
S&T	Science and Technology
STTR	Small Business Technology Transfer
TRL	Technology Readiness Level
UAS	Unmanned Aerial System
UUV	Unmanned Underwater Vehicle
VR/AR	Virtual Reality / Augmented Reality

DISCLOSURE

Permission to use generative artificial intelligence tools for this thesis was granted following discussions with my thesis advisors, consistent with Naval Postgraduate School guidance on transparency in academic work. I used OpenAI's ChatGPT 5 and Anthropic's Opus 4.1 as supplemental tools to support both my writing process and the qualitative analysis of primary-source interview data conducted for this study.

AI was used in a constrained and advisory manner. For writing support, I employed the tool to help identify opportunities to improve clarity, organization, and concision in written drafts. All substantive ideas, arguments, and conclusions are my own, AI outputs were treated as suggestions that I accepted or rejected based on my judgment.

For qualitative research, I used AI to assist with the early stages of data sense-making. After transcribing my interviews, I utilized the tools to help surface potential themes, patterns, and relationships within the interview content. This use functioned similarly to a digital research assistant as it highlighted areas for deeper investigation, but it did not determine coding categories or analytical claims. I independently validated all themes through manual review, triangulation across interviews, and comparison with established theoretical frameworks. No interview data were shared, and all personally identifiable information was removed before using the tool to ensure confidentiality and compliance with research ethics.

Consistent with NPS guidance, I was attentive to risks associated with generative AI, including the possibility of model hallucinations, misinterpretation of qualitative data, or inadvertent stylistic influence. I mitigated these risks by verifying all AI-assisted observations directly against source materials, refraining from using AI to generate original findings, and conducting my own coding and analysis to ensure the integrity of the research. The final content, interpretations, and recommendations presented in this thesis are wholly my own.

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EXECUTIVE SUMMARY

The United States is in a race to out-innovate strategic competitors, but its acquisition system remains too slow, fragmented, and risk-averse to consistently move promising technologies from prototype to fielded capability. A sprawling "alphabet soup" of defense innovation programs has not solved the core problem, an enduring "valley of death" between research and development (R&D) and adoption, compounded by underused human capital and limited operator involvement in early development. Within this landscape, the Naval Postgraduate School (NPS) is a powerful yet underleveraged asset. Its mid-career officers bring recent operational experience and advanced technical education, but their ideas and research rarely translate into deployable capabilities or new ventures.

A. PROPOSED SOLUTION

This thesis argues that a third-party startup accelerator, adjacent to but legally independent from NPS, can serve as a missing bridge between warfighter problems and startup solutions. The central claim is that integrating NPS's active-duty students into a purpose-built accelerator may significantly improve the speed and success rate of transitioning dual-use and defense-specific technologies from concept to capability. By design, this accelerator would embody a "triple helix" of academia, industry, and government, aligning NPS's educational mission with national defense needs and private-sector innovation.

B. RESEARCH QUESTION AND APPROACH

The research is guided by one primary question: how can a third-party accelerator adjacent to NPS enhance defense innovation by integrating student participation into the broader defense innovation ecosystem? Supporting sub-questions examine organizational and legal models, student roles, ecosystem interfaces, metrics, and risk management. Methodologically, the study employs qualitative, exploratory research: a comparative case analysis of SOFWERX, the Defense Innovation Unit (DIU), and UC Berkeley's SkyDeck accelerator; document and policy review; and 65 semi-structured interviews and focus groups with stakeholders across NPS, Department of War (DoW) innovation organizations, industry, investment, and legal/acquisition communities. Innovation ecosystem theory and human capital theory provide the analytical lens, focusing on network health and the development of innovation-savvy officers.

C. KEY FINDINGS AND DESIGN FEATURES

Findings underscore NPS's unique niche. NPS sits at the intersection of operational military experience and advanced R&D, with daily access to warfighters, specialized laboratories, and a strong convening role in the wider defense innovation ecosystem. Stakeholders consistently described a gap: startups lack access to real user problems and acquisition "maps," while NPS students lack structured, legal pathways to work with startups or investors during their studies. An NPS-adjacent accelerator is widely viewed as a practical "front door" into the defense innovation system and one that can filter ideas against real capability gaps and connect relevant technologies to appropriate sponsors.

A key conclusion is that an accelerator must be operated by an independent third party off campus but in close physical and institutional proximity to NPS. Operating under a Partnership Intermediary Agreement (PIA) or similar authority would enable commercial-grade agility in hiring, partnering, and investment while maintaining alignment with DoW objectives. An off-base location lowers barriers for startups and investors, signals openness, and mirrors proven models such as SOFWERX, which uses a nonprofit intermediary to collaborate rapidly with special operations forces outside formal base constraints.

The study also confirms a viable legal pathway for student participation. An outside-employment memorandum and related guidance establish that active-duty students may engage with private firms, potentially including compensated advisory roles, subject to prior command and ethics approval, time and duty constraints, and strict conflict-of-interest and IP rules. Within these guardrails, NPS students can serve as "dual-purpose innovators," simultaneously advancing their education and contributing operational insight to startups. This shifts students from being passive recipients of innovation to co-creators, while preserving the integrity of service obligations.

Interview and case evidence converge on a set of design features for an accelerator. Cohorts should be gap-driven, anchored in validated DoW problem statements rather than technology push. Each team should receive early acquisition “Sherpa” guidance from seasoned acquisition professionals, with deliberate use of a CRADA-OTA-production pipeline to move from collaboration, to prototyping, to scaled fielding. Rigorous tech scouting and due diligence, structured access to NPS labs and experiments (e.g., via CRADAs), and a deep mentor bench spanning faculty, alumni, operators, investors, and legal experts are essential. Success metrics must prioritize transition outcomes; time-to-field, follow-on contracts, and capabilities adopted; and secondarily track startup funding, ecosystem connections, and educational benefits.

D. ANTICIPATED BENEFITS

The anticipated benefits span multiple levels. For DoW, an accelerator develops a cadre of officers fluent in both operational problems and innovation practice, strengthening the services’ absorptive capacity for new technology. For the wider innovation ecosystem, it may reduce fragmentation by providing a curated, NPS-anchored pipeline into DIU, AFWERX, service labs, Tech Bridges, and other hubs. For NPS, it may help convert existing research and student talent into tangible capabilities and elevates the institution as a living laboratory for defense innovation. More broadly, the model offers a template for other professional military education institutions and could contribute to strategic advantage by compressing time-to-field and improving the quality and relevance of adopted technologies.

E. RISKS, LIMITATIONS, AND POLICY RECOMMENDATIONS

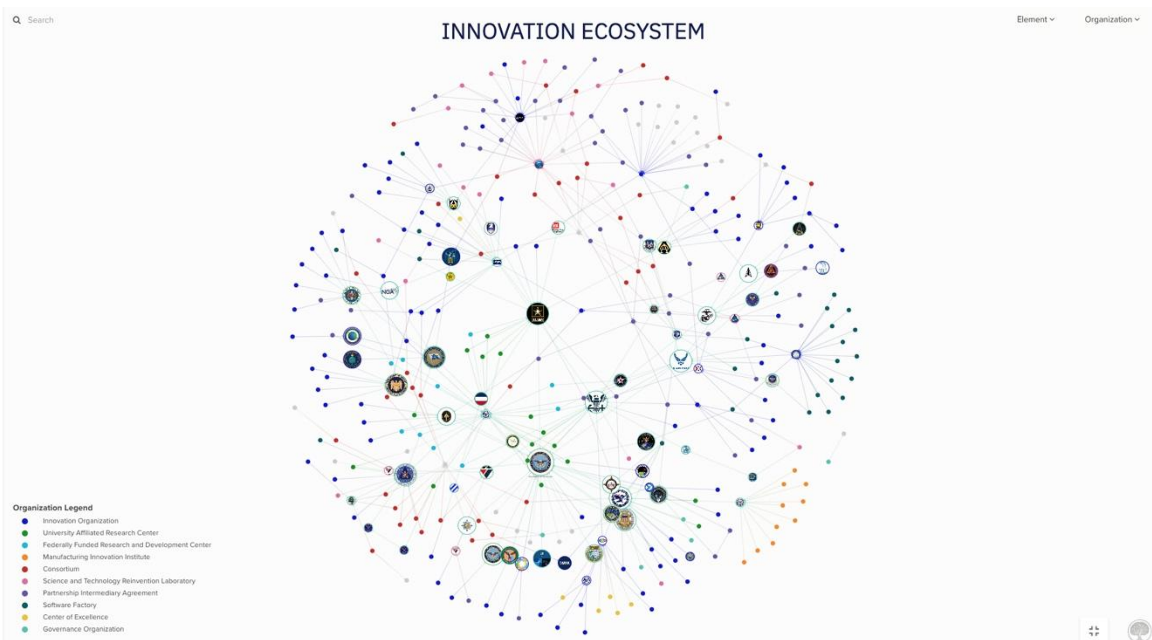
The thesis also surfaces risks and limitations. Conflict-of-interest and ethical pitfalls must be actively managed through approval processes, recusal rules, and transparent agreements. Funding sustainability requires a hybrid strategy that blends DON/DoW seed funding, philanthropy, and corporate sponsorship, with the potential for an affiliated venture fund. Institutional resistance, execution challenges, and unresolved legal nuances (e.g., detailed by-laws and specific policy exemptions) will demand senior-level advocacy and iterative refinement. The study is necessarily forward-looking; its projections of impact rest on theory, analogous programs, and stakeholder intent rather than observed performance of this exact model.

To address these challenges, the thesis offers concrete policy recommendations: formalize pathways for student innovation tours and fellowships; explicitly authorize and resource an NPS-adjacent accelerator under PIA or similar authorities; seed a pilot cohort with multi-sector funding; integrate an accelerator into existing defense innovation networks via memoranda and referral pipelines; and align promotion and talent-management systems so that meaningful innovation work is career-enhancing. Implemented together, these actions would empower NPS to function as a strategic bridge between the Department of War, academia, and industry, turning a currently underutilized graduate education asset into a mission-driven engine for defense innovation.

I. INTRODUCTION

The Department of War (DoW; used synonymously with Department of Defense) is in a race to out-innovate strategic competitors, yet its antiquated acquisition system struggles to keep pace with rapid technological change (Bloomberg, 2023). Senior defense leaders have emphasized that the United States must "win the race of adaptation" by fielding emerging technologies faster, or risk losing its military-technological edge (House Armed Services Committee, 2020, p. 33). Despite a $1 trillion-plus annual budget, many promising innovations never make it to the warfighter due to the infamous "valley of death" between research and development (R&D) and deployment. The past decade has seen an explosion of innovation initiatives, a veritable "alphabet soup of incubators, accelerators, pathways and other mechanisms" across the services (Carberry, 2023). Paradoxically, this proliferation has introduced new complexities. The DoW innovation ecosystem is notoriously difficult to navigate for both outsiders and insiders (Schmaltz & Cohen, 2022). As seen on the Office of the Under Secretary of War for Research and Engineering website (Figure 1), there are currently 294 different defense innovation organizations and programs, leaving startups, and even DoW personnel, confused about where to go and how to transition technology. A recent Defense Innovation Board report bluntly concluded that, despite dozens of efforts, the military "still cannot field emerging tech at the speed of relevance," jeopardizing U.S. technological superiority (Defense Innovation Board, 2023, p. 2). In short, the problem is not a lack of technology or ideas, it is the inability to rapidly adopt, integrate, and scale innovations within the current system.

Compounding these structural hurdles is a human capital problem. The defense innovation pipeline has focused heavily on technology and funding (Flagg & Corrigan, 2021), while often neglecting the user insights needed to drive adoption (Defense Innovation Board, 2023). DoW labs and venture programs can churn out prototypes, but they frequently lack sufficient involvement of end-users e.g., military practitioners early in the process to help refine these innovations. Military culture, with its hierarchical and risk-averse tendencies, further inhibits bottom-up innovation (Defense Innovation Board, 2023, p. 1). As one study noted, the Pentagon “doesn’t have an innovation problem; it has an innovation adoption problem,” (Flagg & Corrigan, 2021) the U.S. military excels at generating ideas and prototypes but struggles with implementing and scaling those ideas into real capabilities (Eckert, 2023). In sum, defense innovation today is not constrained by a shortage of new technology; it is constrained by institutional and cultural barriers to adopting new technology at speed and scale.



Screenshot of Under Secretary of War for Research and Engineering website depicting 294 active defense innovation hubs. Source: Under Secretary for War and Research & Engineering. (n.d.). *Innovation Ecosystem.* https://ctoinnovation.mil/innovation - ecosystem

Figure 1. The Defense Innovation Ecosystem

A. A GAP AT THE NAVAL POSTGRADUATE SCHOOL

Within this challenging landscape, the Naval Postgraduate School stands out as a potentially powerful, yet underutilized, innovation asset for the USN and the nation. NPS is home to over a thousand in-residence active-duty students at any one time pursuing graduate degrees in fields ranging from engineering and computer science to defense management. These students bring recent operational experience and real-world problem awareness from the fleet and field. They are ideally positioned to identify relevant problems and contribute to innovative solutions. In practice, however, NPS currently has “no structured pathway for people to start bottom-up” innovation that transitions beyond academic projects (Interview with NPS stakeholder, 2025). Student thesis work often culminates in papers archived in a database (NPS’s Calhoun), without mechanisms to turn those ideas into prototypes or startups unless individual students pursue extra efforts.

NPS leadership is aware of this gap. In late 2022, the Secretary of the Navy announced the establishment of a Naval Innovation Center (NIC) at NPS, calling for a “bold new vision for the naval education and innovation ecosystem” (Weston, 2022) to move research “from ideas to impacts … at greater speed and scale” (Mena-Werth, 2023a). Initial efforts under this vision have focused on piloting an “Innovation Capstone” course (Mena-Werth, 2023b) and standing up the Naval Innovation Exchange (NIX) program to expose students to real DoW problem sponsors (Naval Postgraduate School, 2023). These efforts remain under development. At the current time there is no dedicated accelerator or incubator program at NPS that can take a student-driven concept from early discovery, through prototyping, and onward to a fielded capability. NPS students with entrepreneurial ambitions or a viable technical solution currently lack a legal and organizational pathway to collaborate with private startups or investors while in school (due to ethics and service restrictions). By comparison, in Israel’s military innovation ecosystem, elite technological units (e.g., the IDF’s Unit 81 and Unit 8200) routinely spin out officers who launch tech ventures in the private sector, and then bring that expertise back into service, creating a virtuous cycle of innovation talent development (Shulman, 2021; Senor & Singer, 2009). There are also no formal processes and mechanisms for active-duty NPS students to interact with startups developing defense-related products and services, including the many that exist locally in Silicon Valley and the wider Bay Area. This represents a critical missed opportunity: NPS’s operationally-seasoned students and expert faculty could be a powerful engine for defense innovation if properly integrated into a broader ecosystem, rather than siloed in Monterey.

B. PROBLEM STATEMENT

NPS's student body is primarily comprised of mid-career military officers pursuing graduate degrees and represents an underutilized innovation force. These students bring fresh operational insights and technical acumen yet currently have few pathways to contribute to defense innovation projects beyond academic research. Meanwhile, defense-focused startups often struggle to navigate the DoW's bureaucracy and to validate their solutions against real military needs. Lengthy procedures and unclear pathways disincentivize smaller non-traditional firms from engaging; those that do attempt to work with DoW often become frustrated or run out of resources before ever securing a contract (McNamara et al., 2024, p. 1; Kotila et al., 2023, pp. 41–43). There is a clear gap that could be addressed: non-traditional vendors lack access to warfighter perspective and acquisition know-how, and NPS students lack a mechanism to collaborate with industry in a timely, ethically sound manner. A recent RAND study found that across various defense innovation organizations, "almost none" of the technologies they supported had been fielded to actual military users (Kotila et al., 2023, p. 43). How might a startup accelerator adjacent to NPS bridge this gap?

C. HYPOTHESIS AND ARGUMENT

An independent, NPS-adjacent startup accelerator can significantly increase the throughput of viable defense innovations to the field by harnessing NPS's warfighter–students in scouting, shaping, and transitioning technology. An accelerator provides a "mission Sherpa" function for startups, guiding them through military requirements, testing with operators, and acquisition pathways, while giving DoW organizations earlier access to relevant solutions. Managed appropriately, NPS students can act as dual-purpose innovators who are simultaneously learning through their graduate research and contributing to real-world problem solving by interacting with startups. This multiplies the impact of existing DoW innovation programs. The model is inspired by successful public-private innovation conduits like SOFWERX, where a nonprofit intermediary enables rapid collaboration between special operators and nontraditional companies outside the normal bureaucratic constraints (Ingram, 2021, p. 1065). An NPS-adjacent accelerator would similarly operate at arm's length to bypass red tape while maintaining DoW oversight and ethics, effectively connecting fast-moving private-sector startups with a huge body of diverse military user experience available in concentrated form at NPS. An NPS-adjacent startup accelerator would serve as a bridging institution to help promising technologies cross the Valley of Death.

D. CONTRIBUTION OF THIS STUDY

This thesis argues that a third-party startup accelerator adjacent to NPS is a missing piece that is needed to harness NPS's human capital for defense innovation. "Third-party" means an organization legally independent of NPS (for example, a nonprofit or public–private partnership) that operates at arm's length from NPS but may operate in close collaboration with it. Such an accelerator would serve as connective tissue linking NPS to defense startups, new ventures seeded by established defense industry players, new ventures seeded by tech giants (based on dual-use technology), new ventures spawned by other universities (e.g., the Stanford Hacking for Defense program), new ventures spawned by the national lab system (e.g. Lawrence Livermore National Lab) and the venture investment community. It would provide several benefits outlined below.

An accelerator would provide a structured pathway for NPS students to participate in real defense innovation projects (as advisors, team members, or even co-founders) under established legal and ethical guidelines. This would transform students from being merely an academic resource into active innovators tackling DoW problems. Instead of doing class projects and thesis research that ends its life in the NPS Library database, NPS students could contribute directly to prototyping and fielding new solutions (with appropriate faculty oversight and command approval). This hands-on involvement not only adds operational insight to emerging technologies (which benefits startups and their DoW customers) but also develops NPS students' innovation and leadership skills in the process (which benefits NPS' sponsoring agencies, principally the USN and Marine Corps).

Further, an NPS-adjacent startup accelerator would provide a bridge across the "valley of death" for promising technologies, leveraging NPS's R&D infrastructure along with the accelerator's network. For example, a startup could collaborate with NPS via a Cooperative Research and Development Agreement (CRADA) to test and mature prototypes and then work with other DoW agencies using fast-track contracting mechanisms like Other Transaction Authority (OTA) agreements to secure pilot projects (Interview with innovation advisor, 2025). In this model, an accelerator acts as a sherpa or guide, helping companies navigate the labyrinth of defense acquisition. It would connect them with the right military stakeholders, help line up funding (e.g. Small Business Innovation Research grants or other non-dilutive DoW funding) and keep the startup's efforts oriented toward deployment of technology to military customers. Providing this guided pathway through NPS and onward into programs of record, an accelerator would help carry new technologies across the gap from prototype to operational capability.

The establishment of an NPS-adjacent startup accelerator would allow ecosystem integration bringing together the "triple helix" of academia, industry, and government in a coordinated way. An accelerator would serve as a hub in Monterey (adjacent to Silicon Valley) where warfighters, students, entrepreneurs, and acquisition professionals can collide and collaborate. It could actively coordinate with existing DoW innovation entities, such as the Navy's Tech Bridges, the Defense Innovation Unit (DIU), AFWERX, SOFWERX, and others, ensuring that an NPS-adjacent startup accelerator does not duplicate efforts but rather fills known gaps. It would address a missing academic link in the triple helix model: situating an accelerator at an educational institution creates a learning-oriented innovation pipeline, one that not only develops new tech but also develops human capital among NPS officers. In essence, an accelerator would weave NPS into the broader defense innovation ecosystem, making NPS a living laboratory where ideas from the classroom or lab can quickly be stress-tested in the field. This kind of academia-industry-government integration is precisely what innovation scholars call for in building effective innovation ecosystems (Etzkowitz & Leydesdorff, 2000). With an NPS-adjacent startup accelerator, NPS can function more fully as a nucleus that connects these sectors in ways that drive both technological and human capital development.

In doing so, the proposed accelerator addresses both structural and cultural gaps in the current U.S. defense innovation system. Structurally, it provides an organizational vehicle outside the military bureaucracy that can act with the agility of a startup accelerator, scouting technology, making quick funding decisions, pivoting teams rapidly, while still maintaining alignment to DoW needs. Because it is a non-government entity (for example, run through the NPS Foundation or a similar nonprofit partner), an accelerator could operate at the speed of business, not the speed of government contracting, thus avoiding some of the red tape that slows down traditional programs. Culturally, this model empowers students and faculty to break out of the traditional schoolhouse silo and engage in entrepreneurial problem-solving. It injects a dose of Silicon Valley's experimental ethos into the military education environment. Over time, this helps inculcate an innovation mindset as a core competency of military officers, a need that defense innovation experts have repeatedly highlighted (Defense Innovation Board, 2023, p. 1).

In short, the central proposition of this study is that NPS's active-duty student population is an underutilized innovation resource, and that an NPS-adjacent startup accelerator is a promising course of action to mobilize this talent. By creating a novel interface that links academic insight with defense startups and rapid acquisition pathways, NPS can increase its contribution to the throughput of new technology from concept to fielded capability. If successful, this model could serve as a template for other defense educational institutions and ultimately help inject much-needed speed, agility, and end-user insight into the broader U.S. defense innovation ecosystem.

E. RESEARCH QUESTIONS AND SCOPE

The primary research question guiding this thesis is: How can a third-party accelerator adjacent to NPS enhance defense innovation by integrating student participation into the broader defense innovation ecosystem? Supporting sub-questions include:

1. What organizational and legal model are required for an NPS-adjacent startup accelerator to be successful while navigating constraints of government ethics rules and bureaucracy?
2. In what ways can NPS students interact with defense startups to maximize the benefits for their learning and human capital development? (in terms of roles, incentives, timing during their NPS studies)?
3. How might an NPS-adjacent startup accelerator interface with existing defense innovation organizations and DoW acquisition programs to ensure it is complementary rather than redundant? (For instance, what relationships should it have with entities like DIU, Tech Bridges, program executive offices, etc.?)
4. What are the anticipated outcomes of an NPS-adjacent startup accelerator for key stakeholders (NPS students, DoW problem sponsors, participating startups), and what metrics should be used to measure success?
5. What risks does an NPS-adjacent startup accelerator entails and how should they best be managed? For example, how should any potential conflicts of interest or downside threats to NPS's reputation be mitigated through policy or design?

The scope of this study is focused on NPS as a case example of a professional military education institution with the potential for an NPS-adjacent startup accelerator. While the findings and principles may have applicability to other DoW educational institutions, the recommendations are tailored to NPS's unique context (including its relationship with the NPS Foundation and existing innovation programs in Monterey). The time frame considered is the near-term (the next 1–3 years) for a pilot implementation, with a view toward long-term institutionalization if the pilot proves successful. This thesis does not attempt to cover every facet of defense innovation theory; rather, it draws selectively on that literature to inform the accelerator's design where relevant. The ultimate goal is to deliver an actionable blueprint, grounded in academic rigor and empirical research, for an NPS-adjacent startup accelerator that bridges NPS and the defense innovation ecosystem, thereby enhancing the throughput of new technology from concept to capability.

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II. LITERATURE REVIEW

A. BACKGROUND

Innovating at the speed of relevance in defense requires understanding of the ecosystem in which the innovation occurs, the institutions and pathways that can accelerate or add friction, and the human factors involved with it. This chapter reviews the scholarly and practical literature underpinning the concept of an NPS-adjacent accelerator. It explores why defense innovation often struggles to transition from prototype to fielded capability, and how theoretical frameworks like diffusion of innovation, the triple helix model, human capital theory, and public-private partnerships can inform solutions. The chapter then examines existing defense innovation hubs and accelerators, including AFWERX, SOFWERX, the Defense Innovation Unit (DIU), the National Security Innovation Network (NSIN), and university-based accelerators, assessing their approaches and limitations in the context of NPS. Throughout, the literature is synthesized to highlight key themes, tensions, and gaps. This thesis identifies a critical gap: no existing model institutionalizes the integration of active-duty military students with defense startups.

B. THE VALLEY OF DEATH

Defense leaders have long lamented the so-called "Valley of Death," the chasm between technology prototypes and their adoption at scale by the military. Despite a DoW budget exceeding $1 trillion, new technologies routinely "take too long to transition from lab to battlefield," leaving warfighters waiting years for solutions that already exist in prototype form (Defense Innovation Board, 2023, p. 4). Traditional DoW innovation programs, from Small Business Innovation Research (SBIR) grants to various tech accelerators, have generated thousands of prototypes, yet nearly half of participating companies see no meaningful growth in their defense business after these programs. Most small firms secure a contract only with their initial sponsoring military branch and never expand DoW-wide, indicating a systemic failure to scale innovations across the enterprise (Defense Innovation Board, 2023; McNamara et al., 2024). In short, many "innovative" solutions never actually reach the front lines. This phenomenon is referred to as the innovation adoption gap, wherein promising technologies languish due to funding shortfalls, bureaucratic hurdles, or lack of advocates, the dreaded Valley of Death in defense acquisition.

Several sources underscore the severity of this gap. A recent Defense Innovation Board study bluntly warned that despite "dozens of innovation initiatives, DoW still cannot field emerging tech at the speed of relevance, jeopardizing our military advantage" (Defense Innovation Board, 2023, p. 5). Similarly, the Atlantic Council's Commission on Defense Innovation Adoption found that the U.S. defense ecosystem remains unable to mass-test, procure, and field new capabilities within months, unlike adversaries who iterate technology faster (McNamara et al., 2024). The Commission highlighted that even as DoW has created many pilot programs and innovation offices, these efforts were "never formalized, shared, and integrated into a repeatable, transparent process capable of transitioning new DoW R&D entrants to recurring revenue at scale," i.e., they lack an institutional pathway to take a nontraditional vendor from prototype to a program of record (McNamara et al., 2024, pp. 18–19). The result is that DoW's acquisitions remain too slow and risk-averse to keep pace with modern threats. As the DIB report concluded, the current process-focused culture and rigid budgeting system make it "nearly impossible for nontraditional defense companies to contribute to the DoW mission" in a timely way (Defense Innovation Board, 2023, p. 5). Clearly, bridging this adoption gap is not just a matter of efficiency but of national security urgency.

From a theoretical perspective, diffusion of innovation theory helps explain why adoption falters in large institutions like the military. Everett Rogers' classic model posits that an innovation's spread depends on factors such as its relative advantage, compatibility with the existing system, complexity, observability, and trialability, as well as the social dynamics among adopters (Rogers, 2003). In the DoW context, many new technologies face compatibility and complexity issues, they must integrate with legacy systems and meet stringent requirements, which slows their uptake. Moreover, the social system of defense acquisition is hierarchical and rule-bound, not the free market. Rogers notes that early adopters and change agents are key to diffusing innovation (Rogers, 2003). Yet in DoW, those willing to champion unproven tech are often stymied by risk-averse oversight or the infamous "bureaucracy in uniform." In other words, even when a prototype clearly demonstrates relative advantage (say, a drone that can save lives on the battlefield), the organizational culture and processes may resist its adoption due to perceived risks, lack of a budget line, or the "not invented here" syndrome. Scholars have observed that public sector innovation diffusion tends to lag due to formalized procedures and accountability structures that prioritize avoiding failure over rapid experimentation (Lewis et al., 2018). This insight aligns with the DIB's findings that the acquisition workforce has weak incentives to embrace novel vendors or concepts, there is little reward for trying something new, and high career risk if it fails (Defense Innovation Board, 2023). Thus, the Valley of Death is as much a cultural and institutional problem as a financial one.

One poignant example comes from Landreth (2022), who chronicled a small startup's "data-intensive" journey through DoW's Valley of Death. The company had a viable technology and even early DoW interest, but navigating the labyrinth of contracting, testing, and budgeting took years, during which the startup nearly ran out of capital. Landreth's account illustrates how time is a killer for dual-use startups; if they cannot secure a military contract or other revenue within the short funding runway that venture capital provides, they will pivot to purely commercial markets or go under. This dynamic reveals a fundamental mismatch: private-sector technology moves in quarterly cycles, whereas DoW traditionally moves in multi-year cycles (McNamara et al., 2024). The longer it takes the Pentagon to say "yes" to a new technology, the more likely the innovating company will abandon the defense market. In effect, the absence of an early adoption signal from an end-user or program office causes promising solutions to die on the vine.

Researchers and commissions have proposed various remedies to bridge this gap. These include dedicated "bridge funds" to bankroll promising prototypes through the transition phase, more flexible acquisition authorities (Other Transactions, mid-tier acquisition, etc.), and better alignment of requirements and budgeting to allow rapid insertion of new tech (McNamara et al., 2024). Notably, the Atlantic Council

Commission (co-chaired by two former Service Secretaries) recommended establishing public-private partnership pilot programs and dedicated funding lines to scale up successful innovations (McNamara et al., 2024, p. 15). The idea is that by sharing risk and resources with the private sector, DoW can more quickly get technology out of the lab and into the field. This sets the stage for exploration of collaboration models: if traditional pipelines are broken, can new partnership models, especially those leveraging non-traditional actors like academic institutions and their human capital, offer a solution?

In summary, the status quo paints a stark picture of the defense innovation adoption challenge. A multitude of pilot programs, innovation cells, and contract vehicles have been created to bypass slow procurement, yet without a holistic, institutionalized pipeline, many innovations remain one-and-done pilots. The diffusion of innovation in DoW is hindered by structural and cultural barriers that leave startups stranded after initial demonstrations. This thesis takes that problem as a point of departure: How might an NPS-based accelerator cut through these barriers? To answer that, we turn next to theoretical frameworks on multi-sector collaboration and knowledge, which suggest that bridging academia, industry, and government could be key to accelerating innovation uptake.

C. ACADEMIA, INDUSTRY, AND GOVERNMENT SYNERGY

One relevant framework for understanding innovation ecosystems is the Triple Helix model of university–industry–government relations. Developed by Henry Etzkowitz and colleagues, Triple Helix theory posits that the key to innovation in a knowledge-based society lies in the dynamic interactions between universities, private industry, and government (Etzkowitz, 2003). Traditionally, each sector has a defined role: industry is the locus of production and commercialization, government sets the regulatory and funding environment, and universities generate new knowledge and talent. The triple helix model suggests these roles can overlap and intertwine, creating hybrid organizations and networks that drive innovation more effectively than any sector could alone (Etzkowitz, 2003, pp. 295–296). In an ideal triple helix, universities become more entrepreneurial, industry more open to knowledge exchange, and government acts as both regulator and collaborator.

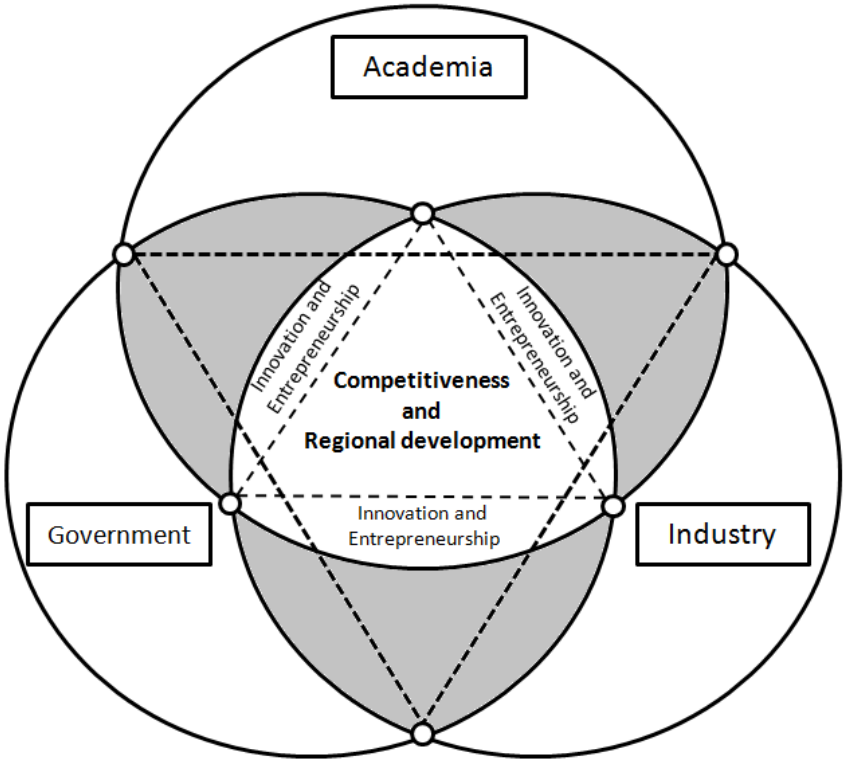

Figure 2. Triple Helix Diagram. Etzkowitz (2003)

In the defense context, this model can be mapped onto the problem. The Naval Postgraduate School, as a graduate research university within DoW, represents the academia strand; defense startups and technology firms represent industry; and military stakeholders (like the Navy or DoW acquisition offices) represent government. Triple Helix theory implies that a tighter coupling of these three, an "innovation triad," could significantly enhance defense innovation outcomes. Etzkowitz (2003) notes that universities can play a boundary-spanning role, linking cutting-edge science and educated talent with real-world applications by partnering with firms and agencies. Indeed, the concept of NPS acting as an innovation hub for the armed services aligns with this idea. NPS sits at a unique intersection: it is an academic institution educating active-duty officers (so it simultaneously embodies human capital development for government) and it conducts research, often in partnership with industry or other universities. Historically, however, this potential has not been fully tapped for rapid innovation cycles, NPS research might inform requirements or produce thesis prototypes, but there has been no institutional mechanism to directly transition those outputs into fielded solutions or startup ventures at regular volume. There are, however, anecdotal cases where a student may persevere through adversity and bureaucracy to get close to fielding a solution.

Some literature highlights examples of the triple helix in practice within defense acquisition. Werber et al. (2019) describe a "government–industry co-education" initiative and suggest extending it to government–industry–academia co-education, explicitly citing Etzkowitz's Triple Helix theory as a foundation (Werber et al., 2019, as cited in Kelley, 2024). The idea was that bringing government acquisition professionals, industry contractors, and students together in the same educational program improved mutual understanding and trust, essentially forging personal networks across the helix. Results indicated participants gained insight into each other's perspectives, which is crucial for collaboration (Kelley, 2024). This underscores a core triple helix insight: boundary spanners and cross-sector immersion can break down cultural barriers. In the context of an accelerator, active-duty NPS students and faculty could act as boundary spanners, fluent in both the military operational world and the language of technology and research. An accelerator creates a living triple helix environment by embedding these individuals in startup projects (or vice versa, embedding startups into the NPS ecosystem).

It is worth noting that Triple Helix theory also emphasizes the evolution of roles. For example, universities can generate startups (academic spin-offs), and industry can take on training roles, while government can become an entrepreneurial facilitator (Etzkowitz, 2003). We see glimmers of this in initiatives like the Air Force's AFWERX opening an office at the University of Nevada Las Vegas to plug into the local talent base (Kotila et al., 2023). Another example is NSIN's programs, which encourage students at universities nationwide to work on DoW problems (thus the government leveraging academia for solutions). However, these are still relatively disconnected efforts; Triple Helix theory would encourage a more institutionalized integration, precisely what an NPS accelerator seeks to achieve. By institutionalized integration, this thesis means formal programs and policies (agreements, curricula, legal frameworks) that deliberately bring the three spheres together in innovation projects, rather than ad-hoc collaborations or informal networking.

A successful triple helix is characterized by continuous knowledge flows: ideas and technology passing from universities (research labs, theses) to industry (products, startups) to government (requirements, acquisitions) in a recursive loop. In many ways, NPS is strongly positioned to enable such a loop for defense: its students bring operational problems into an academic setting (generating research questions and prototypes), and those outputs could be translated by partnering with industry innovators, then fed back into government acquisition. However, one barrier identified in practice is the lack of structural pathways for these interactions. For example, if an NPS student invents a novel device in a thesis project, what next? Without a mechanism, that intellectual property might sit on a shelf or in a dissertation, benefiting no one beyond an academic citation. Triple Helix theory would suggest creating incubators or accelerators affiliated with the university to carry those innovations forward (Etzkowitz, 2003). Indeed, civilian universities have tech transfer offices and startup incubators precisely for this reason, to push academic innovations into the market. The military equivalent has been nascent; only recently have we seen efforts like the Army's xTechSearch competitions or NavalX Tech Bridges trying to connect military labs and entrepreneurs (Kotila et al., 2023). But none of these explicitly leverage the student population as co-innovators.

In summary, Triple Helix provides a theoretical rationale for an NPS accelerator: formally entwining NPS (academia), defense entrepreneurs (industry), and military sponsors (government) in one program, we create a collaborative micro-ecosystem that can accelerate innovation. History suggests this kind of configuration can yield higher innovation output by combining the strengths of each sector, universities' knowledge creation and talent, industry's speed and risk-taking, and government's mission orientation and resources (Etzkowitz, 2003; Hui, 2025). The challenge, of course, is managing the different incentives and cultures. Trust and clear rules (especially regarding intellectual property and ethics) are necessary for the triple helix to function (Hui, 2025). These considerations will surface later when this thesis discusses legal and policy enablers for student involvement. Before that, we further examine the "people" side of this triad: the human capital at NPS and why it might be a linchpin for innovation.

D. HUMAN CAPITAL AT NPS

At the heart of any innovation ecosystem are the people, their skills, knowledge, and creative capacity. Human Capital Theory (Becker, 1993) argues that investments in education and training increase the productivity and innovative potential of individuals, yielding returns for both the individuals and their organizations. NPS is fundamentally a human capital investment engine: it takes talented officers and equips them with advanced education in science, engineering, defense analysis, and more. These officers (students and graduates) represent a unique form of human capital, they possess both domain expertise (operational military experience) and, after NPS, refined analytical and technical skills. Human capital theory would predict that utilizing such highly trained individuals in innovation activities should improve outcomes, because they can better identify relevant problems and solutions and adapt new technologies to real-world contexts (Becker, 1993).

In the literature on innovation adoption, one recurring theme is the importance of "user innovators" or lead users. Eric von Hippel (1986) famously observed that oftentimes the best innovations come from lead users – those on the frontlines who experience unmet needs and start devising their own solutions. In the military, active-duty personnel are the ultimate lead users for defense technology. They know the pain points, the mission requirements, and the context in which a new tool must function (often literally life-and-death scenarios). However, traditionally these same personnel have not been deeply involved in technology development beyond giving periodic feedback. NPS students, by virtue of being both active-duty officers and technically educated, are ideally positioned to be lead user-innovators. They can articulate operational problems in a way engineers can understand and, conversely, explain technological possibilities to military decision-makers. In essence, they carry and integrate knowledge from both the battlefield and the lab.

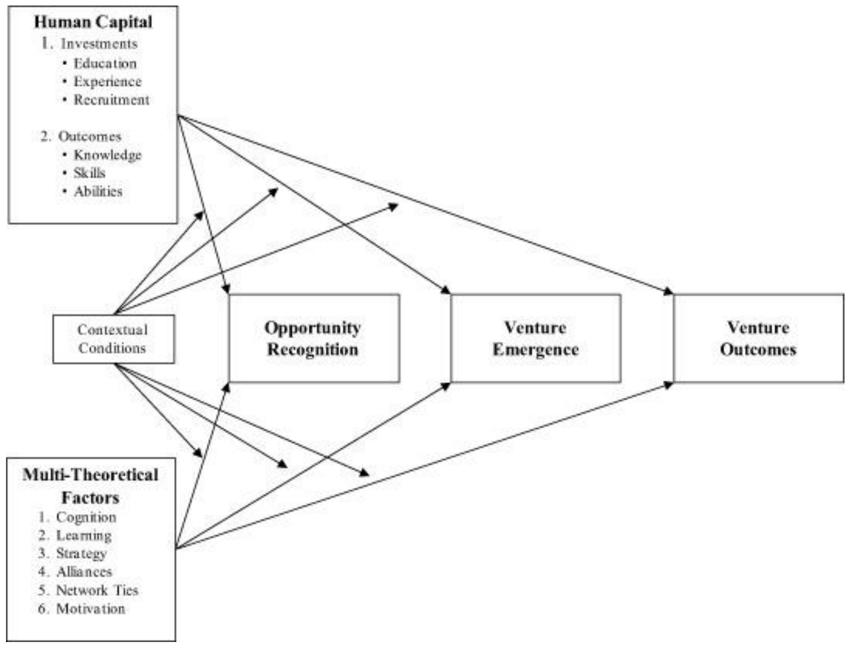

Figure 3. Human Capital Theory Diagram. Becker (1993)

The concept of "innovators in uniform" has started to gain traction. For instance, the Navy has experimented with programs like Task Force Ignite and "Fleet Scholars" to empower young officers to innovate, but these are generally internal initiatives. What's largely missing is connecting those innovators in uniform with external innovators (startups) and giving them a pathway to co-create solutions. Human Capital theory suggests that simply having talent is not enough; you must utilize it effectively. If highly trained officers are relegated solely to traditional staff roles and their ideas don't connect to acquisition programs or industry, that human capital is under-leveraged. On the other hand, if those officers can be matched with entrepreneurs who have technical prototypes, the combination can be powerful.

The literature on absorptive capacity (Cohen & Levinthal, 1990) suggests that an organization's ability to innovate depends on its ability to recognize, assimilate, and exploit external knowledge, and that ability comes from having knowledgeable people internally. In this case, NPS provides DoW with officers who have the absorptive capacity to engage with cutting-edge tech. For example, an AI startup will find it much easier to work with a Marine major who holds a master's in data science from NPS and has combat experience, than with someone who understands only one side of the equation. Several interviewees in a qualitative analysis at NPS noted that students initially underestimate their ability to contribute, but through exposure to innovation projects they "find their voice" and gain confidence to lead new initiatives (NPS Interview Insights, 2025). This anecdotal evidence reinforces the idea that structured involvement in innovation projects can turn latent talent into active innovation leadership.

Human capital is also about culture and mindset. An NPS-adjacent startup accelerator could imbue military participants with an entrepreneurial mindset, comfort with ambiguity, willingness to take calculated risks, iterative problem-solving, which is not typically emphasized in standard military education. Pinelli, Pistilli, and Cozzolino (2025) show that startup accelerators often cultivate an entrepreneurial paradox mindset in founders, teaching them to balance contradictory demands and learn both vicariously and experientially. Applying this to NPS, there is a two-way street: on one hand, exposing students to the startup accelerator environment could enhance their innovative thinking and agility (a positive return on the Navy's human capital investment). On the other hand, having those students work with startup teams provides the startups with critical insight and a direct line to the user community. This mutual learning reflects the double dividend of human capital in partnerships: both sides become smarter and more capable by working together (Smith & Lewis, 2011; Pinelli et al., 2025).

In summary, human capital theory underscores why active-duty students are such a valuable (and currently underused) asset in defense innovation. The literature suggests that organizations that leverage their educated workforce in innovation processes tend to outperform those that silo R&D away from practitioners. We effectively mobilize DoW's own human capital to accelerate adoption by integrating NPS students into an accelerator. This approach treats human talent not just as recipients of innovation (i.e., training warfighters to use new tech), but as agents of innovation. It is a shift from viewing uniformed personnel as end-users to viewing them as co-creators. The next section will examine how existing accelerator models handle (or fail to handle) such integration, and what partnerships between public and private sectors currently look like in defense innovation.

E. PUBLIC-PRIVATE PARTNERSHIPS AS A VEHICLE FOR DEFENSE INNOVATION

Bringing together military personnel and commercial startups inevitably requires bridging the public and private sectors. Public-Private Partnerships (PPPs) are collaborative arrangements where government entities and private organizations share resources, risks, and rewards in pursuit of a common goal (Klijn & Teisman, 2003). In the context of defense innovation, PPPs can take many forms, from formal contracts like Cooperative Research and Development Agreements (CRADAs) to less formal collaboration networks and co-funded programs. The appeal of PPPs is that they can combine the strengths of each sector: the government brings mission focus, funding, and access to test environments; the private sector brings innovation speed, investment capital, and a tolerance for risk and failure that government often lacks (Hui, 2025). Well-structured partnerships can, in theory, allow cutting-edge tech to be developed and fielded faster while maintaining appropriate oversight and meeting national security needs.

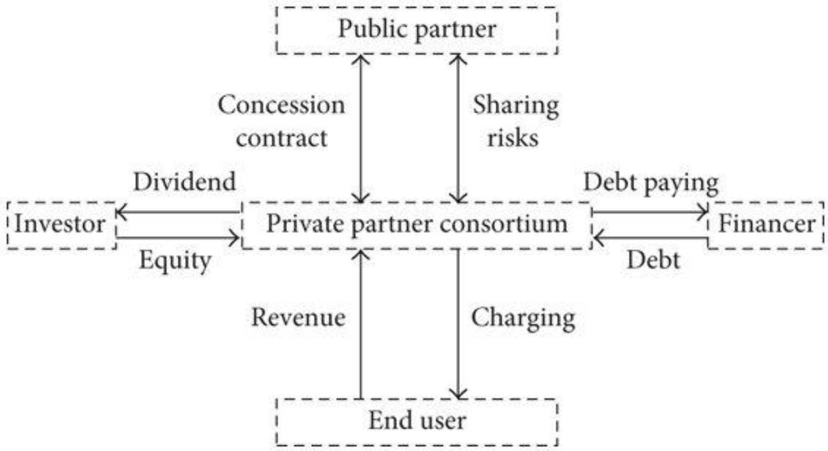

Figure 4. Public-Private Partnership Diagram. Liang & Jia (2018).

Hui (2025) notes that countries like the U.S., UK, and Australia increasingly use PPP approaches to speed up defense R&D, leveraging private-sector expertise and funding while setting standards to protect the public interest (ethical use, intellectual property rights, etc.). One model is the use of innovation hubs and consortiums funded jointly by DoW and industry. For instance, the Defense Innovation Unit (DIU) operates in a quasi-PPP mode: it uses DoW funds but awards them to startups through flexible contracts, effectively partnering with companies to prototype solutions for military problems. Another example is the Army's xTechInnovation competitions, which are public prize competitions that spur private startups to work on Army needs, a competitive form of partnership. The Navy's Tech Bridges, run by NavalX, explicitly connect naval labs, industry, academia, and local governments in regional clusters to facilitate PPP projects. Monterey, where NPS is located, actually hosts a Tech Bridge, which indicates the groundwork for PPPs involving NPS is already being laid (NavalX, 2021).

However, PPP is a broad term, and not all PPPs are created equal. A critical dimension in this case is organizational structure and legal flexibility. As seen in various accelerator models, a government-run program faces certain constraints (hiring, contracting, equity investment) that a private or hybrid entity would not. AFWERX, for example, is a government program office under the Air Force, it can award contracts (mostly SBIR grants) but cannot take equity in companies or offer financial incentives to military participants. In contrast, a purely private accelerator (like Y Combinator or Plug-n-Play in the commercial world) can invest in startups and operate at market speed, but it lacks any formal authority or connection to DoW. A solution, then, is a hybrid organization, something like an independent nonprofit that is closely affiliated with the government mission. SOFWERX is an illustrative case. SOFWERX is operated by a nonprofit partner (DEFENSEWERX) under a Partnership Intermediary Agreement with SOCOM. This structure allows SOFWERX to host open innovation events, quickly sign up small companies, and even do prototyping projects without the normal red tape, all while working on SOCOM-defined problems (Ingram, 2021). Essentially, SOFWERX is a PPP vehicle facilitating collaboration between SOCOM (public) and innovators (private). It has been cited as a best practice for rapidly sourcing ideas and demonstrating concepts, though it focuses on early stages (ideation and prototyping) rather than scaling to programs of record (Ingram, 2021).

Figure 5. Inside SOFWERX in Tampa, Florida.

An NPS-adjacent startup accelerator might also employ a PPP structure. For example, it could potentially use the NPS Foundation (a private nonprofit supporting

NPS) as a convening entity. This would mirror the approach recommended by the Atlantic Council Commission, which urged DoW to stand up pilot programs that "accelerate scaling [of] proven tech" through public-private partnerships and even co-investment funds (McNamara et al., 2024, p. 14). The Commission specifically advocated for a bridge fund, a pool of money from government matched with private venture capital, to finance companies through the Valley of Death. An NPS-adjacent startup accelerator could serve as a micro bridge fund, where an affiliated venture fund co-invests in cohort startups while they work through test and evaluation processes. This could be an innovative form of PPP: not just a facility, but an entwined program where government stakeholders (e.g. NPS and its sponsoring commands) and private investors/ startups work hand-in-hand daily for their own individual benefits but in a coordinated fashion that brings greater benefits than they could secure by working independently.

What does the literature say about the effectiveness of PPPs in innovation? Studies have found that PPPs can indeed speed up development and deployment by aligning incentives. One key success factor is clear governance: roles and expectations must be defined so that the partnership doesn't flounder in bureaucracy or, conversely, lose public accountability (Klijn & Teisman, 2003; Hui, 2025). In this scenario, that means establishing upfront how NPS students can participate in startups (what is allowed ethically, how intellectual property is handled, etc.), and how an accelerator entity interfaces with official Navy organizations (through CRADAs, Memoranda of Understanding, etc.). When those frameworks are in place, PPPs allow a flexible execution that government alone cannot achieve. For example, a PPP accelerator can hire entrepreneurs-in-residence, pay stipends or equity to participants (things DoW cannot do directly for active-duty members under current rules), and pivot quickly in program design as needed, all while keeping the government's objectives central. This agility is echoed in Deming's view (as cited in Kelley, 2024) that optimizing a complex system (like defense innovation) requires redefining traditional boundaries and letting each part contribute to the system's aim in new ways. PPPs essentially redraw boundaries between public and private in a controlled manner for mutual benefit.

In conclusion, public-private partnership literature supports the approach of an NPS-adjacent startup accelerator as a blended organization leveraging both defense and commercial innovation paradigms. Such a model can mitigate the Valley of Death by injecting private capital and speed ("the best of Silicon Valley") into the defense pipeline, while also injecting military needs and discipline ("Pentagon-savvy Sherpa guidance") into the startup world (McNamara et al., 2024; Defense Innovation Board, 2023). The outcome, ideally, is a win-win: startups get funding and early customer traction, the military gets solutions faster and cheaper, and both share the risks and rewards in a transparent way. With these theoretical foundations in mind, collaboration across sectors (triple helix), leveraging talent (human capital), and structuring partnerships (PPP). We now examine how existing defense innovation models embody or fall short on these principles, especially in relation to involving institutions like NPS.

F. EXISTING DEFENSE ACCELERATORS AND INNOVATION HUBS

Over the past decade, the U.S. defense ecosystem has spawned numerous innovation entities, 294 at the current count (OUSD (R&E), 2025), aiming to connect with nontraditional suppliers and speed up tech adoption. These include high-profile organizations like AFWERX and SOFWERX, dedicated units like DIU, broad networks like NSIN, and various university-affiliated accelerators or incubators. Each model offers lessons for an NPS-adjacent startup accelerator concept, in terms of both what to emulate and what gaps to fill. A thematic synthesis on this curated list of programs reveals common challenges and distinctions in approach.

Figure 6. Major Defense Innovation Hubs.

1. AFWERX

Established in 2017, AFWERX is the Air Force's marquee innovation arm designed to "capture innovations occurring in the private sector by placing itself geographically within top innovation ecosystems." It opened hubs in Las Vegas (UNLV), Austin, and Washington, DC, explicitly to tap into regional tech talent (Sandor, 2021, p. vi; Kotila et al., 2023). AFWERX's model is heavily built around the SBIR program (branded AFVentures): it runs open topic solicitations where startups apply for small contracts to demonstrate dual-use technologies. This approach indeed increased regional participation rates in Air Force innovation programs, indicating success in attracting new companies (Sandor, 2021). AFWERX also runs Spark (grassroots innovation with airmen at bases) and Prime (focus areas like Agility Prime for flying cars, where AFWERX tries to advance a whole commercial sector). What AFWERX does well, according to analyses, is provide funding and a stamp of legitimacy to startups via Phase I/II SBIR contracts and challenge awards (Kotila et al., 2023). It also facilitates "matchmaking" by introducing startups to Air Force end-users and program offices in a limited way (AFWERX hosts demo days and even "Collider" events to connect innovators with problems) (Kotila et al., 2023). However, AFWERX stops short of full integration of academic institutions or students into its core programs. Its presence at UNLV is more about co-location than using students in projects. The mentorship provided in AFWERX accelerators comes from business experts and Air Force liaisons, not from embedding warfighters in the startup teams. Moreover, being a government entity, AFWERX cannot, for example, take equity in startups or directly incentivize Airmen with equity, it relies on contracts and grants. It has a bureaucratic limit in that sense (Ingram, 2021). Thus, while AFWERX addresses part of the problem (funding early prototypes), it doesn't ensure those prototypes transition to full programs (Kotila et al., 2023). Indeed, once SBIR contracts end, many companies still hit the Valley of Death because there's no bridge to a program of record. AFWERX has been working to improve this by encouraging Phase II to III transitions, but the stats suggest many SBIR-funded projects don't get into acquisition programs. Another limitation is that AFWERX primarily supports dual-use tech (commercial viability), it is less equipped to nurture a startup whose only customer would be the military, as most accelerators demand a broader market for investment. This focus can leave purely military-specific innovations (with high strategic value but low commercial appeal) without support.

2. SOFWERX

SOFWERX was created in 2016 via a Partnership Intermediary Agreement with a nonprofit, specifically to give SOCOM a "safe space" to experiment and collaborate with outsiders (Ingram, 2021). It hosts design workshops, technology prize challenges, and rapid prototyping events in a facility in Tampa, Florida, easily accessible to industry and academia (no base access required). Literature on SOCOM's innovation ecosystem (Ingram, 2021) credits SOFWERX with injecting agility into a highly bureaucratic system. For example, SOFWERX can convene a diverse group, a Green Beret, a university professor, an AI startup founder, to brainstorm solutions to a SOCOM problem, something that would rarely happen inside official channels. It has also pioneered events like "Thunderdrone" (for counter-drone innovation) and has pathways to quickly fund prototypes. SOFWERX essentially embodies the triple helix at a micro level: it's co-located near the University of South Florida, engages industry routinely, and is tied to a government command's needs. Yet, even SOFWERX has boundaries. It focuses on early-stage idea generation and prototyping events; it is not an accelerator program with a multi-month curriculum or investment in companies. After initial prototypes, projects still must transition to SOCOM's acquisition office (SOF AT&L) to get fielded, where they can face the usual hurdles (Ingram, 2021). Also, like AFWERX, SOFWERX does not systematically involve students or leverage an educational institution in program delivery, it is more of an open collaboration hub. SOCOM personnel (including junior officers) do participate in SOFWERX projects as problem owners or evaluators, but this is ad hoc and not tied to an educational credit or long-term development plan for those individuals. An NPS-adjacent startup accelerator could take a lesson here: embedding NPS students in a similar fashion but for the duration of a cohort, as part of their thesis or coursework, would institutionalize what SOFWERX does informally. It's also worth noting that SOCOM leadership values innovation highly and gives SOFWERX strong support; scaling that model to the broader Navy/DoW (with NPS as a focal point) would require similar top-cover and culture change beyond the special operations community.

3. Defense Innovation Unit

DIU (formerly DIUx) was launched in 2015 as the Department of War's outpost in Silicon Valley. Its mission is to identify commercial emerging technologies and adapt them to military uses by awarding prototype contracts quickly. DIU's literature and annual reports emphasize speed and nontraditional contracting: they use Other Transaction Authority (OTA) agreements to go from problem statement to contract award in 60–90 days, far faster than typical procurement (Brown, 2018). DIU essentially acts as a matchmaker: a DoW entity comes with a problem, DIU scouts the private sector for solutions, then pays one or more companies to prototype and hopefully transition to a follow-on production contract with that DoW partner. DIU's successes include projects in AI, autonomy, and space that likely would not have come through the normal acquisition pipeline. However, DIU's scale is relatively small (just a few dozen projects a year) and it does not operate like an "accelerator" with cohorts or education, it's more a rapid contracting shop with some consulting elements. Importantly, DIU does not involve students or an academic component; it's staffed by DoW civilians and some active-duty liaisons, plus many Silicon Valley experienced personnel. So DIU demonstrates the power of a focused organizational interface between DoW and tech industry, but it is centrally run and doesn't draw on the broader defense educational system. Also, DIU's track record on transitioning prototypes to actual DoW programs has been mixed, some make it, some still stall due to the Valley of Death once the prototype phase is over (Kotila et al., 2023). This underscores that without changes in the receiving acquisition programs, even a fast initial contract isn't a silver bullet.

4. National Security Innovation Network

NSIN (National Security Innovation Network), originally called MD5, is an Office of the Secretary of Defense program that focuses on human and network capital for defense innovation. It explicitly partners with universities and incubators nationwide to run programs like "Hacking for Defense" (H4D) courses, student internship programs (X-Force Fellows), hackathons, and startup workshops oriented to national security problems. NSIN's approach is essentially educational and community-building: it exposes students (primarily civilian university students, but also some from military academies and NPS) to real defense problems and encourages them to develop solutions, sometimes forming ventures. One could say NSIN seeds the ground by inspiring talent to work on national security challenges and connecting them with DoW stakeholders. For instance, the H4D program (taught at Stanford, previously at NPS, and other schools) has student teams validate problems from DoW sponsors and prototype solutions over a semester. While H4D has led to a few startup companies and even some direct transitions, it's not an accelerator per se… it's a class. NSIN also has a program called "Foundry" which is more incubator-like for student entrepreneurs, and "Accelerator" in some regions which are short bootcamps. But again, these involve early idea formation rather than scaling existing tech. The notable thing for this context is NSIN's emphasis on academia-government collaboration, which aligns with triple helix ideas. Yet, because NSIN is not resourced or structured to carry projects beyond the concept stage, there is a handoff problem. Many great student-generated ideas or prototypes from NSIN programs still lack a bridge to become operational capabilities (Kotila et al., 2023). There's a gap between the creative ideation stage and the formal acquisition or investment stage. An NPS-adjacent startup accelerator could fill exactly that gap by taking promising concepts (whether from NPS theses, H4D projects, or external startups) and nurturing them through prototyping and into adoption pathways, with students remaining involved past the initial class project. In essence, NPS-adjacent startup accelerator would complement NSIN by adding the later-stage acceleration and transition focus that NSIN currently doesn't provide.

5. University Accelerators

In the broader innovation landscape, many universities run accelerators or incubators to spin out startups (often tied to their technology transfer offices). For example, MIT's Engine incubator focuses on tough tech, Stanford's StartX was a well-known accelerator for student founders, and UC Berkeley has SkyDeck, etc. These accelerators typically leverage the university's research, alumni entrepreneur network, and sometimes university-affiliated venture funds to help student or faculty-led startups succeed. They show that academia can indeed host accelerator programs effectively, providing mentorship, workspace, seed funding, and access to investors. However, their focus is generally commercial (healthcare, software, consumer devices, etc.) and only tangentially defense-related unless a founder chooses a defense market. There are a few notable defense-oriented academic initiatives, such as the MIT Lincoln Laboratory's programs for transferring defense lab technologies to industry, or Texas A&M's Bush Combat Development Complex which hosts an innovation combine for Army Futures Command. These suggest a growing interest in defense-university partnerships. Yet, no existing university accelerator systematically incorporates active-duty military students. Civilian university accelerators might have veterans or ROTC cadets participating, but not active-duty officers who are simultaneously pursuing a degree and working on defense tech. NPS, being a DoW institution and graduate school, is singular in that respect, it's uniquely positioned to have active-duty participants. The closest analog might be the Air Force Institute of Technology (AFIT), which educates Air Force officers. AFIT doesn't run an accelerator, but one could envision something similar there. The lack of examples indicates a gap in literature and practice: models for "academia to startup" pipelines and some for "government to startup" exist (via AFWERX, DIU), but none for "academia and government to startup" in one integrated program. This thesis essentially explores that uncharted territory.

G. GAPS IN THE LITERATURE

The literature across these models highlights a few tensions and gaps. In consideration of speed verses structure, many of these programs (AFWERX, DIU, etc.) gained speed by operating outside normal structures (using OTAs, partnership intermediaries, etc.). But this can lead to fragmentation, lots of little islands of innovation that don't connect to the big Army/Navy/Air Force processes. A challenge moving forward is institutionalizing the successful practices without losing agility (Defense Innovation Board, 2023). An NPS-adjacent startup accelerator intentionally straddles formal and informal: it would be formally supported (through NPS agreements) but operate informally in execution (an independent accelerator entity). This balance may chart a path to scaling innovation efforts while preserving flexibility.

1. Dual Use Bias

Another gap to consider is dual use bias. Accelerators often focus on dual-use tech (with commercial markets) as a proxy for viability. Yet some critical defense needs have no immediate commercial analog (e.g., a submarine tracking system). If we only support dual-use, we miss innovations in purely military domains. The literature (Kotila et al., 2023) notes that many DOW innovation orgs emphasize dual-use because private investors demand it, which leaves a gap for defense-specific startups that might have high impact but low ROI. The proposed accelerator model, by virtue of being mission-driven and having DoW partners, could support defense-only ventures by providing alternative funding (e.g., DoW experimental dollars or foundation grants) and validating their military market so that they attract non-traditional funding (like defense-focused VC funds). This approach aligns with recent recommendations to "strengthen alignment of capital markets to defense outcomes," essentially encouraging investment into defense tech even when commercial payoff isn't obvious (McNamara et al., 2024). An NPS-adjacent startup accelerator may be a mechanism to signal to investors that a defense-only tech has an assured path to procurement, thus making it investable. This may be a small number of startups but they nonetheless may be working on tech that has important national security applications.

2. Measuring Success

Traditional accelerators measure success in private-sector terms: follow-on investment raised, company valuations, exit multiples. Defense programs measure success by capability delivered, contracts awarded, problems solved. One critique in literature is that current defense accelerators don't sufficiently track or ensure the latter, they might boast of dollars awarded to startups or contracts signed, but not whether a new capability was actually fielded and made a difference (Kotila et al., 2023). An NPS-adjacent startup accelerator is envisioned to prioritize warfighter outcomes (e.g., number of prototypes deployed in units, number of technologies transitioned to a Program of Record) as the primary metrics, with startup fundraising as a secondary enabler. This inversion of metrics is quite novel in the accelerator space. It acknowledges a tension: sometimes what's best for national security (a tech that yields capability but not huge profit) might not align with investor interests. By being a public-private hybrid, an accelerator can serve two bottom lines: it seeks strategic impact while also aiming for venture sustainability. Literature on public value (Bozeman, 2002) suggests such dual-purpose organizations can succeed if they are carefully managed to avoid one goal eclipsing the other.

3. Student Integration

With regards to student integration, no existing model fully uses active-duty students as this thesis proposes. NSIN comes closest with H4D, but that's class project level. There is therefore a gap in both literature and practice on how to manage the integration of active-duty students with private startups in a way that is ethical, legal, and productive. The absence of this in prior models is likely due to concerns: conflict of interest, intellectual property ownership when a government employee contributes to a company, time management with academic duties, etc. These are valid issues and are discussed in policy-oriented literature (e.g., DOW ethics guidelines, JAG opinions). A significant part of this thesis (and Chapter 3's methodology) will deal with identifying solutions to these issues (such as the use of CRADAs, Limited Purpose CRADAs, and clear legal guidance to allow student participation). The literature doesn't have an off-the-shelf answer, which is precisely why this research is needed. We have to pull together threads from different domains, acquisition law, higher education policy, and innovation management, to craft a new model.

H. THE MISSING LINK: A STARTUP ACCELERATOR ADJACENT TO NPS

Through this review, a clear gap emerges. Numerous studies analyze defense innovation failures and partial solutions (funding gaps, cultural issues, etc.). Theories like triple helix and human capital point to the potential of closer academia-industry-government collaboration. There are examples of defense accelerators and innovation initiatives, each addressing pieces of the problem (funding early-stage tech, engaging operators, leveraging academia for ideas). Yet no existing literature or program fully integrates active-duty military students into a structured accelerator model to bridge the gap between prototypes and adoption. In other words, we find studies on defense innovation and studies on accelerators, but none on defense innovation accelerators embedded in a military education institution.

This thesis aims to fill that gap by exploring the design and implications of an NPS-adjacent startup accelerator that provides a venue for NPS officers to engage with startups. The absence of such a model in the literature is notable. It suggests perhaps an implicit assumption that military personnel (especially students) should remain consumers or facilitators of innovation rather than drivers of it. The argument, drawing on the reviewed literature, is that this assumption is outdated. The complex challenges of defense innovation today, from rapidly evolving technologies to agile adversaries, demand new approaches. One approach is to unlock underutilized resources, and NPS's rotating pool of 1,500+ graduate students each year is exactly that: a wellspring of expertise and fresh operational insight that can be channeled toward innovation if given the opportunity and structure.

Establishing an NPS-adjacent startup accelerator would be operationalizing the Triple Helix (university serving as innovation hub), capitalizing on Human Capital (officers as innovators), and in partnership with private entity (an accelerator hosting startups). It directly addresses several gaps identified. It creates a repeatable pipeline for scaling prototypes (closing the Valley of Death), it focuses on transition outcomes and not just tech demonstrations, and it institutionalizes a collaborative model that existing accelerators only partially emulate.

Critically, these insights also help shape the methodological approach in Chapter 3. Knowing the pitfalls of prior efforts, the thesis methodology will pay special attention to stakeholder perspectives (through interviews and case studies) on student involvement, and to analyzing why previous accelerators didn't fully solve adoption (to design better metrics and processes). The literature provides cautionary tales (AFWERX's difficulty in Phase III transitions, or NSIN's lack of follow-through) which inform the hypotheses and questions this research will pursue.

In conclusion, while innovation in defense has no shortage of studies and initiatives, there remains a novel space for exploration at the intersection of defense education and startup acceleration. In synthesizing theory and practice, there is a compelling argument for an NPS-adjacent startup accelerator: it could help create an ecosystem where warfighters (students), technologists (startups), and acquisition professionals (sponsors) collaborate in real time, accelerating the diffusion of innovation in ways that overcome current adoption barriers. The next chapter will detail how the plan to investigate this proposition, including the research design, data collection, and analytical methods can evaluate the feasibility of an NPS-adjacent startup accelerator.

III. METHODOLOGY

To investigate a proposed NPS-adjacent startup accelerator model, this study employs an exploratory qualitative research design grounded in comparative case studies and stakeholder interviews. The complexity of defense innovation ecosystems and organizational change is best addressed with qualitative methods that capture rich insights from practitioners and stakeholders (Yin, 2018). Rather than a purely theoretical or quantitative approach, the research is inductive – building findings from descriptive evidence – and geared toward discovery. Two primary components define the design: (1) a comparative case analysis of relevant innovation organizations, and (2) semi-structured interviews and focus groups with stakeholders across the defense innovation ecosystem. These are complemented by document analysis of policy papers, reports, and prior studies for context and triangulation. By integrating multiple data sources, the methodology seeks a holistic understanding of both "what" an accelerator might look like (key design features) and "why/how" it might work (underlying mechanisms, rationales, and anticipated challenges). This multi-method approach is well-suited for examining a nascent, complex initiative in a real-world setting (Miles, Huberman, & Saldaña, 2014). It also reflects the hybrid nature of the inquiry, bridging academic analysis with practitioner insight to produce actionable recommendations.

A. ANALYTICAL LENS

Throughout the study, two conceptual lenses were applied to interpret the data: *innovation ecosystem theory* and *human capital theory*. These frameworks provided a guiding structure for analyzing how an NPS-adjacent startup accelerator might create value for various stakeholders.

Through Innovation Ecosystem Theory this thesis focused attention on the network of actors, relationships, and resources that must interact for innovation to thrive (Budden & Murray, 2025). Its viewed that NPS, the startups, DoW end-users, investors, and other partners are part of an emerging defense innovation ecosystem. Ecosystem theory considers the health of those interactions, for example, does an accelerator facilitate knowledge flow and trust between students, companies, and military sponsors? Are there structural holes or missing connections in the current system that an accelerator could fill? It also underscored the importance of measuring ecosystem health in terms of diversity of participants, strength of collaborations, and tangible outcomes (e.g., new solutions fielded or sustained engagement beyond the program). By using this lens, the analysis looked beyond individual projects to evaluate how an accelerator could cultivate a sustainable "hub" or node in the broader defense innovation network. This meant that findings and recommendations address not only internal program design but also how NPS might interface with external ecosystem elements like Tech Bridges, industry consortia, and innovation arms of other services.

With Human Capital Theory the accelerator is viewed through the prism of human capital development, the idea that investing in people's skills and experiences yields returns in productivity and innovation (Becker, 1993). In this context, NPS students are not just potential participants in an accelerator but a primary "output" of value to the defense community. This lens kept the analysis attentive to how an accelerator experience would enhance students' competencies, networks, and innovative mindset, effectively producing future innovation leaders for the Navy and DoW. It raised questions such as: What do students learn or gain by working with startups or pursuing venture projects, beyond a traditional thesis? How can those gains be measured or demonstrated (e.g., in terms of creative problem-solving skills or venture creation know-how)? Human capital theory also highlighted incentive structures, for instance, this thesisconsidered how involvement in an accelerator could be recognized in students' career progression or how to motivate faculty to support such experiential learning. By combining this people-centric view with the ecosystem view, the analysis balanced the technology outcomes (e.g., prototypes, solutions) with the talent outcomes (skilled, networked officers) of an accelerator. In essence, the proposed accelerator is evaluated not only as a pipeline for technology innovation, but also as a pipeline for developing human capital within the defense innovation ecosystem.

Using these two lenses in tandem allowed for a richer evaluation. Innovation ecosystem theory ensured the examination of structural and relational factors beyond

NPS's boundaries, while human capital theory ensured that sight of education and individual growth outcomes was kept. They each align with the dual mission of NPS as an academic institution serving national security, producing both innovative solutions and innovatively-minded military professionals.

B. COMPARATIVE CASE STUDIES

This thesis selected several case examples to inform an accelerator design, using purposive sampling to cover different facets of the envisioned model. Each case offered an analogy or lessons for NPS, representing a distinct archetype, a defense partnership intermediary, a government-led innovation unit, and a university-based accelerator. The three primary cases studied were SOFWERX, DIU, and UC Berkeley's SkyDeck.

1. SOFWERX

SOFWERX is an innovation hub operating via a Partnership Intermediary Agreement (PIA) with a nonprofit, which conducts rapid prototyping events for SOCOM. Key aspects of SOFWERX's model were examined: its legal structure (the PIA mechanism), how it integrates operational military end-users ("operators") into innovation activities, how it runs challenges/accelerator-style events, and its outcomes in terms of prototypes transitioned to the field (Ingram, 2021, pp. 22–25). A similar PIA construct might be used to interact with an NPS-adjacent startup accelerator. NPS has an inactive PIA called "Fleetworks" that could potentially serve this purpose. Studying SOFWERX's governance and culture showed how a small external-facing entity maintains flexibility while delivering value to a major command, a balance NPS will need to strike as well.

2. Defense Innovation Unit

Although not a traditional cohort-based accelerator, DIU's mission closely aligns with an NPS-adjacent startup accelerator's goal of connecting commercial innovation to military needs. This thesis traced DIU's evolution as described by its leadership and official reports, from the "bridge-builder" ethos of DIUx 1.0, through the "fast follower" prototyping focus of 2.0, to the current 3.0 emphasis on scaling solutions into programs of record (Defense Innovation Board, 2023). This provided lessons on pitfalls and best practices for sustaining an innovation unit. DIU's use of embedded liaisons in commands and its creation of rapid contracting pathways (e.g. Other Transaction Authority agreements) are particularly informative precedents. There were noted recent critiques of DIU: for example, a 2025 GAO evaluation found that DIU lacked clear performance metrics and could improve collaboration with other DoW innovation organizations (U.S. Government Accountability Office [GAO], 2025, pp. 307–314). These insights informed how an NPS-adjacent accelerator might define success measures and coordinate with external entities like DIU, who has an establish memorandum of understanding with NPS currently.

3. UC Berkeley SkyDeck

UC Berkeley SkyDeck is a prominent university-affiliated startup accelerator, SkyDeck combines venture investment (through an affiliated fund) with venture-building programming and access to university resources. This thesis reviewed SkyDeck to understand how an academic institution can host an accelerator serving both educational and innovation objectives. Key facets included its governance structure (UC Berkeley-owned but operated in partnership with investors and mentors), funding model (a venture fund provides capital and shares returns with an accelerator), and integration of students (often as interns or project teammates for the startups). SkyDeck offered a civilian benchmark for how NPS might blend an accelerator into its graduate education and research mission. For instance, SkyDeck's practice of involving students in startups suggests a parallel to NPS: military students could be embedded in defense-focused startups or projects, contributing operational insight while learning entrepreneurship. SkyDeck's successes and challenges helped shape recommendations on mentorship, funding, and academic-credit considerations for an NPS-adjacent startup accelerator.

4. Other Organizations

In addition to these in-depth cases, several other organizations and historical efforts were reviewed for supplementary lessons. Notably, the National Security Innovation Network (NSIN), especially its Hacking for Defense (H4D) program that links students with real defense problem sponsors, provided a model of distributed, university-based innovation training (Pidgeon, 2017). This thesis also examined the Air Force's AFWERX programs (e.g., open innovation challenges and "Prime" technology accelerators) and prior NPS innovation initiatives (such as a short-lived "Center for Defense Innovation" proposed in 2016, and the ongoing NPS Central Coast Tech Bridge activities). These were not full case studies but offered additional data points and context. Collectively, surveying this landscape of analogs ensured the accelerator design is informed by relevant precedents across defense, government, and academic innovation domains.

C. QUALITATIVE DATA COLLECTION

The core evidence for this study comes from qualitative interviews and group discussions with a diverse array of stakeholders in the defense innovation ecosystem. In total, 65 interviews were conducted, through a mix of one-on-one conversations and small focus groups, using a semi-structured interview guide. Participants were purposefully selected to cover the spectrum of perspectives needed to evaluate an accelerator concept. The sample included voices internal to NPS, within the broader defense community, from industry/investment circles, and in policy or legal roles. This breadth was intended to capture both the enthusiastic "champions" of innovation and potential skeptics or gatekeepers. Key categories of interviewees (with example participants) are outlined below.

1. NPS Internal Stakeholders

Current NPS faculty involved in innovation or entrepreneurship programs, students with innovation project experience, and NPS leadership or staff engaged in initiatives like the Naval Innovation Center and the NavalX Tech Bridge on campus. For example, a focus group was held with the NPS Naval Innovation Center's chief operating officer (innovation lead), an NPS Foundation representative, and a current student entrepreneur. This roundtable provided on-the-ground perspective about institutional challenges and opportunities at NPS (NPS innovation stakeholders focus group, 2025). Additionally, the thesis advisor, an NPS professor deeply involved in defense innovation, contributed via ongoing discussions (these advisory inputs were recorded in notes and treated as data points). Engaging these insiders yielded insights on how an accelerator might fit into NPS's culture, curricula, and bureaucracy.

2. Defense Practitioners

Senior military officers and DoW officials with innovation experience. This group included, for instance, a General Officer from U.S. Special Operations Command, the Director of the Defense Innovation Unit (a Senior Executive Service official and Navy Reserve officer), and a branch liaison and program manager from DARPA. These high-level practitioners provided validation of the needs an accelerator aims to address and signaled potential support from the "demand" side. The General, as a prospective end-user of innovations, articulated what a combatant command would want from an NPS accelerator, for example, alignment of student projects to real capability gaps on SOCOM's priority list, and stressed the importance of understanding existing acquisition "boxes" before trying to innovate outside them. Such perspectives helped ensure the proposed model would deliver value to military sponsors rather than just academic value.

3. Industry and Investor Voices

To gauge private-sector interest, individuals from the venture and startup world were interviewed, including a prominent venture capitalist and successful founder known for defense tech investment and a leader of a tech startup incubator (a co-founder of a technology innovation space). These external perspectives confirmed that a program connecting military students with startups could be very attractive outside the gate. For example, the innovation space founder enthusiastically remarked that having DoW students embedded in startups would be "game-changing," because "startups don't know what the end users need, working with DoW students could change that." This sentiment underscores how NPS students can add operational insight and credibility to early-stage companies, while students gain entrepreneurial experience, a mutual benefit an NPS-adjacent startup accelerator can leverage to draw industry participation.

4. Policy/Acquisition Experts

This category comprised defense acquisition professionals, legal advisors, and policymakers who understand the regulatory and incentive environment. While a direct interview with a Navy contracting officer (a noted gap) was not secured, the insights from a former OSD (Office of the Secretary of Defense) acquisition reform leader were captured via a published interview. The research also gathered input from a current Defense Innovation Board member (who was interviewed directly in 2024). An NPS staff attorney was consulted informally to map out ethical and legal considerations if students work with private companies. These experts highlighted the "guardrails" for the accelerator concept, for instance, conflict-of-interest rules, intellectual property concerns, and the need for creative mechanisms (like CRADAs) to enable student involvement in industry projects without violating federal regulations. Their input guided the governance proposals and ensured the model would comply with (or strategically leverage) DoW acquisition policy. Importantly, they also pointed out what policy changes might be needed in the long run to fully empower such academic-private partnerships.

All interviews were conducted between January and August 2025. A large portion took place in mid-July 2025, when an NPS innovation symposium and the 10th anniversary Hacking for Defense conference created opportunities to access many key individuals in person. Further, research was conducted at the following conferences which granted further opportunities to interview stakeholders; NPS Innovation Symposium 2025, SeaAirSpace 2025, SOFWeek 2025, HBS/MIT National Security and Technology Conference 2025, and Stanford DEFCON 2025. Interviews typically lasted 30–60 minutes. The interviews followed a semi-structured format: a core list of guiding questions ensured certain topics were covered (e.g. "What gaps in defense innovation could a program like this fill?," "How should students be involved or what value could they add?," "What would an ideal accelerator look like to you?," "What obstacles or risks do you foresee?"), but the interviewees were encouraged to speak freely and introduce any other relevant observations. This flexible format allowed the capture of unanticipated insights while maintaining some consistency across interviews (Kallio et al., 2016). With permission, interviews were recorded when possible, and in all cases detailed notes or full transcripts were produced soon after each session to ensure accuracy.

Participating in a demonstration of an augmented reality training aid concept built by a Harvard Business School startup.

Figure 7. Visit to a Startup's Headquarters

All qualitative data (transcripts and field notes) were analyzed using an inductive thematic coding approach (Miles et al., 2014). A coding framework was first developed that combined a priori categories drawn from the research questions and interview guide with open codes for emergent topics. For example, expected themes such as "Acquisition barriers," "Student role," and "Legal/COI (conflict of interest)" were defined in advance, but new themes like "Israeli model reference" or "Metrics – time to field" were added as they arose from the data. Each transcript was read and annotated line-by-line. Segments of text were labeled with one or more codes corresponding to the content of that excerpt. Through iterative review, similar codes were grouped and refined. This coding process enabled systematic comparison across interviews. For instance, under the code "Legal/COI," inputs from at least four different interviewees, spanning faculty, legal advisors, and industry, all flagged concerns about intellectual property and ethics rules that could complicate students working with companies. Under "Student value-add," numerous comments (especially from industry and senior officers) highlighted the operational expertise and networks that mid-career NPS students bring, which are key advantages for innovation teams. The coding helped reveal patterns and consensus points versus outlier views by clustering related evidence.

After coding, the next step was distilling these findings into coherent themes that directly address the research objectives. Following a pattern-matching strategy (Yin, 2018), this thesis compared the qualitative results against initial expectations derived from the literature review and concept papers. This tactic enhances internal validity by seeing how well observed stakeholder perspectives align with or contradict anticipated patterns. For example, it was initially hypothesized that some senior military leaders might be skeptical about students collaborating with startups (worrying it could distract from primary duties). In practice, the data showed the opposite in many cases, notably, during a panel of Service Chiefs in 2025, the Chiefs of the Army, Navy, Air Force, and Marines all voiced strong support for deeper tech education and open innovation pipelines for officers, explicitly encouraging initiatives that sound akin to the accelerator concept. This convergence between expectation and evidence bolstered confidence in proceeding, whereas in other areas pattern-matching revealed surprises that prompted an adjustment to the approach. Where stakeholder feedback diverged from what was assumed (for instance, industry folks were even more eager to engage than expected), those insights were used to refine the accelerator design and the arguments presented in the thesis. In short, the analysis phase iteratively tested emerging themes against both prior theory and stakeholder realities, ensuring that the findings presented in Chapter 4 are grounded in evidence and informed by relevant frameworks.

D. LIMITATIONS

Qualitative research demands careful steps to ensure credibility and trustworthiness of the findings (Lincoln & Guba, 1985). Several techniques were employed in this study to strengthen validity. Triangulation was a foundational strategy: wherever possible, insights were corroborated with multiple sources of data. For example, the importance of using CRADAs as an on-ramp to OTA contracts emerged in an NPS focus group discussion, was echoed in a DIB report, and was further illustrated in a 2024 NPS news story about students using a CRADA to prototype a new technology (Defense Innovation Board, 2023; Norket, 2024). The convergence of interview testimony, external expert recommendation, and documented example gave high confidence in highlighting CRADA pathways as a key enabler for an NPS-adjacent startup accelerator. Member checking was conducted on an ad hoc basis: after key interviews, to ensure understanding of critical points to the interviewees (either in follow-up emails or subsequent chats) interviews were played back to verify accuracy. In a few cases, interviewees reviewed draft summaries of their input to ensure their perspective was not misconstrued. This feedback loop helped correct any misinterpretations early and lent credibility to the synthesized themes.

My positionality as an "insider" (an active-duty NPS student deeply interested in innovation) provided both contextual advantage and potential bias. On one hand, being embedded in the NPS environment allowed access and a nuanced understanding of institutional culture that an outside researcher might lack. On the other hand, it raised the risk of seeing the accelerator idea too sympathetically or overlooking institutional negatives. To mitigate this, reflexive practices were adopted. I consciously bracketed my personal enthusiasm during analysis, as my faculty advisor advised, I tried to "delay drawing conclusions until themes emerge" from the data, rather than forcing the data to fit preconceived notions. Throughout coding and writing, I regularly consulted with peers and mentors, exposing my preliminary findings to critical feedback (a form of peer debriefing). This helped challenge assumptions and refine interpretations. By systematically coding all data and grounding assertions in direct evidence (quotes or examples), I aimed to let the stakeholder voices drive the conclusions, thereby reducing the influence of my own bias.

Despite these measures, certain limitations must be acknowledged. First, the sample of interviewees, while broad, was not exhaustive of all relevant stakeholders. Notably, an interview of a Navy contracting officer or personnel specialist from Bureau of Naval Personnel (BUPERS) was not conducted, both of whom would ultimately play roles in implementing a program like this. Their absence means some practical hurdles (in acquisition or manpower policy) might be underappreciated in the analysis. The findings and recommendations rely on the assumption that the senior leaders and innovation experts that were interviewed (including generals, tech CEOs, and DoW innovation officials) are reflective of broader sentiments in their communities. That assumption introduces some uncertainty; for example, it's possible that mostly "true believers" in innovation were interviewed who are inherently optimistic. In fact, there is an optimism bias inherent in the data: because many interviewees were identified through innovation networks or came forward due to interest in the topic, the study likely captured a disproportionately positive view of an accelerator concept. To counterbalance this, every interviewee was deliberately asked to also play devil's advocate, to identify risks, downsides, or reasons an accelerator might fail. These candid responses are included in the analysis and were invaluable in sharpening the thesis. Participants raised concerns about faculty incentives (e.g. "How will professors get credit or time for supporting this?"), turf issues ("Will the NPS Foundation or others feel their territory is threatened?"), and bureaucratic resistance (one Navy stakeholder jokingly warned "you're gonna need buy-in from BUPERS… this is going to make their heads explode" when discussing a non-traditional career-development program). Such frank critiques helped ensure that recommendations address potential failure points, not just ideal scenarios.

In summary, this methodology, using qualitative case studies and interviews, analyzed through rigorous coding and informed by relevant theory, provides a robust evidence base for designing an NPS-adjacent startup accelerator and assessing its expected impact. By blending real-world insight with academic frameworks and taking steps to validate findings, the approach aims to be both rigorous in method and pragmatic in outlook. It recognizes the operational realities of defense innovation while maintaining transparency in how conclusions were reached. The next chapter presents the findings from this research process, organized by the major thematic areas that address the primary research questions.

IV. FINDINGS

The research yielded a set of findings that both validate the need for an NPS-adjacent accelerator and inform its design. Stakeholders across defense, academia, and industry echoed common themes about gaps in the current innovation ecosystem and offered concrete recommendations to bridge them. This report organizes the findings into eight areas: (1) NPS's niche in the defense innovation ecosystem; (2) evidence validating an NPS-adjacent startup accelerator as a solution to identified gaps; (3) the case for a third-party off campus establishment; (4) stakeholder perspectives on the role of NPS students in innovation; (5) key design features for an accelerator (derived from interview insights); (6) the establishment of a legal pathway for student startup engagement; (7) integration of acquisition pathways (e.g. CRADA, OTA) into the model; and (8) how an NPS-adjacent startup accelerator may connect NPS, DoW, and industry into a functioning ecosystem.

A. NPS'S NICHE IN THE DEFENSE INNOVATION ECOSYSTEM

A central finding is that NPS is uniquely positioned to bridge the "innovation adoption gap" in the defense ecosystem. Multiple interviewees described a persistent problem, promising technologies and startups struggle to transition into fielded military capabilities, leaving a "Valley of Death" between prototypes and real adoption. A senior special operations leader characterized this gap bluntly, too often, without a clear tie to validated DoW needs, "we just get pitched a better sniper rifle" that never scales. He noted that many innovation efforts lack an anchor in enterprise-level capability gaps, leading to solutions that are interesting but not relevant to urgent military problems. This view was echoed by NPS faculty: "A lot of these companies…are not necessarily driving towards enterprise level gaps…they're just not super relevant." In other words, the broader ecosystem produces plenty of tech innovation, but much of it misses the real needs of warfighters or never finds a sustainable DoW transition path.

Interviewees consistently identified NPS's unique assets as a remedy for this disconnect. NPS sits at the intersection of operational military experience and advanced

R&D, giving it the ability to validate problems and solutions in a way few others can. As one NPS Foundation leader observed, the school's "uniformed talent," its mid-career officer students and its laboratories provide an invaluable testbed for new ideas in real military contexts. Unlike purely civilian accelerators or distant Pentagon offices, an NPS-affiliated accelerator would have daily proximity to warfighters who understand current capability gaps and can evaluate technology against real operational challenges. This insider perspective is a niche currently unfilled by existing innovation programs. Defense Innovation Unit (DIU) is largely a fast-contracting shop removed from the troops, and Navy "Tech Bridge" programs (e.g. NavalX) lack direct on-site warfighter involvement. By contrast, NPS offers a built-in community of military practitioners and researchers who can identify genuine problems and iteratively experiment with industry on solutions. An NPS-adjacent startup accelerator could thus ensure startups tackle validated DoW needs from the start, rather than inventing problems to fit their products.

Furthermore, stakeholders noted that NPS's location and convening power in the broader innovation ecosystem give it leverage to bridge communities. The school already hosts high-profile defense innovation events and research forums, "the fact that we have NPS and [the annual] acquisition symposium here…is a huge thing," attracting defense leaders, industry, and academia. An NPS-adjacent startup accelerator can piggyback on these convenings to scout relevant technologies and connect innovators with end-users. In effect, an accelerator may act as the "front door" to the defense innovation ecosystem for dual-use startups, as one interviewee framed it. This finding directly addresses the research question on why establish an NPS-adjacent startup accelerator, the school's ecosystem role is to serve as a hub where operational demand (warfighter problems) meets technological supply (innovators), accelerating adoption of solutions that matter. It also sets the stage for the program design to emphasize problem-solution matching as a core function.

Finally, this theme connects to broader patterns observed in defense innovation: successful initiatives deliberately position themselves at intersections of communities. For example, the DoW's Defense Innovation Unit (DIU) was stood up in Silicon Valley, not on a military base, specifically to "boost collaboration with tech industry companies and especially startups" (Pabst, 2024) and serve as an outpost linking commercial innovators to defense needs. Similarly, an NPS-adjacent startup accelerator aims to link the military user community with the entrepreneurial tech community, bridging a long-recognized gap in the innovation ecosystem. In summary, the findings underscore that an NPS-adjacent startup accelerator can fill a vital niche by focusing its accelerator on translating relevant innovations into DoW use, capitalizing on the school's dual role in the defense and technology worlds. This clarity of purpose, bridging the adoption gap, guides many design decisions discussed later in this chapter and is a cornerstone of the recommended program model.

B. VALIDATING THE ACCELERATOR CONCEPT

There was broad consensus among interviewees that a bridging mechanism is needed between defense startups and the formal acquisition system, and that an NPS-adjacent startup accelerator is an ideal location for it. Multiple experts described the current situation in which many innovative companies struggle to find relevance or transition opportunities in DoW. As one NPS faculty advisor observed in an interview, "A lot of these companies... are not driving towards enterprise-level gaps... they're just not super relevant." He highlighted that NPS, with events like its annual acquisition research symposium and its proximity to warfighters, could be a venue to identify relevant problems and match them with solutions. The same individual emphasized the need for an on-ramp pipeline: "Getting them into a creative relationship with the Naval Postgraduate School is an on-ramp for them to be able to compete for an OTA... we have given them the on-ramp across the valley of death." This metaphor of NPS as an "on-ramp across the valley of death" succinctly validates an accelerator's purpose, helping startups cross the notorious gap between prototype and adoption (often called the valley of death in innovation literature).

From the DoW side, senior leaders stressed that any innovation initiative must tie into validated capability gaps and clear transition paths. A General officer from SOCOM was explicitly supportive of an approach that conducts early down-selection of ideas based on their alignment with true needs: "Shark Tank the ideas... have the hard discussions early," he advised, to filter out "nice-to-have" gadgets and focus on what really fills a gap. He effectively argued for a structured, accelerator-like process that would introduce rigor up front and prevent wasted effort on irrelevant projects. Donovan also gave what amounts to a doctrinal endorsement of involving operators in innovation and educating them on the system, "Educational institutions like NPS should prepare officers to identify gaps and bridge them to acquisition systems... Does the education build enough of the box to be able to jump out of the box?" This quote captures the essence of this thesis, officers must understand "the box" (the defense acquisition system) well enough that they can later innovate respective of constraints effectively. It validates using NPS as a training ground for intrapreneurs who can work around bureaucracy intelligently after learning its contours.

On the industry side, venture investors and startup founders interviewed supported the idea that having military end-users and acquisition experts on hand in an accelerator would significantly de-risk their engagement with DoW. One prominent venture capitalist noted that many startups "don't realize they're solving a problem the military has already solved or doesn't care about," suggesting that an intermediary (like the accelerator) could prevent such disconnects. This aligns with a DARPA program manager's observation that often "people fall in love with their idea... and don't realize it's not actually a good idea [for DoW]." He advocated vetting concepts against existing capabilities and genuine military needs, exactly the kind of translation and due diligence an accelerator's selection process can implement.

Taken together, these perspectives validate that an NPS-based accelerator would address a genuine gap in the ecosystem, the translation, filtering, and relevance-matching function that neither startups (who lack military context) nor the acquisition system (which lacks bandwidth for outreach) currently perform well. Interviewees also acknowledged that NPS brings unique assets, notably its operationally experienced students and its research labs, to perform this bridging function. Other innovation initiatives like AFWERX or DIU, while valuable, might not fully exploit these particular assets. Thus, an accelerator adjacent to NPS is not redundant but rather additive to the broader defense innovation ecosystem. Its niche would be early problem–solution matching and preparing companies to enter existing DoW programs (like OTA prototyping contracts, SBIR/STTR phases, or even direct acquisitions). In sum, the data provided a green light on the core concept that stakeholders see clear value in an accelerator that connects innovative companies with the real needs and pathways of the defense enterprise, using NPS as the hub.

C. THE CASE FOR A THIRD-PARTY, OFF-CAMPUS ACCELERATOR

One of the most crucial findings is the near consensus that the accelerator should be established through a third-party entity and located off the NPS campus. This recommendation, voiced by NPS leaders, legal advisors, and external partners, goes to the heart of the research question on organizational form: should the accelerator be part of NPS or separate? The evidence strongly favors an autonomous structure (e.g., a for-profit or non-profit or foundation-run center) that is adjacent to NPS but not part of NPS nor governed by any of its operating rules or norms. Operating via a third party sidesteps bureaucratic constraints that would otherwise bog down a truly agile accelerator. As one faculty advisor put it, "We can't ask for it…we're part of the [Navy] executive. The [NPS] Foundation is a private entity…they can lobby." This highlights that NPS, as a government institution, cannot pursue certain funding or policy changes (like lobbying for support), whereas an independent partner can. More generally, an accelerator embedded within NPS or the Navy would be subject to federal hiring regulations, contracting rules, and military administrative processes that are notoriously slow. In contrast, interviewees noted that a separate organization under a Partnership Intermediary Agreement (PIA) or foundation umbrella could hire quickly, make deals, and pivot as needed. "Once you make it a PIA…you don't have to follow DoD 5000 or DoW hiring rules. That's what SOFWERX is doing," one advisor emphasized, pointing to SOCOM's off-base SOFWERX as a successful model. In fact, SOFWERX, created via a PIA with a non-profit (DEFENSEWERX), operates "outside of military confines" specifically to enable fast collaboration with industry. Similarly, the findings indicate that an NPS-adjacent startup accelerator must have one foot in the military world and one foot outside to reconcile speed with access, a third-party structure provides that balance.

Stakeholders also advocated for the physical location to be off-campus (though nearby) as a deliberate choice. Practically, an off-campus facility can be openly accessible to industry and academic partners without the entry barriers of a secure military base. NPS campus, while not as restrictive as a weapons station, still has gated access that could deter drop-in visits from Silicon Valley entrepreneurs or venture capitalists. An NPS Foundation executive observed there is little downside to establishing an "off-campus infrastructure" for the accelerator, funded by a separate entity, as long as legal and cultural hurdles are managed. Several interviewees noted that creating a more neutral, commercial-facing space would foster the right collaborative culture, more like a startup incubator, as opposed to an on-base office which might feel bureaucratic. This aligns with patterns seen in other innovation hubs: for instance, SOCOM chose an off-base historic building in Tampa, Floria for SOFWERX to signal accessibility and invite non-traditional participants. Likewise, Stanford University hosts many industry collaborations in its adjacent Stanford Research Park and at off-campus labs. The classic example is the SLAC National Accelerator Laboratory, which sits on Stanford land just west of the main campus (Kekauoha, 2022, para. 5), administratively connected but physically distinct. That separation allows SLAC to operate with Department of Energy funding and external partners while still benefiting from Stanford's academic community. In Monterey, an off-campus accelerator in the right location would similarly inhabit a "best of both worlds" space: close enough to leverage NPS resources and talent, but independent enough to welcome private sector partners and move with commercial speed.

The third-party model finding also rests on legal insight. NPS has an existing but underutilized PIA called "FleetWorks," which could theoretically serve as the vehicle to stand up an accelerator. Alternatively, the NPS Foundation (a non-profit that supports the school) could create a subsidiary specifically to run the accelerator. Interviewees weighed these options, and the consensus was that any of them would be preferable to a new program office inside NPS. A Naval officer familiar with such partnerships stated plainly that using an external vehicle is essential to avoid conflicts with federal statutes, for example, DoW cannot easily take equity in startups, but a foundation or non-profit could hold equity or manage a venture fund in support of the accelerator's mission. This influenced the program design to propose governance via the NPS Foundation (or a closely allied non-profit) operating under a PIA with NPS. In that arrangement, NPS can contribute facilities, personnel on detail, and access to labs, while the third-party entity can handle contracts, funds, and intellectual property deals with startups more flexibly. It essentially mirrors the SOFWERX/DEFENSEWERX approach or other "innovation hubs" that leverage partnership intermediaries.

Another aspect of stakeholder feedback on structure was the importance of maintaining arm's-length distance from official Navy endorsement. By being third-party, an NPS-adjacent startup accelerator can take slightly more risk on unproven companies and speak with a distinct voice in the investor community. One interview participant from SOCOM stressed that while military leadership will support the initiative, they prefer it not appear as just another government program, which could scare off some commercial players. An NPS-adjacent startup accelerator should instead present as a neutral ground, facilitated by the Navy's ecosystem but not bound to procure everything that passes through. This gives both DoW and industry participants a zone to innovate together without immediate commitment or fear of failure reflecting on the Navy. Any successes can transition formally to the Navy or other DoW components when ready, through CRADAs or OTAs, whereas failures "fail fast" without bureaucratic fallout. The off-campus, third-party construct provides this sandbox effect.

The findings strongly justify an off-campus accelerator operated by a third-party (foundation) vehicle. This structure offers agility, legal flexibility, and partnership openness that an on-campus, government-run model cannot match. It answers the research question about where and under what auspices to establish an accelerator: the recommendation (supported by both interview data and case exemplars like DIU and SOFWERX) is to situate it adjacent to but outside the gate of NPS, under a non-government entity's management. This finding is pivotal, as it underpins many practical aspects of the program design, from facility planning and staffing to the legal agreements that will govern accelerator operations.

D. STAKEHOLDER PERSPECTIVES ON STUDENT PARTICIPATION

A striking finding was the enthusiastic yet cautious support for active-duty NPS student involvement in defense innovation projects. Initially, one might assume traditionalists would insist that students focus solely on academics. However, the data shows that many stakeholders, from military leaders to the students themselves, see significant value in engaging students in real-world problem solving through an accelerator. Students are viewed as having operational credibility and a fresh perspective that can ground innovation efforts in reality. In one roundtable discussion, a student participant described the moment of discovering NPS's under-the-radar innovation ecosystem: "I literally felt like I opened pandora's... I didn't know there were so many opportunities [I could access]." This quote indicates that students are eager to contribute once they become aware of opportunities, but awareness is low and existing pathways are unclear. Indeed, the roundtable revealed that many NPS students only discover avenues like the NPS Foundation's innovation programs or hackathons late in their time at school, if at all, often without enough runway to utilize effectively. A formal accelerator program would institutionalize that discovery process, making innovation involvement an integral and visible part of the NPS experience rather than a secret menu item that only a few stumble upon.

Military leadership interviewees also recognized the value of student involvement but underscored the need for the right structure and guidance. From SOCOM's perspective, it was implied that students/officers must be taught to focus their creativity on real, validated gaps (again, "inside the box" thinking before going outside), and not to "throw rocks at the system until you understand the system." A DARPA service liason was even more direct: he cautioned that students and new innovators "must become familiar with acquisition fundamentals... Before you get spun up on an idea... there's a ton of research that needs to be done." In other words, part of innovation training should be learning about prior art, existing programs, and the acquisition landscape to avoid reinventing the wheel or chasing already-solved problems. This finding directly informed the accelerator curriculum, its planned to include acquisition workshops and technology landscape assessments so that student teams won't, for example, excitedly pitch a "better mousetrap" that the Army already has in inventory.

Faculty and NPS leadership interviewees generally supported student participation if it's done under proper supervision and doesn't detract from academics. They noted a pragmatic hurdle, faculty incentives at NPS are not currently aligned with mentoring student innovation projects. Professors are extremely busy and not formally rewarded for extra mentorship outside of thesis supervision. As one faculty member put it, "It's really hard to get faculty involved without money being part of the equation." This suggests the accelerator may need its own pool of adjunct mentors or provide stipends/credit for faculty advisors, which is addressed in the design recommendations. There was also concern about overcommitment: a student's primary duty is their graduate education, so any outside project work must be carefully bounded. This reinforced the importance of establishing clear policies (like the outside employment approval described in Finding 6 below) and limiting the time students devote to startup projects during the academic quarter.

Interestingly, several interviewees noted an evolution in student mindset during their time at NPS. Initially, many students are cautious, steeped in a military culture of compliance that makes everything feel highly regulated with little room to explore. But with exposure to new ideas and a supportive environment, they often shift to a more creative and proactive stance. As one advisor observed, "We've got students that come in thinking they don't really have a voice, and by the time they leave, they found it." An NPS-adjacent startup accelerator could enable this personal transformation by immersing students in innovation activities from the start of their educational experience at NPS. A byproduct of such engagement is an increase in students' innovation confidence, an outcome not easily measured, but very relevant to NPS's educational mission of developing innovative military leaders.

That said, cautionary perspectives were present as well. Concerns about conflicts of interest, divided loyalties, or legal pitfalls arose in almost every conversation with DoW officials. No one argued flat-out against student involvement; instead, they emphasized it must be structured and transparent. For instance, an NPS legal advisor recommended early consultation with counsel and was already brainstorming how to make this concept "make sense to NPS, especially with active-duty students involved." These concerns appropriated the need to obtain official legal guidance (the memorandum described in Finding 6) and to build in robust guardrails.

In summary, the findings affirm that stakeholders see NPS students as a critical innovation resource, capable of scouting emerging tech, providing military context to developers, and championing solutions within DoW, but only if a solid framework manages the practical and ethical issues. There is enthusiastic support to harness students' talents as long as rules are clear. The accelerator model, with a defined process and formal approvals, garnered support as a way to do this responsibly rather than on an ad hoc basis. This broad buy-in gave the green light to make student participation a pillar of the program design. Stakeholders essentially said: "Yes, involve the students – just do it the right way."

E. KEY DESIGN FEATURES FOR AN ACCELERATOR

Our interviews effectively co-created a wish list of design features that would make an NPS-adjacent startup accelerator successful. These features surfaced repeatedly in stakeholder comments and align with best practices noted in innovation literature and other accelerator programs. Below, the key features and how they can be incorporated are highlighted:

1. Gap/Need-Driven Selection

Many interviewees emphasized that an accelerator should start with problems to be solved, not tech for tech's sake. Several leaders stressed the importance of working from a "unified enterprise gap list" and doing hard down-selects early so that efforts focus on true needs. In practice, this means an accelerator could require each startup applicant to have a DoW sponsor who can articulate a real problem or gap from day one. This idea was echoed by others who noted that hackathons and pitch events work best when they're about finding teammates for a mission, not just pitching any idea in a vacuum. One ecosystem participant remarked that in effective hackathons "you pitch to find teammates, not just to present an idea." By being gap-driven in selection, alignment with genuine DoW needs from the outset is ensured.

2. Early "Sherpa" Guidance on Acquisition

There was universal agreement that startups (and student innovators) need early help navigating DoW processes. As one bluntly put it, "Unless you understand the current acquisition story... I'm not interested." A concrete suggestion that emerged was to run acquisition workshops for participants, covering basics like the FAR vs. OTAs, how requirements and budgets work, etc. A series of mini-workshops have been accordingly built into the accelerator curriculum (e.g., "Acquisition 101 for Innovators"). Additionally, the idea of having an assigned "Acquisition Sherpa" for each team came up repeatedly. This would be a guide (perhaps a retired Program Manager or contracting officer) to help each startup tailor their strategy, for example, deciding whether to pursue an SBIR contract, an OTA prototype, a Rapid Innovation Fund, or other pathway. Its suggested to staff the accelerator with at least one senior acquisition professional in residence to provide this one-on-one guidance. The aim is to demystify the bureaucracy early so that teams can chart a viable route forward.

At the same time, several interviewees pointed out that the acquisition landscape itself is about to enter a period of rapid and possibly destabilizing reform, something that both expands opportunity and increases the need for expert guidance. The Secretary of War's recent directive to redesignate the Defense Acquisition System as the Warfighting Acquisition System explicitly calls for sweeping changes by slashing layers of review, reducing FAR/DFARS constraints to only what is "absolutely vital," digitizing milestone and gate reviews, and empowering program leaders to "cut through unnecessary layers" in pursuit of speed (Department of War, 2025). While these reforms are meant to accelerate capability delivery, they will also create churn as authorities will shift, rules will be rewritten, and organizations will need time to interpret and implement new guidance. In this environment, early-stage innovators are likely to face more, not fewer, questions about which pathways apply, what documentation is still required, and which offices now hold decision authority. Paradoxically, the very reforms designed to speed adoption heighten the value of an "acquisition Sherpa" during the transition period. If anything, the coming flux reinforces the need for dedicated mentors who can help teams navigate shifting policies, identify the agile pathways with real traction, and avoid missteps as the system recalibrates. In short, acquisition reform expands opportunity space, but it also increases the cost of operating without a guide.

3. Tech Scouting and Due Diligence

Multiple stakeholders urged that the accelerator perform rigorous vetting of both the technology and the founding team before and during the program. An NPS advisor even provided an evaluation rubric they use, technology readiness, team strength, producibility (i.e., can it be made at scale), and operational alignment. This will formalize these criteria in the selection and assessment process. Moreover, a program manager described a novel approach he uses, employing an AI tool to scan patents, budgets, and news to avoid duplication and to see if the idea truly hasn't been done before. He essentially set up an automated due diligence "scrub" to vet ideas. While an AI tool might not be deployed immediately, its suggested to include deep market and prior-art research by an NPS-adjacent startup accelerator. Students can help with that research. This rigorous scouting and due diligence phase will raise the quality of cohort projects.

4. Cohort Structure and Pace

Stakeholders thought an NPS-adjacent startup accelerator should be time-bound and intensive. Interviewees found this reasonable, long enough to get meaningful work done, but short enough to create urgency and momentum. There was aversion to multi-phase programs with long gaps in between (this sentiment is paraphrased as "no multi-phase drag"), because startups can lose steam if there's too much downtime. Instead, a single-stage cohort that goes straight from kickoff to prototype demo was favored. This feedback aligns with the standard commercial accelerator model (typically ~12 weeks).

5. Access to NPS Labs andResources

One advantage many interviewees highlighted is NPS's physical and intellectual resources. For example, specialized labs (for unmanned systems, cyber, additive manufacturing, etc.), unique test events like JIFX (Joint Interagency Field Experimentation), and a faculty full of domain experts. A strong recommendation was to explicitly offer technical validation opportunities at NPS as part of an NPS-adjacent startup accelerator. For instance, if a company in a cohort has a new radio technology, a test could be arranged in the NPS wireless communications lab or be integrated into a student thesis experiment. A plan to leverage CRADAs may be a vehicle for this, since a CRADA allows an outside company to collaborate with NPS labs and faculty. NPS has used CRADAs to pair students and companies in research projects in the past via other means (Mena-Werth, 2023). By tying cohort projects into NPS research efforts, both sides win. Companies get credible testing and feedback, and students/faculty get cutting-edge projects to work on. A roundtable discussion even suggested creating a formal "Naval Innovation Exchange" (NIX) program for students, akin to how faculty have research exchanges. In many ways, the accelerator can serve that function, a hub where student ideas, faculty expertise, and external tech solutions convene to tackle Navy problems. As one NPS professor noted, many good ideas invented at NPS "sit unused on a shelf without a sponsor" when they stay in a silo; it's only when you "bring the fleet, sponsors and industry into the mix that good ideas gain traction to transition" (Mena-Werth, 2023). the accelerator aims to bring those sponsors and industry partners into the mix for student-driven innovations.

6. Mentorship and Partner Network

All successful accelerators thrive on a robust mentorship network, and ours will be no different. Interviewees urged to tap into not just NPS faculty, but also the extensive NPS alumni community and nearby defense expertise. For example, Monterey is home to the Naval Warfare Studies Institute (which connects NPS to Navy fleets) and has many retired senior officers and defense professionals in the area. Notable figures at the NPS Foundation frequently came up which is known as a super-connector between NPS and industry. Interaction with the NPS Foundation was heavily involved, indeed, the program design envisions the Foundation helping to host events and encourage corporate sponsorships, given its role as a conduit between NPS and the private sector. Alumni mentors (many NPS graduates now serve in acquisition commands or tech companies) will also be solicited to advise cohort teams. In short, an NPS-adjacent startup accelerator could actively cultivate a "mentor bench" of advisors spanning military, academic, and industry backgrounds.

7. Faculty Involvement

A recurring theme was to involve NPS faculty as principal investigators or advisors on accelerator projects, both for oversight and to embed projects in the school's research ecosystem. Faculty buy-in is crucial; however, as noted earlier, faculty are busy and typically need some support or incentive to engage beyond their normal duties. the design addresses this by providing modest funding for faculty involvement (e.g., a small research stipend or funds for student travel and prototype materials) and by formally assigning faculty advisors to each project where possible. This way, faculty can potentially integrate the startup project with their own research or use it as a student thesis topic, which aligns with their incentives. The benefit is twofold as students get close mentorship and academic rigor, and faculty stay connected to real-world applications. Providing even a token budget or recognition for faculty contributions, the concern that time should be exchanged for value is answered.

8. Hackathons, Pitch Days, and Team Formation

Before companies even enter a cohort, some interviewees suggested holding ideation and matchmaking events at NPS to "feed the funnel" of an NPS-adjacent startup accelerator. For example, hackathons where NPS students pitch ideas and form teams with industry participants, or an initial "pitch day" competition where startups apply by pitching their concept to a panel and winners get into the accelerator. In fact, during the research one speaker noted that hackathons are useful to curate teams, not just ideas: "This is what they do at hackathons, pitch to find teammates, not just to present an idea." Taking this to heart, an annual pitch/selection event for the accelerator is planned, and is encouraged that each cohort kicks off with a team-building workshop. In that workshop, interested students can meet the selected startups and find a project that resonates with them, effectively pairing students to company teams based on mutual interest. These front-end events not only help select the best ideas but also generate excitement and multidisciplinary teams around them. This approach reflects external best practices as well, many defense innovation programs (e.g., AFWERX challenges) use pitch competitions to identify top candidates and to spur networking among innovators.

9. Metrics and Outcome Focus

Nearly every stakeholder emphasized that an accelerator must be outcome-focused and measure success by concrete results, not just by the number of events or participants. In other words, it's not enough to say "we ran an accelerator and everyone learned a lot," it needs to be tracked how many prototypes actually transition to the field or receive follow-on funding. One SOCOM representative put it bluntly: "Can we transition this to real resourcing? ... Lethality is not an abstraction." He meant that unless a project leads to a funded program or a deployed capability that improves warfighting (i.e., actual lethality or readiness), the effort doesn't count for much. This set the tone for the approach; all efforts should orient toward crossing that finish line of adoption. Specifically, its suggested to measure metrics like time to first contract (how quickly after the accelerator a startup secures a DoW contract), the number of follow-on contracts or funding awards, and the number of technologies that get adopted by units or Programs of Record. These metrics focus on transition outcomes. This emphasis is reinforced by outside studies. For example, the Defense Innovation Board has criticized that too many DoW prototyping efforts never reach scale or transition into Programs of Record (Defense Innovation Board, 2023). Likewise, think-tank analyses have recommended tracking speed of engagement and transition rates as key performance indicators for defense innovation units (Potomac Institute for Policy Studies, 2024). In short, the success of an NPS-adjacent startup accelerator would ultimately be judged by how many "valley of death" crossings it facilitates.

Each of these design features emerged from the findings and has been built into the accelerator program design. What's remarkable is how aligned the different voices were on what "good" looks like, indicating a common understanding of the current deficiencies and of the ideal program to address them. Essentially, the interviewees handed over a checklist for success: make it gap-driven, educate everyone on how the system works, vet ideas thoroughly, involve the right people (mentors, faculty, sponsors), leverage NPS's unique resources, and above all measure real outcomes. the accelerator model was crafted directly from this checklist.

F. LEGAL PATHWAY FOR STUDENT STARTUP ENGAGEMENT

One of the most consequential findings is the confirmation and clarification of a legal pathway that allows NPS students to engage in outside work with defense startups. Early on, legal ambiguity loomed as a potential show-stopper, that without explicit approval, having active-duty officers assist private companies (even for defense innovation) could violate ethics regulations. Through collaboration with NPS's Office of Counsel, a memorandum was signed (Outside Employment Policy, dated 20 November 2025) which formally acknowledges that active-duty students may undertake outside employment (including consulting for tech companies) under strict conditions, with proper approval. This memorandum is important for establishing the presumption that students may participate in approved activities related to an NPS-adjacent startup accelerator in a transparent, command-approved way.

1. Outside Employment Policy Memorandum

Key points from the memorandum (see Appendix A for full text) that frame how the accelerator will operate include:

a. Prior Approval Required

Students must obtain written approval from their chain of command and an ethics counselor before beginning any outside work with any entity related to an NPS-adjacent startup accelerator. NPS Dean of Students and Staff Judge Advocate (SJA) will supervise a standardized request form and routing procedure to secure the necessary permissions for nps students to engage with an outside entity before any activity starts. There will be no "rogue" participation on the side; everything will be documented and permissioned via the student's commanding officer. This ensures all stakeholders (academic and military) are in the loop from the outset.

b. No Conflict with Duties or Academics

The memorandum emphasizes that any outside employment cannot conflict with the student's official military duties, academic requirements, or broader mission needs. For an NPS-adjacent startup accelerator, this translates to careful scheduling and workload management. Any work with outside entities must occur on personal/off-duty time (e.g., evenings or weekends), and NPS may place a cap on the number of hours per week a student can engage with a startup project during AN academic quarter. faculty advisors and military supervisors will need to confirm that the student remains in good academic standing and isn't falling behind in coursework. Essentially, the student's primary job remains their NPS education; any startup-related work is a secondary, voluntary activity. The memorandum gives commanders the right to revoke approval if the outside work starts to interfere with a student's duties or performance, so NPS can be proactive in preventing any such conflicts.

c. Ethics and Integrity Guardrails

The memorandum lays out clear ethical guardrails. Students are prohibited from misusing their official position or any government resources to benefit the private company, and they cannot disclose any non-public government information to that company. They also must recuse themselves from any official matters that might affect their private employer. In practice, this means, for example, if a student's thesis research or NPS duty involves evaluating technologies that include their startup's product, measures would be implemented to avoid any bias, perhaps assigning a different student or faculty to evaluate that portion, or having the student recuse from official assessments. NPS legal advisors will need to monitor and enforce these ethics rules. The goal is to protect both the student and NPS from any perception of favoritism or conflict of interest. The memorandum essentially allows this arrangement only under strict ethical compliance.

d. IP and Data Considerations

Intellectual property (IP) is a tricky area when students work with outside entities, and the memorandum addresses this. It clarifies that any IP created under outside work is still subject to standard government and university rules. For example, if an invention is made on government time or using government facilities, it may be considered government property or at least involve government usage rights, students can't just give away Navy-funded innovations to a private startup. Conversely, if it's on personal time with company resources, it might belong to the company but could still implicate a student's obligations. The memorandum encourages students to have any NDAs or invention agreements reviewed by the NPS Counsel to avoid IP conflicts. It is recognized this is critical: NPS does not want to inadvertently lose rights to something due to a student's side work, nor do it want a student entangled in an IP dispute. NPS's Technology Transfer Office must ensure that any project with potential IP generation goes through a CRADA or similar agreement that clearly delineates who owns what and what usage rights the DoW retains. (As noted in the literature review, CRADA agreements can be crafted to give the government a license or right of first refusal on resulting IP; this protects DoW interests while still being fair to the companies.)

e. Oversight Mechanisms

The memorandum makes clear that NPS and the Services will provide ongoing oversight. This means ethics counseling is available, and NPS will coordinate with the student's parent service (Navy, Army, etc.) as needed to ensure all are informed. The very existence of this memorandum indicates institutional buy-in, effectively NPS is saying, "We acknowledge students can do this, as long as they play by the rules, and we'll help guide them." To operationalize this, one of the early implementation tasks is to create a Standard Operating Procedure (SOP) for student participation. That SOP will translate the memo's guidance into step-by-step processes (e.g., how to request approval, templates for command letters, max hours per week, periodic progress reporting to ensure no issues, etc.). By making the process routine and standardized, the burden on individual students and companies is reduced and reassure commanders that this is handled properly every time.

The process of obtaining this memorandum, and fully understanding its contents, was a turning point in the project. Initially, even some enthusiastic interviewees were skeptical that active-duty officers could ever receive something like equity or pay from a private company while on duty. Now there is a path (albeit with conditions): yes, they can, if approved and within guidelines. For example, a student might serve as a technical advisor to a startup during the accelerator, and with approval, the startup could legally compensate them with a small stipend or even a stock equity grant. The student would perform this work on personal time and must never imply any Navy endorsement of the company. The memorandum even provides contact points (e.g., the Staff Judge Advocate's office and the Dean of Students) for any questions that arise, the legal offices plan to brief each cohort at the start so that everyone understands the dos and don'ts from day one in addition to new groups of students arriving at NPS each quarter.

Here we confirm feasibility, NPS students can legally be part of startup teams, removing what was arguably the biggest barrier to the accelerator concept. It also highlights the conditions for success, namely, rigorous processes and oversight to adhere to the established rules. This finding moves from a theoretical idea ("wouldn't it be great if students could work with startups?") to an actionable plan ("here's exactly how we can do it, step by step, with legal sign-off at each step"). In essence, what could have been a show-stopper has been transformed into a well-regulated enabler for the program.

G. LEVERAGING ACQUISITION PATHWAYS: CRADA, OTA, AND "SHERPA" LINKAGES

Another set of findings centers on how an accelerator can tangibly speed up the journey from concept to fielded capability by cleverly leveraging existing DoW acquisition pathways. The data covers several critical linkages in this "last mile" transition process:

1. CRADA as the Starting Bridge

As noted earlier, experts saw CRADAs as a logical first formal mechanism to connect NPS with a startup. One interviewee described it in precisely those terms: "By being in relationship with NPS, we have given them the on-ramp across the valley of death." In other words, the very act of entering a CRADA with NPS provides a young company with some credibility and a working connection to a DoW entity. It's a low-risk, non-contractual agreement, but it establishes that the Navy is interested enough to collaborate. Once a company has a CRADA, it can advertise that partnership and potentially find it easier to secure an OTA contract or other government funding, because they've shown they have a foot in the door. NPS administrators explained that CRADAs can often be executed relatively quickly (on the order of weeks) especially if templated. The finding is that CRADA approval can be streamlined internally by preparing a template CRADA for accelerator projects and lining up points of contact in the NPS Research Office to expedite processing. It was also learned that CRADAs can include clauses helpful for transition, such as giving DoW a right of first refusal or a non-exclusive license to any resulting IP (ensuring the Navy can use what comes out of the collaboration). Leveraging CRADAs as a first step anchors a project in a formal NPS-company relationship, which may be a helpful "bridge" across the valley of death.

2. "CRADA → OTA → Production" Pipeline Confirmed

The interviews provided real-world validation of a specific pipeline that had been hypothesized; start with a CRADA for R&D collaboration, then move to an OTA for prototyping, and finally transition to a production contract or program of record if successful. Several NPS advisors independently mentioned this sequence as the ideal path. Likewise, in the SOCOM context, it was discussed that using OTAs and even Middle-Tier Acquisition (Section 804) as agility tools to get capabilities quickly. This finding solidified the program strategy to aim every cohort project toward an OTA prototype contract as a primary outcome. To facilitate that, an accelerator may network closely with the organizations that frequently issue OTAs, for example, the Defense Innovation Unit (DIU), service rapid capabilities offices, AFWERX's AFVentures, SpaceWERX, Army Applications Lab, and various OTA consortia (like NSTXL or ATI). Its recognized that having a willing DoW sponsor with some budget is key to getting an OTA award. Therefore, one selection criteria (as mentioned earlier) may be for each project gets a DoW sponsor office from the start. Those potential sponsors (e.g., program managers or requirements owners) may be invited to accelerator Demo Days with the express goal of pitching them on awarding an OTA for further development. In short, a CRADA→OTA handoff may be a key function of an accelerator.

3. Other Fast-Track Vehicles

While OTAs are a centerpiece, the findings served as a reminder to not ignore other fast-track contracting mechanisms. For example, NavalX and Marine Corps innovation units have effectively used prize challenges (authorized under 10 U.S.C. §4025) to fund prototypes in a matter of weeks. The Army's xTechSearch is another example of a prize competition that provides non-dilutive funding to winners and has been successful in drawing out new tech. One interviewee in the roundtable raised a caution about startups taking foreign venture capital, "You will never work with the U.S. government if you take this investment," and noted that sometimes prize money or DoW seed funds can incentivize companies to avoid problematic funding sources. It is planned for each accelerator cohort to have at least one opportunity to plug into such mechanisms. For instance, a special topic SBIR solicitation might be coordinated or help cohort companies apply to existing open-topic SBIR/STTR programs (which can lead to Direct to Phase II or Fast Track awards). Additionally, if new authorities emerge (one interviewee mentioned a pilot program for recurring production OT awards being considered in legislation), its suggested to stay flexible to potentially incorporate those. The Atlantic Council's recent Commission on Defense Innovation Adoption specifically recommended creating new pathways for mission-critical technologies and strengthening alignment of private capital with defense needs (McNamara et al., 2024). In line with that, the accelerator's affiliated venture fund (through the NPS Foundation) is envisioned to co-invest alongside any government awards, ensuring startups have the matching capital to scale if they win a prototype contract. In essence, we'll use every tool in the toolbox (OTAs, SBIRs, prizes, pilot contracts) to give cohort companies a fast track to real-world testing and procurement.

A less formal but absolutely crucial pathway is the human guide, what is called the "acquisition sherpa." the findings show that navigating the bureaucracy requires personal guidance just as much as it requires contract mechanisms. One interviewee illustrated this when he described how he personally engages early with testing, manufacturing, and certification stakeholders on his projects. Similarly, one of the NPS interviewees highlighted a particular NPS legal counsel who is effective because he's solution-focused rather than compliance-focused. The lesson is that rules and authorities alone don’t solve the problem; people who know how to work the system do. In the accelerator, that helper role will essentially be institutionalized. Each cohort company (and student team) will be assigned a lead mentor who is highly knowledgeable in defense acquisition and requirements. This could be, for example, a retired Program Executive Officer or a former DIU contracting official, someone who has “seen the movie before” and can anticipate pitfalls. Their job is to walk the team through the maze: help line up the right meetings, prepare necessary documents (like white papers or budget justifications), and ensure the team meets the right criteria for whatever pathway they’re pursuing. This “sherpa” concept was explicitly recommended in the interviews as a differentiator for an NPS-adjacent accelerator. Startups often get lost after winning an OTA or prototype contract because they don’t know how to turn it into a long-term win; sherpas will keep them on track, increasing the odds that a prototype doesn’t just sit on the shelf but actually transitions.

4. Linkages to Programs of Record

The ultimate goal for many defense tech projects is to enter a Program of Record or at least secure long-term funding to field the capability at scale. Several findings touched on this final step. Leaders focus on alignment with “real resourcing” (meaning budgeted programs) and innovations must plug into funded requirements eventually, or they won’t have impact. External reports echo this, the DIB has argued that scaling innovation requires bridging into programs and portfolios, not stopping at prototypes (Defense Innovation Board, 2023). Its planned for transition partners to be involved as early as possible. Each project will need to be connected to a Program of Record that could adopt the solution if proven. For example, if a cohort startup is developing a new drone system it needs to be connected to Navy or Marine Corps program offices responsible for unmanned systems (like a NAVAIR PMA or the Marine Corps Warfighting Lab) from the start. One stakeholder succinctly advised, “You want to have identified who the transition partner is and have them on board as early as possible.” End-users or program offices need to participate in initial problem-definition workshops and mid-term check-ins, not just the final demo. Additionally, accelerator participants need to be educated about the Planning, Programming, Budgeting & Execution (PPBE) process so they understand how a Program of Record gets funded and can align their timelines and expectations accordingly. The endgame is to avoid the common fate of a successful prototype that languishes without a budget line. Instead, startups should already be connected to a Program office by the time the prototype is proven.

5. Local/Regional Acquisition Support

It was discovered that NPS has some unique local assets that can be tapped into for quick wins. The Naval Warfare Studies Institute (NWSI) at NPS, for instance, often brokers agreements and projects with Navy operational units. They can help link cohort projects with fleet exercises or experimentation venues. Another asset is the Fleet/Force Experimentation (SFX) team in Monterey, which runs events where new technologies can be demonstrated in realistic scenarios (like the JIFX field exercises at Camp Roberts). the findings suggest that utilizing these "soft" transition pathways (experimentation events, tech demos, warfighter evaluations) can complement the formal contract pathways. For example, as part of the accelerator, slots could be secured for the cohort technologies in an upcoming JIFX experiment, giving startups an opportunity to get feedback directly from operators in the field within the three-to-four-month program window. Such experiences not only validate the tech but often create advocates among the warfighters, which can be pivotal for gaining program support. Its suggested to make these experiment and demonstration opportunities a regular feature of an accelerator cycle, essentially fast-tracking the "test and evaluation" piece that can otherwise delay adoption.

In essence, Finding 5 confirms that an accelerator's strength will lie in orchestrating a variety of existing authorities and processes into a coherent pipeline for innovation adoption. None of the individual pathways (CRADA, OTA, SBIR, prize challenge, etc.) are entirely new on their own; but there is value to sequencing them smartly and smoothing the handoffs. In providing guidance (the sherpas) and actively brokering connections (to sponsors, to experiment venues, to program offices), an accelerator can shorten what is normally a multi-year odyssey for startups. The interviews and analysis essentially provided a map of how to do this, drawn from those who have successfully navigated it or, conversely, been bogged down by it. It can be used to design the backbone of an accelerator operating model.

H. ECOSYSTEM CONNECTIVITY AND TRIAD

Finally, the findings highlight how an NPS-adjacent accelerator would function as a node in the broader defense innovation ecosystem, linking academia, industry, and the operational military in a tighter triad. Many data points illustrated the current silos between these communities and how an accelerator can help bridge them:

1. Academia ↔ Industry

Typically, academic research results in theses, papers, or prototypes that never go further, while startups often forge ahead without the benefit of academic insight, sometimes duplicating existing work or missing lessons learned. By inserting NPS students and faculty into startup projects (and vice versa, exposing startups to academic assessment), a two-way knowledge flow is created. One professor interviewed noted the opportunity for student-led due diligence teams, essentially using students (under faculty guidance) to evaluate the tech and business claims of companies for operational fit. This is mutually beneficial: students get a hands-on crash course in emerging tech and defense needs, and startups get a structured analysis (kind of like a free consulting team) that can highlight gaps or opportunities they missed. These "tiger teams" of students could be a regular activity in an accelerator. Each cohort startup might have a small team of defense management, systems engineering, and defense analysis students assigned to research its technology, competitors, and potential military integration issues, producing a brief for the startup and its DoW sponsors. This kind of academic-industry collaboration is rarely done in other accelerators, an could be a distinctive aspect of an NPS-adjacent accelerator. It leverages the fact that NPS students are all active-duty officers with recent field experience, they can provide highly relevant feedback to a company about whether a solution would work for troops. In turn, students learn by doing, which aligns with modern experiential learning models, as recently outlined in the 2025 DoW Acquisition Transformation Strategy. In innovation theory, this reflects the principle of the "triple helix" model (university, industry, and government collaboration) where academic institutions act as innovation intermediaries (Etzkowitz & Leydesdorff, 2000).

2. NPS Foundation & External Partners

The NPS Foundation (a non-profit that supports NPS) was frequently mentioned as a facilitator for industry relationships and an enabler outside the normal Navy channels. the findings suggest leveraging the Foundation's convening power and flexibility. For example, the Foundation can host networking events off-campus that bring together students, startups, and venture capital, something the Navy itself might be restricted in doing. The Foundation might also help raise philanthropic funds or manage a venture capital fund to provide seed investments to accelerator companies.

Precedents for this were found as other service academies and schools have affiliated foundations or endowments that drive innovation initiatives. The Air Force Academy, for instance, has the USAFA Endowment supporting its "Design and Innovation" programs, and the Army has the West Point Association of Graduates doing similar things. The Atlantic Council's Commission on defense innovation adoption specifically recommended aligning private capital with defense innovation and creating new pathways for funding dual-use tech (McNamara et al., 2024). By involving the NPS Foundation and potentially its donor network, that recommendation is integrated, acting as a bridge to Silicon Valley and the venture community. In short, one linkage is NPS (with Navy constraints) ↔ NPS Foundation (more agile, can interface with industry and investors freely) ↔ private sector. An NPS-adjacent accelerator may be positioned to make full use of that linkage, letting each side do what it does best, the Navy side provides problem pull and technical validation, while the Foundation side provides resource flexibility and partnership building.

3. DoW Sponsors and Requirements Community

A clear call from stakeholders was to integrate end-users and requirements owners early and consistently. One interviewee asked pointedly, "Is it NSW (Naval Special Warfare)? Is it one of the PEOs? You need to know where it's going to land." This encapsulates that it must be identified which command or program will ultimately "catch" the innovation. Ideally every project would be matched with a DoW sponsor from the start. These sponsors might be warfighting units, program offices, or cross-service task forces, whoever has a problem and some authority to act on a solution. The findings showed that these sponsors are often very willing to engage; many commands have innovation cells or capability gaps they're desperate to fill, but they lack the bandwidth to scout widely. An accelerator effectively serves them by doing the front-end scouting and vetting, then presenting them with a couple of curated, relevant solutions. There have already been anecdotal indications of interest from certain commands (for example, officers from Indo-PACOM and Marine Corps Warfighting Lab have informally expressed that they would watch the cohort outputs with interest). Maintaining constant connectivity (inviting sponsors to mentor, having them attend mid-term demos, soliciting their feedback for pivots) ensures that by the time of final demo day, these stakeholders feel ownership and are ready to champion the solutions. This tight DoW linkage not only increases transition odds but also serves as a reality check throughout the accelerator, teams can't go too far off in a direction that a sponsor doesn't care about, because the sponsor is in the loop the whole time. In effect, an accelerator becomes a mechanism for continuous, structured interaction among operators, technologists, and researchers, what Lundvall (1985) identifies as the core dynamic that drives successful innovation systems: dense user–producer relationships that accelerate learning, reduce friction, and align technology with real needs.

4. Industry Engagement

The ecosystems that are connecting are not just NPS and DoW, it also includes the defense industry (both startups and traditional primes) and the investment community that fuels startups. While not the primary focus of this thesis, the findings did touch on the importance of aligning capital with these innovations. The Atlantic Council commission, for example, recommended strengthening capital market programs for defense tech (McNamara et al., 2024). In context, this means engaging venture capital early in the accelerator process. plan to invite defense-focused venture investors to attend cohort demo days and even to mentor or advise teams if they're interested. One venture interviewee noted that DoW's interest acts as a powerful signal to other investors, if the accelerator can show that a solution has real DoW traction (e.g., a committed military sponsor or a pending contract), then private investors are more likely to put in money because they see a path to revenue. Thus, an NPS-adjacent accelerator can serve as a translator between DoW needs and venture validation, de-risking these startups in the eyes of the military and for the capital they'll need to scale. even envision the possibility of coordinating with big defense primes on certain projects. For instance, if a startup's tech would ultimately need a large integrator to field it (say a new sensor that could go on a Boeing aircraft), might invite that prime contractor's innovation scout to observe early. The goal is not to hand the innovation off to a prime prematurely, but to ensure the startup is aware of integration challenges and that primes are aware of the startup (perhaps paving the way for partnerships or acquisitions that can speed scaling). ecosystem linkages include those to the private sector funding and industrial base, bridging the infamous gap between a garage startup and the defense industrial complex.

5. Active Duty and Entrepreneurs

Beyond processes and formal roles, there is a cultural gulf to bridge between military officers and civilian entrepreneurs. The findings suggest that putting these groups together in teams helps break stereotypes and fosters mutual learning. It was noted how NPS students initially can be hesitant in an academic setting (nobody wants to raise their hand and say the wrong thing in front of peers), but given time and the right environment, they become much more open and creative. An accelerator, which operates in a more informal, first-name, "startup" culture manner, can accelerate that change in mindset. On the flip side, tech entrepreneurs often have misconceptions about the military or find the bureaucracy baffling. By working closely with officers, they start to appreciate the end-user perspective and the seriousness of national security problems (versus, say, the next photo-sharing app). One industry interviewee (a tech hub director) observed that external innovation programs, such as those at civilian universities or AFWERX, tend to do a better job from day one in creating cross-functional teams and a culture of open ideation than traditional military settings. intend to borrow from those playbooks: cohorts will mix people from different backgrounds (it might be the first time a Navy lieutenant, a Stanford MBA, and a Silicon Valley engineer are all on a Zoom call solving a problem together). From a cultural standpoint, this is transformative. It humanizes the military to the innovators and vice versa. Several students in the roundtable noted that after working with civilians, they gained confidence in speaking up and realized innovation thrives on colliding perspectives rather than strict hierarchies. This cultural bridging might be harder to measure in real time, but it is anticipated that it will yield long-term benefits as those officers return to the fleet with a more entrepreneurial mindset, and those entrepreneurs continue to collaborate with the military with clearer understanding. The outcomes can be measured instead.

6. Ecosystem Mapping

During the research, the players and resources were mapped out in the Monterey-Bay Area defense innovation ecosystem. The finding is that while Monterey's local ecosystem is smaller than, say, Silicon Valley's, it is not isolated. NPS sits at a junction: it's connected to the Navy and Marine Corps organizations on the West Coast (via NavalX's Tech Bridge, Fleet experimentation units, etc.), and it's only an hour's drive from the broader Silicon Valley startup-investor network. The accelerator is viewed as a hub that connects outward to all these nodes. For example, if a cohort project needs specialized support from Stanford's AI lab or UC Berkeley's robotics group, NPS' academic network can reach out. If a project could benefit from the Air Force's innovation hub in Los Angeles or SOCOM's SOFWERX in Tampa, it can facilitate those introductions (indeed, the interview with a senior officer opened a door to SOCOM's network). Mapping this triad visually, NPS is in the center linking to DoW and Industry on either side, with arrows looping all around; a classic triple helix of innovation. The idea is that accelerator doesn't operate in a vacuum; it actively shuttles information and opportunities between these communities year-round. For instance, students (through their theses or capstones) bring forward operational problems and share them with industry participants; industry brings new tech for students and faculty to experiment with; and NPS translates and curates these into concepts that DoW stakeholders can act upon. Each side benefits as DoW gets solutions more rapidly and with less scouting burden; industry gets clarity on real needs and access to military users; students and faculty get to work on live problems with real-world impact. This triadic collaboration is exactly what innovation theorists describe as essential for robust innovation ecosystems (Etzkowitz & Leydesdorff, 2000).

This finding portrays the accelerator as the "bridging node" in the defense innovation network, connecting academic ingenuity, private-sector technology, and military operational demand. This position mirrors the foundational finding that the most valuable actors in an innovation network are those who span structural holes, serve as brokers of information, and enable learning between otherwise disconnected communities, exactly the role an accelerator can fill between NPS, industry, and DoW stakeholders (Burt, 2001). The value of an accelerator is not only in the success of individual projects, but also in the enduring relationships and communication channels it establishes among stakeholders who otherwise often operate in parallel lanes. This resonates strongly with the core argument that NPS and its students can serve as a linking mechanism if given an organizational construct (the accelerator) to do so. It also informs how an accelerator might operate going forward: beyond running cohort cycles, an accelerator will host networking mixers, publish problem statements to the wider community, and share lessons learned with other innovation entities. In doing so, it acts as place for a year-round hub of connectivity, not just a one-off program, strengthening the overall ecosystem. This approach embodies the collaborative, triple-helix model of innovation where government, academia, and industry are in constant interplay (Etzkowitz & Leydesdorff, 2000).

With these findings, there is a clear picture of both what needs to be done and how to do it. Collectively, the findings validate an accelerator concept and provide a blueprint shaped by on-the-ground insights. The next chapter will discuss these results in a broader context, examining their implications for defense innovation theory and practice, potential risks and limitations, and how success will be measured.

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V. DISCUSSION

The findings presented have strong implications for how the defense innovation ecosystem can be enhanced by an NPS-adjacent accelerator. In this chapter, those results are interpreted in a broader context, examining how the proposed solution fits into and augments the existing ecosystem, and addresses potential challenges (with mitigations) in implementing the model. The human capital dimension is explored in depth, how leveraging NPS students can be a force multiplier, and an outline of the plan to measure impact, particularly on the critical metric of time-to-field for new technologies is discussed. Finally, governance considerations are considered, ensuring that the accelerator's operation remains ethical, effective, and aligned with stakeholder interests.

A. ANTICIPATED BENEFITS

Establishing a third-party accelerator at NPS would generate benefits across several dimensions of defense innovation, from developing future leaders to accelerating the movement of promising technologies into operational use. The most significant benefits are outlined below.

1. Human Capital Development for DoW

A foremost benefit of integrating a third-party accelerator at NPS is cultivating a cadre of innovation-savvy military officers. Participants gain hands-on experience in technology development, entrepreneurship, and agile problem-solving beyond what traditional staff tours provide. Over time, this experiential learning produces future leaders who think creatively and can interface effectively with the tech sector. This aligns with guidance from the Chairman of the Joint Chiefs of Staff emphasizing the need for more experiential learning in professional military education to spur innovation (Anderson & Price, 2024). In practical terms, an officer who has helped a startup navigate from concept to a fielded prototype will learn how to cut through bureaucratic red tape and can bring that tacit knowledge back to the fleet. Such officers become internal change agents, mentoring others in innovation and even standing up new innovation units or policy reforms. For example, alumni of the program could advocate within their service for better technology adoption pathways, citing their firsthand success. The program may also help retain high-potential innovators in uniform who might otherwise feel stifled and leave the military; given a purposeful innovation role, they could choose to continue service. As one interviewee noted, organizations must "breed people internally who have the confidence to play by a different set of rules" to drive innovation, an accelerator can be a breeding ground for those intrapreneurs (Newell, 2019). A concrete metric might be the number of NPS graduates who, after going through the accelerator, move into follow-on innovation or acquisition billets. If a significant proportion do so, it indicates the accelerator is contributing to a pipeline of innovation-minded officers. In effect, an accelerator serves as a leadership development program for innovation specialists, complementing existing career tracks. This addresses the cultural challenge in defense organizations of empowering internal innovators who can challenge status quo processes (Blank & Newell, 2017). The notion is echoed by Newell's experience with the Army's Rapid Equipping Force, building internal champions with the savvy to navigate around bureaucracy is key to innovation. An NPS-adjacent startup accelerator would intentionally cultivate these champions, directly tackling the oft-cited need to "play by a different set of rules" to deliver new capabilities.

2. Accelerated Transition of Technologies

The accelerator's direct output will be a set of defense-relevant technologies moving faster through development and into the hands of users than they otherwise would have. By design, each cohort's projects target a real DoW capability gap with an identified military sponsor, which vastly improves odds of transition. The expectation is that within the program's three–four-month cycle, startups will progress from roughly Technology Readiness Level (TRL) 3–4 (proof of concept) to TRL 6–7 (prototype demonstrated in an operational environment). Thanks to early sponsor involvement and use of NPS's partnership mechanisms and fast-track contracting, some solutions may secure pilot contracts or field tests by the end of the program or shortly after. This could represent a dramatic shortening of the typical defense acquisition timeline, which often takes years. For example, an accelerator's business plan could set a goal of cohort companies securing initial deployment or production contracts within 12–18 months of program completion. Compared to the current norm of four plus years to get new tech on contract, it is often so slow that the technology's window of relevance closes. This would be a huge improvement. One anticipated outcome is that each cohort could yield "multiple SBIR awards, at least one CRADA per company, and initial production contracts within 12–18 months." Achieving these metrics would directly answer calls by the DIB and others for faster tech adoption; for instance, measuring the time from prototype to operational deployment has been suggested as a key metric of innovation success (Defense Innovation Board, 2023). Recent high-level studies stress that rapid innovation means little unless the Department of War can adopt and field the new technology at pace. In other words, speed of adoption is now seen as a competitive advantage (McNamara et al., 2024). By demonstrating transition successes on the order of months rather than years, an NPS-adjacent startup accelerator would help DoW "bridge the valley of death" that so many defense innovations fall into. If cohort companies regularly transition into Programs of Record or are acquired by defense primes for integration, it will be evidence that the accelerator is effectively closing that gap. Even small wins will matter. For example, perhaps a cohort develops a novel counter-drone technology that, while not fielded as a standalone program, gets inserted as a subsystem into an existing Navy UAS program within a year. That still counts as a faster infusion of capability to the warfighter. Over a 3–5-year horizon, if the accelerator can shepherd a significant fraction of its projects into real use (say 30–50% transitioning to a fielded system or follow-on funding), it would far outstrip historical transition rates (traditionally only a single-digit percentage of defense tech prototypes ever transition to programs). Achieving this kind of transition success would validate an accelerator model as a solution to the longstanding adoption problem in defense innovation.

3. Enhanced Ecosystem Connectivity and Efficiency

By acting as a hub linking various stakeholders, an accelerator can greatly improve connectivity in the defense innovation ecosystem and reduce duplication or misalignment. One issue highlighted in the research was that many small companies simply don't know where to engage with DoW, and existing innovation offices often serve only as passive "interfaces" with limited ability to actively guide projects beyond pointing them in a direction. An accelerator addresses this by serving as a hands-on navigator for companies: a one-stop conduit to connect a startup with the right problem sponsors, contract mechanisms, test resources, and advisors. Over time, this could become a go-to entry point for any non-traditional company or academic team with a great defense-relevant idea to get plugged into DoW, as well as a scouting ground for any DoW unit seeking innovative solutions. This streamlining yields significant benefits; it can prevent good companies from giving up on the defense market out of frustration and conversely prevents DoW from wasting effort on companies that are not a good fit. An anecdote of a Marine Corps innovation challenge was noted that celebrated a solution only to later discover a nearly identical capability already existed elsewhere, unbeknownst to the organizers. With better network connectivity, of the sort the accelerator fosters by involving multiple services, industry, and academia, such misfires are less likely because information and solutions will be shared more fluidly across traditional boundaries. An accelerator can serve as an information broker and matchmaker in the innovation ecosystem, reducing the silos that currently plague defense innovation efforts (Gagnon & Van Remmen, 2018).

Moreover, an accelerator could generate a community or "alumni" network that becomes a lasting asset. Over the years, dozens of companies and officers who went through the program will form a trust network across industry and military. This social capital can translate into faster collaboration in the future. For example, an Army officer who built rapport with a startup founder during a cohort might later reach out to that person to solve an urgent problem in the field, bypassing the lengthy formal RFI/RFP process. Such benefits (strong cross-sector relationships and a common language for innovation) are exactly what organizations like DIU and the military services' tech hubs have been trying to create. An intensive accelerator experience bonds people in a way that pure contracting relationships do not.

Additionally, locating an accelerator adjacent to NPS in Monterey provides geographic diversification of the defense innovation base. It brings attention and activity to the Central Coast Tech Bridge region, potentially attracting investment and talent to work on defense problems there, which complements the main hubs like Silicon Valley, Austin, Boston, etc. If successful, this model could be expanded to other educational institutions or regions, it could serve as a template for others. One could envision, for example, an Air Force Institute of Technology (AFIT) accelerator and others, creating a network of regionally distributed innovation pipelines. NPS would be the pioneer proving the concept. In that scenario, each service's school could feed its innovation pipeline while all remain interconnected (much as the Tech Bridge network does), collectively knitting together a more agile national defense innovation ecosystem. The accelerator can serve as the connective tissue for a smarter and more efficient innovation ecosystem by linking people and ideas across the usual stovepipes.

4. NPS Institutional Benefits

Within the Naval Postgraduate School itself, partnering with a third-party accelerator stands to elevate the institution's profile and value to the Navy and DoW. It positions NPS not just as an academic campus, but as a true innovation campus. Tangible benefits for NPS include attracting high-caliber applicants, officers who might have otherwise pursued other educational opportunities may seek NPS specifically for the chance to work on cutting-edge innovation projects. It could also draw additional research funding and partnerships. Industry partners, seeing that NPS is actively producing applied solutions, might be more inclined to sponsor research, provide grant funding to labs, or participate in cooperative agreements. There's a potential for positive feedback into the academic side as well. Accelerator projects could spin off thesis topics, joint publications, or even new coursework in entrepreneurship and technology management. Over time, if the Navy values innovation experience in officers' career progression (as it has signaled in recent years), an NPS student's participation in the accelerator might be seen as a prestigious enhancement, such as a fellowship, noted in their service record. One could imagine a notation for completing an "innovation fellowship at NPS" becoming a sought-after mark for certain career paths (similar to how completing a tour in a cyber unit or graduating from a special program is viewed). This reinforces NPS's mission to "increase the combat effectiveness of the Navy and Marine Corps" by directly aligning education with real-world problem-solving and capability delivery.

NPS leadership has explicitly emphasized making the school a hub of innovation; the accelerator would be a flagship program fulfilling that vision (Naval Postgraduate School, 2023). In fact, the previous Secretary of the Navy, Carlos Del Toro, in directing the establishment of a Naval Innovation Center (NIC) at NPS, described NPS as a "go-to partner of the defense industrial base, the technology sector, and academia," essentially highlighting NPS's role as a tri-sector innovation nexus. An accelerator would be another mechanism to operationalization that concept that would complement the NIC initiative.

For NPS faculty, this initiative can also provide new opportunities. Serving as advisors or mentors in the accelerator, they can apply their research in a practical venue and potentially secure additional funding for their projects through accelerator partnerships. While some faculty might initially worry that an accelerator distracts from pure academics, in practice it can enrich the academic environment, more case studies, more student engagement, more chances for faculty to see their concepts implemented. These factors may increase faculty recruitment and retention at NPS, which benefits NPS.

Prior studies of university accelerators have found they can enhance the entrepreneurial ecosystem of a campus and positively impact student outcomes (Metcalf et al., 2021). In short, collaborating with a third-party accelerator can help NPS become a premier innovation hub and campus within DoW, strengthening its relevance and ensuring that the school remains at the forefront of defense-oriented education and research. This benefit extends beyond local prestige; it aligns NPS with Navy and DoW strategic goals. As one naval innovation report put it, defense institutions need to make innovation a core competency, not a side activity. An accelerator would make NPS a model for how to do that in the context of graduate military education.

5. Speed and Agility as a Competitive Advantage

At the broadest strategic level, the ultimate benefit of this accelerator is contributing to U.S. technological and military advantage by injecting greater speed and agility into the defense innovation cycle. In an era of great power competition, the side that can adapt and field new capabilities faster gains a significant edge. As DIU Director Doug Beck argued, the U.S. needs to "win the race of adaptation," if we cannot integrate emerging technologies at the pace of relevance, we risk losing the next conflict (Beck, 2024). An accelerator is fundamentally about increasing the speed of adoption, taking promising solutions from concept to deployed capability in months instead of years, and doing so iteratively with each cohort. If even a dozen new capabilities (even relatively small-scale ones) reach warfighters a couple of years sooner than they otherwise would have, that could have outsized effects on deterrence and combat readiness. For example, if one cohort produces a new counter-drone or cyber defense tool that fills a critical gap identified by an operational commander, and we field it in, say, 12 months instead of 5 years, that difference could protect forces and change an adversary's calculus.

A focus on dual-use technology also means many solutions will strengthen both the military and the commercial tech base. This may help bring to market technologies that benefit the civilian economy (e.g., new AI, energy, or robotics applications) while also giving the military first access, a win-win for national security and economic competitiveness. This aligns with the idea that national technological advantage comes from harnessing the entire innovation ecosystem (public and private) effectively (McNamara et al., 2024). By creating a pipeline that rapidly onboards commercial innovation into DoW programs, an NPS-adjacent accelerator can contribute to the U.S. staying ahead of rivals like China in the race to leverage emerging tech for military use. In the 2024 National Defense Strategy and the Atlantic Council's Innovation Adoption report, there is a clear call for speeding up the "adoption of cutting-edge technology" as a deterrence mechanism. An accelerator directly responds to that call. It embodies an operational mindset of "move fast and field things" that DoW is seeking, for instance, it parallels initiatives like the Navy's Project Overmatch or the Air Force's Replicator initiative, which aim to field swarms of autonomous systems on short timelines. If the accelerator can show a repeatable model for rapid tech fielding on a smaller scale, it can inform and complement those larger efforts. An accelerator's contribution to speed and agility isn't just about individual projects, it's demonstrating a new way of doing business that could be scaled. The broader benefit is a cultural shift: proving that adaptation cycles measured in months are possible in DoW. Even incremental improvements in cycle time can accumulate into a significant strategic advantage. As one senior leader interviewed put it, “We can’t afford to admire the problem anymore.” The time for studies and pilot programs has passed, we need to act with urgency. This accelerator is a concrete step toward that more action-oriented, fast-paced innovation culture. In doing so, it can help the U.S. maintain its edge by ensuring the military is equipped with the latest technology when it matters, not years after its obsolete.

B. QUANTITATIVE METRICS

A core hypothesis of this thesis is that involving NPS students in the innovation pipeline will lead to faster time-to-field of new capabilities. To validate and refine this hypothesis, a strong metrics framework is needed that tracks how student participation affects outcomes, and specifically, the cycle time of innovation to adoption. Equally importantly, these metrics will demonstrate accountability and help secure ongoing support (since, as the Defense Innovation Board stresses, tangible outcomes must be shown).

1. Defining Time-to-Field

For clarity, “time-to-field” here refers to the time from a solution’s inception (or entry into the accelerator) to its initial operational use or deployment in the hands of warfighters. Traditional defense acquisitions are often measured in years or even decades. the target is to shrink this to on the order of months (~12-18 months) for the kinds of prototypes handled. This doesn’t mean a fully fielded program of record in 18 months (which is unrealistic for big systems), but at least a prototype being used in an operational environment or limited deployment.

2. Key Metrics

Provided is a developed a set of Key Performance Indicators (KPIs) and Objectives & Key Results (OKRs) as appropriate. Here are the most relevant ones with regard to time-to-field and student impact:

a. Cycle Time Metrics:

(1) Average time from cohort start to first DoW contract award (months): This will measure how quickly companies secure that critical “bridge”

funding or agreement (likely an OTA or SBIR) after working within the program. Its anticipated this being within the 3–6 month range post-program for successful ones, given the focus on early alignment.

(2) Average time from initial DoW contract to first field deployment (months). This captures the latter part of the journey, from prototype contract to field use. Its targeted 12 months on average for cohorts. It will break down barriers in that phase by coordinating early with test and evaluation and interested units, so once funded, they can move into a trial quickly.

b. Transition Rate Metrics:

(1) Percentage of cohort projects that transition to a DoW program or get fielded. If there are 8 companies in a cohort, and 4 end up with a fielded pilot or adoption in some form, that's a 50% transition rate, which would be quite good relative to typical SBIR transitions (historically <20% fully transition). The program will set a goal (OKR) of, say, 50% in the pilot phase and aim to improve it as the selection and support is fine-tuned.

(2) Follow-on funding attracted (defense and private). While not exactly time, money is a proxy for progress: e.g., a startup that gets a $1M SBIR and a $5M venture round in six months clearly accelerated. Defense dollars (contracts) and venture dollars each project secures within a year of the program will be tracked, those often correlate to moving faster to production.

c. Student Participation Metrics:

(1) Number of NPS students involved per cohort & hours contributed. Its important to ensure robust student engagement without exploitation. This metric (monitored for each project) will help balance student workload. More interesting is correlation: do projects with more student involvement (or particular types of involvement) do better? That will be analyzed.

(2) Sponsor satisfaction & feedback. Feedback will be facilitated from the DoW sponsors on whether having students onboard added value, and whether they believe it sped things up. This qualitative metric (perhaps measured via a survey or after-action interview) will capture things not visible in hard data, like "the Marine officer on the team helped navigate base approvals in 2 weeks instead of 2 months," which is time saved but not a formal metric anywhere.

(3) Career outcome for students. Did this experience affect their careers (e.g., do they go on to acquisition or innovation tours, do they continue championing the tech in their units)? It's longer-term, but one could imagine measuring whether those who participated have higher rates of

involvement in later innovation initiatives. This, while outside immediate scope, speaks to building long-term capacity (time-to-field for future projects might improve if these officers become innovation advocates in the system).

d. Quality and Performance Metrics:

(1) Prototype performance in field tests (e.g., meets X of Y objectives). If things work better due to more informed development (thanks to student input), they likely transition faster because fewer rework cycles. The accelerator will track if prototypes indeed were more "operationally ready." For instance, one could measure how many iteration cycles were needed during testing. Fewer cycles would equal faster fielding.

(2) Warfighter/User feedback scores. If users (like a group of sailors testing a device) give it high marks out of the gate, that implies they were given a solution closer to needs. Such feedback can be gathered after demos. It can also drive time, less need to go back to drawing board.

3. Linking Students to Acceleration

How might the impact of student actions be evaluated? One way is to document case studies each cohort, particularly focusing on timeline and where having NPS involved made a difference. For example, if a student's connection allowed a rapid range clearance for a test, note that saved three months. Or if student insights during design prevented a fatal flaw that would have been discovered in OT&E (Operational Test & Eval) later, that could be noted. Over a few cohorts, evidence of patterns may become apparent, such as "projects with a student linking to a sponsor early tended to get contracts two months sooner than those that didn't." -If sample sizes allow, eventually these results can be statistically compared against a control group, e.g., startups that did not have this accelerator; how long did they take to get a contract or field test? If ours consistently outperform, that's a quant link. Initially, sample is small, but across all DoW one might find some benchmarks (e.g., average SBIR Phase II takes X months to get to test, is the accelerator beating that?).

Student involvement is incorporated into the processes that directly impact time. A student may have tasks explicitly aimed at acceleration, such as developing the "regulatory pathway plan" for their project (covering what approvals needed; safety certs, etc., and start working them early). These tasks can be tracked, e.g., "Did we obtain

Authority to Operate (ATO) for an IT system in timeframe? Because the student pushed paperwork through." If yes, that's a clear time saver. Certain process lead times can be measured (like ATO, contracting lead time) and if the projects did it faster than baseline, attributing part of that to persistent follow-up by the "sherpas."

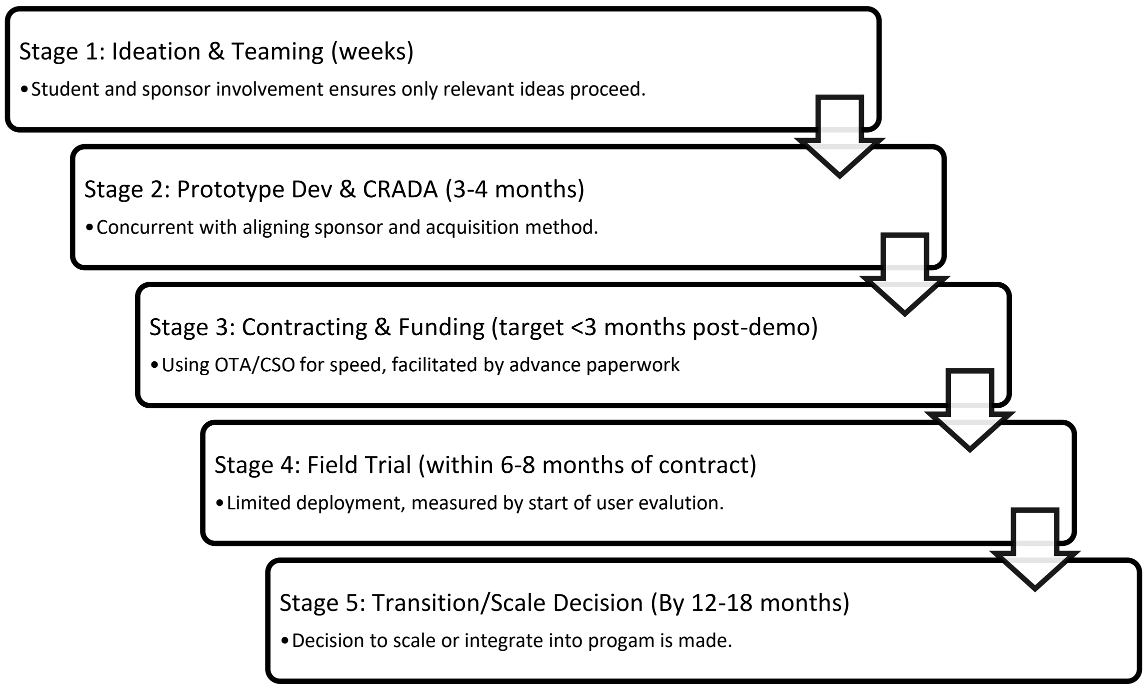

Figure 8. Time-to-Field Funnel Visualization

Durations between each stage for each project will be measured. Students are embedded primarily in stages 1–3. If the model works, stages 1–3 which often are sequential in normal process (taking easily >1 year) become partially parallel and compressed (maybe 6–7 months total). Stage 4 is largely technical and user tests; can vary, but accelerator involvement might expedite scheduling those tests (again, because they are planned early). Stage 5 is a decision point usually by the sponsor, we can't force faster budget, but if earlier phases done quicker (and results are good), sponsor can use maybe existing funds or the hedge/bridge funds to transition sooner.

To evaluate these dynamics rigorously, two distinct categories of impact are considered separately; student learning outcomes and student-driven acceleration effects.

Student learning outcomes capture what the students themselves gain; applied experience navigating acquisition pathways, regulatory approvals, early user testing, and operational problem framing. These are educational benefits to NPS independent of startup performance. By contrast, student-driven acceleration effects describe actions that measurably change a project's trajectory or benefit a DoW sponsor. These include tasks such as expediting range access, coordinating early evaluations, preparing regulatory pathway plans, or shepherding ATO and contracting processes. These actions can be tracked against baseline lead times to quantify acceleration attributable to student involvement. Distinguishing these two categories, learning versus acceleration, ensures that the evaluation framework can accurately attribute which outcomes stem from student development and which outcomes represent tangible value delivered to sponsors or startups.

4. Continuous Feedback and Adaptation

Post-mortems will be held for each cohort, including the students. It will be asked: what did the students do that was most helpful? Where were delays? Perhaps it's found that there's a need to involve them more in writing requirement docs or have them spend a week at the sponsor's command to hustle approvals. Then that's incorporated in the next round. The metrics will guide these improvements. For example, if contracting still took 6 months on average, a drill down is appropriate, was legal review slow? Perhaps next time, have JAG on the team earlier (maybe a student who's a contracting officer in training can help). The iterative nature of metrics usage ensures the accelerator increases its impact over time.

5. Policy Implication of Metrics

By tracking and proving metrics, policy can be influenced. If it is shown that projects with this approach have, say, 2x transition rate and 12-month faster fielding, that provides an evidence base to argue for expansion or replication of the model. It might also inform changes like recommending all service postgraduate schools adopt similar outside engagement rules, or to adjust SBIR processes to incorporate best practices. Ultimately, metrics are retrospective and will be used to advocate for making some of these pilot features more permanent in DoW innovation strategy. This reflects a broader issue in the defense innovation community. Casey Perley in a recent *War on the Rocks* article argues that without clear metrics, the DoW cannot distinguish between initiatives that genuinely deliver value and those that merely generate activity (Perley, 2025). By designing the accelerator around measurable transitions, time-to-fielding, student impact, and ecosystem engagement, the accountability gap is that the broader innovation enterprise continues to face is filled.

Setting specific targets for these metrics will help manage and communicate the accelerator's impact. For example, an ambitious but reasonable five-year vision might be: "50 startups accelerated, 20+ transitioned into military use, $100M+ in combined follow-on funding raised, 100 officers trained in innovation with 80% remaining on active duty, and at least 5 spin-off innovation cells or follow-on programs launched by alumni." These numbers would of course be refined as data is gathered but articulating them from the outset provides a clear yardstick for success. As one defense innovation board recommended, it's crucial to reward organizations for delivering outcomes like transitioning commercial solutions to the warfighter (Defense Innovation Board, 2023). Therefore, it is important to build metrics that track signals of NPS' "success" in partnering with an accelerator.

The metrics framework is designed to directly connect the presence and actions of NPS students and the accelerator to faster and better innovation outcomes. By measuring and learning, the aim is to empirically demonstrate the value-add of student participation and the accelerator construct, which will support continued iteration and investment in this model as a means to maintain the U.S. military's technological edge.

The anticipated benefits of the NPS-adjacent startup accelerator are multi-faceted and mutually reinforcing. Empowering people, delivering technology faster, and knitting together a more agile network. The interviews and stakeholder engagements revealed near-unanimous agreement on the desirability of these outcomes. Senior officers, upon hearing the concept, responded with sentiments like "We needed this yesterday" and "How can we help get this off the ground?." Bold actions, such as this accelerator, are urgently needed to break through institutional inertia. Even stakeholders who might traditionally be skeptical (acquisition officials, legal advisors, etc.) did not fundamentally oppose the idea; rather, they cautioned to "do it right" and ensure the proper safeguards. This broad base of support indicates a ripe environment to launch an accelerator and realize these benefits, provided it is executed with care and clear-eyed attention to the risks and challenges, which is addressed next.

C. RISKS AND MITIGATIONS

Launching and sustaining a third-party defense accelerator comes with several risks and challenges. This research identified these through stakeholder interviews (it was routinely asked, "What could go wrong?") and by analyzing similar efforts in the defense innovation space. It's essential to confront these risks head-on and design mitigation strategies so that an accelerator can succeed in the long run. Below, the key risks and how to manage them are discussed:

1. Conflict of Interest (COI) and Ethical Pitfalls

The most immediate risk is the potential for real or perceived conflicts of interest when active-duty students and faculty engage with private companies.

a. Risk

In a defense context, there are strict laws and ethical rules around procurement integrity, misuse of public office for private gain, endorsements, etc. For example, what if a Navy student working closely with a startup later has influence over a contract that the startup is competing for? Could their prior involvement bias the process? Or consider if an NPS professor holds equity in one of the cohort companies – that could raise questions about impartiality. Such scenarios must be proactively guarded against to protect both the participants and NPS's reputation.

b. Mitigation

As discussed in the proposal design, establishing a rigorous governance and ethics framework is key. This includes clear policies such as:

(1) Students will not be in any official role that makes government funding decisions for their project. Their involvement is educational and advisory, not as contracting officers.

(2) Any financial interest (equity or compensation) for military participants must be disclosed and, if allowed at all, structured in a way that defers personal gain until after they leave active duty (for instance, holding equity in a blind trust until the officer separates, or only allowing them to receive it upon entering the reserves).

(3) Frequent ethics briefings and legal reviews should be conducted for all participants.

The accelerator should set up an Independent Ethics Board, perhaps including a retired military JAG, an academic ethicist, and an outside industry expert, to periodically review operations and advise on any grey areas. Transparency will be critical. The more an accelerator publicly communicates its structure, sponsorship, and safeguards, the more trust it can build that nothing untoward is happening behind closed doors. In the interviews, one suggestion was to route industry funding through the NPS Foundation (a private nonprofit that already handles donations and partnerships for NPS) because the Foundation has experience in managing funds in compliance with federal rules. By ensuring that no money flows directly from companies to NPS accounts, instead going through the third-party accelerator entity or the Foundation, many potential conflicts are reduced. Additionally, formal legal endorsements of the model will be sought out. For instance, obtaining a written opinion from the Department of the Navy's General Counsel or DoW General Counsel that the pilot is authorized under certain conditions would provide top-cover. Perhaps the Secretary of the Navy or another authority could issue a policy memorandum specifically permitting this construct as an experiment, which would legitimize it in the eyes of more skeptical observers. Another idea raised was adjusting the student status: having the participating officers transition to a different personnel status (such as Individual Ready Reserve) during the accelerator period. If, say, the Chief of Naval Personnel agreed to let certain officers do a 6-month innovation fellowship in a non-active duty status, that could mitigate some COI concerns because technically they wouldn't be in an official capacity while working with the startup (thus normal ethics rules on outside employment might not apply the same way). However, that route has its own complexities and is essentially an administrative workaround. The core approach is simpler: robust ethics guardrails, oversight, and transparency. Building these considerations into the accelerator's design from day one can prevent most conflicts. Its acknowledged that this is somewhat new territory for NPS but, based on similar initiatives (e.g., Technology Fellows programs, DIU's service member liaisons), it is manageable with the right framework. The worst-case scenario (an ethics scandal) can be avoided by strict adherence to the rules and an uncompromising stance on integrity. This risk is high on the list because a misstep here could kill the program politically. Thus, the recommendation is to over-index on compliance: better to err on the side of saying "no" to a borderline case (e.g., disallowing a certain form of compensation) than to risk the entire endeavor. In short, COI risks are real but can be mitigated through clear policies, third-party oversight, and preemptive legal guidance, all of which will have to be factored into the implementation plan.

2. Funding Sustainability

Another significant risk is securing sufficient and continuous funding to operate an accelerator and provide investments to the startups.

a. Risk

As a third-party entity, an NPS-adjacent accelerator cannot count on a direct, steady stream of funding. Early funding will likely come from a mix of sources: potentially a grant from DoW innovation funds, contributions via the NPS Foundation, private investors, and sponsorship from industry or philanthropy. There is a risk that those sources could dwindle after initial enthusiasm, which could lead to a poorly forming accelerator. Moreover, part of the model is to have a dedicated venture fund to co-invest in cohort companies. If that fund doesn't fully materialize or struggles to attract investors, it may undercut the accelerator's ability to entice startups. Further risks include a significant reduction in the DoW acquisition budget that affects the entire defense industry or specifically affects the defense tech startup industry. An unsuccessful NPS-adjacent accelerator could have negative downsides for NPS.

b. *Mitigation*

Because an accelerator would be a third-party entity, it should be recognized that NPS would have limited tools available to mitigate a failure of the accelerator. However, NPS can encourage the accelerator to develop a diversified funding strategy, which may be one of the most important strategies for the financial viability of an accelerator.

For example, initial grants and donations (for example, a seed grant from OUSD(R&E) or from a defense-focused philanthropic donor) could be used to cover the first 1–2 cohorts of startups in the accelerator. The NPS Foundation may be willing to support an early cohort of startups as a "proof of concept." If some successful tech transitions and strong NPS student outcomes occur, it might be possible to get a DoW entity to support an accelerator because of the benefits it creates for DoW. Another approach is establishing an Other Transaction Authority (OTA) agreement or Partnership Intermediary Agreement (PIA) that allows ongoing funding from various commands who use the accelerator's services.

On the private sector side, designing the venture fund to appeal to outside investors is crucial. A fund could be pitched not just as a financial vehicle but as a patriotic investment in national security (some venture capital firms and individuals have indicated an interest in "dual-use" funds for defense). A government matched fund is also possible (for example, for every private dollar, a government fund matches with a dollar, up to a limit). This concept is being tried by the new Office of Strategic Capital in DoW. Corporate sponsorships of a specific cohort of startups is possible. For instance, a defense prime or tech company might sponsor an "autonomy cohort" by contributing funds and mentorship, in exchange for access to the technology developed by those startups. Many large defense contractors already spend on outreach to startups (via events, hackathons, etc.); sponsoring the accelerator is another way for them to engage with startups.

Overall, the chief mitigation strategy for NPS is to encourage an accelerator to be supported by diverse funding sources. While funding risk is real (many good innovation initiatives falter when their pilot funding ends) it may be mitigated by engaging a mix of stakeholders (public and private) to support it from the start.

3. Institutional Resistance

Any new initiative in a large organization can expect some level of inertia or pushback.

a. Risk

Within NPS, there could be internal resistance or skepticism. Some faculty or departments might resent resources and attention going to an "accelerator" rather than traditional academic research and teaching. They might worry it dilutes academic rigor or takes students away from thesis work. Additionally, the NPS Foundation and existing research offices might initially be cautious, viewing the accelerator as encroaching on their donor relationships or ongoing projects if not coordinated. Beyond NPS, other Navy or DoW entities might question why NPS (a school) is partnering with something akin to a third-party innovation program, perhaps perceiving it as stepping outside NPS's core education mission. There's also potential friction with existing innovation hubs: NavalX Tech Bridges, ONR's technology accelerators, DIU, AFWERX, etc. They might see this as competition or duplication unless it is deliberately positioned as complementary.

b. Mitigation

The rollout needs careful stakeholder management and framing. Internally at NPS, it must be emphasized that an accelerator enhances the academic mission, rather than detracts from it. Faculty should be involved as key players, for example, inviting professors to be advisors or principal investigators on accelerator projects (with appropriate credit or even modest compensation for their time). If faculty see that this brings in resources (funding for research assistants, access to industry data, etc.) and offers students rich thesis material, they are more likely to champion it. In fact, one of the pilot capstone projects in 2023 (the Innovation Capstone Project) illustrated that when faculty integrated innovation projects into curricula, it energized students and produced tangible outcomes. Showcasing such examples can win over doubters. Its also suggested to establish a faculty advisory board for the accelerator so that skeptical voices are heard and their concerns addressed early (often, resistance stems from feeling excluded from planning).

In interviews, some faculty initially expressed hesitation, but when they learned that an accelerator could lead to more applied research opportunities and elevate NPS's stature, they became supportive. As one professor put it, "If this helps get our ideas to the fleet faster, I'm on board." These internal champions will be leveraged. Regarding external innovation organizations, the key is collaboration, not competition. NavalX and DIU personnel have already been engaged during the research phase. The director of DIU, for instance, expressed enthusiasm about potentially feeding some of DIU's projects into an NPS-adjacent startup accelerator for further maturation, and vice versa. Formal partnerships can be established. For example, have a NavalX Tech Bridge director on the accelerator's advising committee, or share scouting information so efforts are not duplicated. An accelerator should present itself as a feeder and partner to others, not a silo. For example, if a project graduates from the accelerator but still needs procurement support, it might be handed it off to an existing program office or to DIU for scaling, thus it complements rather than competes. At the Navy leadership level, securing a top cover will neutralize a lot of resistance. If the Secretary of the Navy or the Chief of Naval Research publicly endorses the accelerator as part of the Navy's innovation strategy, then any lower-level naysayers will be encouraged to fall in line. The Secretary's establishment of the Naval Innovation Center at NPS is a promising sign of support. The accelerator can be explicitly aligned as a key program under the NIC umbrella. In doing so, its tied into an approved initiative (the NIC) rather than appearing as an unrelated pet project. Finally, success stories should be communicated early and often to build institutional buy-in. When the first cohort yields, say, a successful technology demo for the Fleet or wins an award, we will publicize that within Navy channels. Success has a way of attracting support and quelling critics. The mitigation, therefore, is proactive engagement and alignment: involve stakeholders in design, clearly define how this fills gaps in the existing ecosystem (not stealing anyone's rice bowl), and align with leadership priorities so that its pushing on an open door. Inevitably, some bureaucratic friction will occur (it always does when introducing new constructs), but given the current climate, where most leaders acknowledge the need for faster innovation, relatively low resistance is anticipated if relationships are managed well.

4. Program Execution

Even with ample support, executing an accelerator program is a complex endeavor. There are operational risks such as selecting the "wrong" startups (e.g., companies that fail to progress or were not truly ready), providing ineffective mentorship, or mismanaging the schedule.

a. Risk

If a cohort experiences poor outcomes (no prototypes delivered, strained team dynamics, etc.), it could tarnish the program's reputation. Additionally, because the accelerator will be dealing with real companies, a failure or misbehavior by one of them could reflect badly on the program. Imagine if a cohort startup imploded due to scandal or was discovered to have falsified data, headlines could quickly connect it to the NPS affiliated accelerator in a negative light. Moreover, as the program grows, scope creep is a concern, trying to take on too many problem areas or expanding beyond the core mission could dilute effectiveness.

b. Mitigation

Effective execution comes down to strong leadership, clear processes, and continuous learning. First, an experienced accelerator director and staff will be hired or appointed. The ideal program director might be a veteran of both worlds, someone with military experience and a track record in the startup realm. Such a person can bridge cultural gaps and will understand both DoW requirements and entrepreneurial realities. A few candidates in the network have been identified who fit this description. Along with staff, best practices will be codified from renowned accelerators (Y Combinator, TechStars, etc.) and adapt them to the defense context. Research on university and government accelerators provides some guidelines here (Metcalf et al., 2021; Cohen et al., 2019). For example, having a structured curriculum for the cohort (with workshops on customer discovery, pitching to DoW, acquisition 101, etc.), and pairing each startup with mentors from both tech and defense fields, are known success factors (Cohen et al., 2019).

Rigorous selection criteria for startups will be established. This includes using a selection board that includes technical experts, DoW stakeholders, and investors to vet applicants. In carefully curating cohorts (looking at tech maturity, team quality, defense relevance), the likelihood of getting solid teams that can deliver will be increased. We also won't shy away from removing or "pivoting" a startup if it becomes clear they're not working out, part of accelerator culture is to fail fast or change direction rather than drag on. To monitor execution, feedback loops will be implemented. Each cohort will end with an after-action review gathering input from startups, students, sponsors, and mentors on what went well and what didn't. This will allow quick iteration on the program design for the next cohort (treating the accelerator itself as a startup that needs to continuously improve its product). In terms of public failures, we'll set expectations with stakeholders that not every project will succeed… and that's okay. A failed startup in the cohort is not a program failure if other startups succeed or if valuable lessons were learned. Success will be framed in multiple dimensions (capabilities delivered and people educated, as noted earlier). That way, even if a particular company fails commercially, the DoW might still gain a useful prototype or the students still gain experience. To avoid misinterpretation, we'll be transparent about results and maintain an honest assessment of what worked or not. As for misconduct by any participant, that again circles back to having clear codes of conduct and vetting. Due diligence will be conducted on companies before selection (including basic ethics checks, review of any past legal issues, etc.). If something does occur, having the independent advisory board will help the accelerator respond quickly and objectively. Lastly, scope creep can be managed by governance. It important to stick to the mission of defense-relevant innovation and NPS student involvement. There will undoubtedly be pressure to expand (e.g., requests to run a purely civilian cybersecurity cohort for another agency, etc.), but at least in the first few years, anything that doesn't fit the core mandate should be politely declined. By proving the niche model, the scale or replication can be considered later in a controlled way. The risk of trying to "do too much" too soon is real, many innovation initiatives falter by lacking focus. A guiding mantra will be: "nail it, then scale it." Executing well means picking the right people and teams, following a proven playbook (tailored to DoW), keeping quality high, and not being afraid to adapt or course-correct. If that is done, the typical execution risks and build credibility is mitigated one cohort at a time.

5. Legal and Administrative Hurdles

Finally, there are bureaucratic and legal hurdles that could slow or complicate implementation.

a. Risk

Establishing the legal agreements between NPS (a government entity) and the accelerator (a third-party) will require navigating Navy legal review, which can be time-consuming. A Partnership Intermediary Agreement or a Cooperative Agreement Will likely be needed to be put in place, those can take months of coordination. Likewise, enabling active-duty students to work with private companies might require new policy exceptions or at least tacit approval from personnel commands. Military orders and assignments are tightly managed; allowing an officer to essentially "intern" at a startup for part of their graduate education is not a typical practice and may raise eyebrows in the personnel community. There's a risk that, without explicit approval, such student involvement could be stopped by a service personnel manager who says "this isn't in the regulations." Also, if the program is initially labeled a "pilot," it may only be given temporary authority that needs renewal, which could lapse.

b. Mitigation

To address the legal framework, there is thankfully some groundwork to build on. NPS already has a Partnership Intermediary Agreement (PIA) with the Fleet/Force Innovation 'Fleet Works' program, which could potentially be repurposed or amended to cover the accelerator activities. Engaging NPS's Office of Counsel early is important, in fact, during the research, specific Navy legal points of contact were identified who are willing to work through these issues (one recommendation was to talk to NPS's legal counsel who is described as someone focused on "getting to yes" on innovation within legal bounds). Accelerator staff could draft the needed agreements in close collaboration with them and have industry partners ready to sign. It might require creativity, like structuring the accelerator entity under the umbrella of the NPS Foundation or a similar not-for-profit that already has authority to work with NPS. By doing that, an entirely new legal channel wouldn't be created from scratch. On the manpower side, coordination can be made with the Navy and Marine Corps detailers and monitors respectively (the assignment managers) to formally incorporate the accelerator option into certain curricula. Perhaps start by treating it as an elective or internship that a limited number of students can do, with their service's permission. If needed, a specific waiver or exception to policy may be sought out for the first cohort. For example, a letter from the Chief of Naval Personnel allowing NPS to assign X students to an "Innovation Practicum" with industry in lieu of some traditional coursework. To secure one or two high-level memos like that, it will give cover to all the administrative players to allow this to proceed.

Another mitigation is to start small and under the radar administratively. For the pilot cohort, it might use only students who are near the end of their NPS time and whose follow-on orders can be adjusted if needed (or who are separating to civilian life, so they don't need follow-on orders). This way, the immediate need for a broad policy change is minimized. Once the program shows value, it can be formalized in the academic catalog and military orders. In essence, ask for forgiveness rather than permission for a couple of initial cases, then codify it. It's a bit of a tightrope, but not unprecedented, many educational innovations (like civilian grad school programs, fellowships at DARPA, etc.) started as one-offs and later got institutionalized. It will be ensured that no student's career is harmed by participation; part of mitigation could be securing agreement that their time in the accelerator counts fully as education or research credit toward their degree (so they still graduate on time) and that their fitness reports reflect the positive nature of this assignment. It was suggested more than once to aim to have at least one or two students from the Marines or another service in the pilot, since smaller services can be more flexible in trying new personnel ideas. As one of the Marine interviewees said, "Start with the Marine Corps, they're smaller, more flexible…," implying quicker approval might come through the USMC channels to let their officers do this). Overall, while navigating the bureaucracy is a non-trivial task, it's a surmountable one with early and persistent engagement of the right offices. The good news is that higher headquarters have been signaling openness to innovation in workforce management. For instance, recent DoW directives encourage "talent management" and utilization of officers in innovative billets. Requests can be aligned with that language. One DIB recommendation even said to "create career incentives for finding and adopting commercial solutions" (Defense Innovation Board, 2023), which indicates top-level recognition that traditional rules might need bending to promote innovation. By quoting those policies back to the system, it bolsters the case. Delays are likely, perhaps the first cohort starts a semester later than hoped due to paperwork, but that's acceptable. The model should not be compromised just to rush it; better to have all authorizations properly lined up, even if it takes a bit longer.

None of these risks whether they be ethical, financial, institutional, execution, or bureaucratic, are insurmountable. Each can be mitigated through careful planning, transparency, and by leveraging the very ecosystem of allies that have been cultivated during this research. A consistent theme in the findings is that the appetite for defense innovation is high, and many in leadership are willing to assume some risk for a chance at a better approach. It's important to manage and contain the risks so that they remain acceptable. It's believed the proposed accelerator has robust answers to these.

D. LIMITATIONS AND FUTURE RESEARCH

Before concluding, it is important to acknowledge the limitations of this study and the proposed accelerator model, as well as suggest avenues for future research. This project, by design, was exploratory and focused on building a proof-of-concept business case. As such, several limitations should be kept in mind:

1. Scope of Interviews and Data

Our qualitative interviews spanned a range of stakeholders (military officers, NPS faculty, innovation unit leaders, etc.), but the sample was relatively small and may not capture all perspectives. Notably, interviews with skeptics or adversaries of such initiatives were not done extensively (in part because most people that were approached were supportive in principle). Future research could deliberately seek out voices of dissent or lessons from failed innovation programs to add balance.

2. Generalizability

The accelerator concept is somewhat tailored to NPS and the Navy context. While the research drew on broader accelerator literature and defense innovation reports, the specifics (e.g., using NPS students, leveraging NPS Foundation) are unique. This model might not directly transplant to other services or institutions without modification. Studying how a similar accelerator might work at, say, the Air Force's Air University or an Army installation would be valuable to test generalizability.

3. Uncertainties in Outcomes

Because this is a forward-looking proposal, it is projecting benefits based on theory and analogous cases rather than observed results of this exact program (since it hasn't been implemented yet). There was an effort to temper inherent optimism bias by identifying risks. Nonetheless, real-world implementation could reveal unanticipated challenges or lesser benefits. A future pilot program evaluation is needed, effectively turning this study into a baseline and then conducting process and outcome evaluations after 1–2 cohorts to compare expected vs. actual benefits.

4. Policy and Legal Nuances

Legal and bureaucratic hurdles were touched on, but many details remain to be worked out in practice (for example, the exact wording of a policy exemption to allow student involvement, or the by-laws of the nonprofit entity). These details could significantly influence success but were beyond the scope of this thesis. An in-depth legal research effort, perhaps by a team of judge advocate general (JAG) officers or a policy research unit, could complement the work by producing the required legal frameworks.

5. Metrics and Long-term Tracking

Various metrics were proposed, but setting up the infrastructure to collect and analyze them is non-trivial. A limitation is that has not yet been established is how data will be gathered (e.g., tracking alumni careers might require surveys years down the line). It's important for future research to refine these metrics and possibly develop an evaluation framework or dashboard that the accelerator staff can use continuously.

Additionally, care will be needed to attribute outcomes correctly, for instance, if a startup succeeds, how much credit goes to the accelerator versus other factors? Rigorous methods (maybe a comparative cohort of similar startups not in the accelerator) could strengthen claims of impact.

Despite these limitations, it's likely the core findings and arguments hold strong. The need for faster defense innovation adoption is well documented (McNamara et al., 2024; Defense Innovation Board, 2023) and the proposed solution is grounded in both theory and practical precedents (like successful accelerators and military-industry partnerships). A comprehensive discussion of benefits and risks to inform decision-makers has been provided.

Future research could build on this work in several ways. First, as the accelerator launches (assuming it does), action research could be conducted where researchers embed in the program to observe and iterate the model in real time. This would generate rich insights on best practices for defense-focused accelerators, a topic that currently has sparse literature. Second, comparative studies could look at other innovation initiatives in DoW (like AFWERX's Spark cells, SOFWERX, etc.) to see how an NPS accelerator complements or improves upon those models. Third, a broader analysis of the "innovation workforce" in the military, identifying what skills and experiences make an officer an effective innovator, would be useful to tailor the human capital aspect of programs like this. the discussion posits benefits in that area, but more data (perhaps tracking career performance of officers with innovation tours vs. those without) would bolster the case to personnel communities. Finally, from a theoretical standpoint, future scholarship might examine this accelerator as a case of institutional entrepreneurship within the military, exploring how entrepreneurial principles can be systematically embedded in a rigid hierarchy, and what organizational changes result.

Being transparent about limitations and encouraging ongoing inquiry ensures that this initiative, if pursued, remains a learning endeavor. Innovation in the defense sector is not a one-and-done project but a continuous process of adaptation, much like the technologies it seeks to accelerate. As we proceed to the conclusion, how the findings of this study support actionable recommendations are summarized, and how they point the way toward a new model of defense-academic collaboration that can be refined over time.

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VI. CONCLUSION

This thesis set out to determine whether and how a third-party accelerator adjacent to the Naval Postgraduate School (NPS) can enhance defense innovation by integrating student participation into the broader innovation ecosystem. The research and analysis confirm that an independent accelerator at NPS that actively involves military graduate students is a priming mechanisms for accelerating the transition of emerging technologies into the defense enterprise by bridging critical gaps in both human capital, process, and research assets. In essence, such an accelerator provides a missing link connecting warfighter problems to cutting-edge solutions at speed, with NPS students acting as the connective tissue infusing operational relevance and entrepreneurial energy into the effort (Burt, 2001).

The evidence shows that this model may help tackle multiple enduring problems in defense innovation. It would help shorten the infamous "valley of death" between prototypes and fielded capabilities, reduce fragmentation by uniting disparate innovation efforts, and leverage underutilized NPS officer talent. An accelerator that is locationally close to NPS may help startups to cooperate more closely with NPS's operationally experienced students and specialized faculty. It can create a "triple helix" that aligns the incentives and workflows of academia (knowledge and talent), industry (technology and investment), and government (mission needs and resources).

The central claim of this thesis is a unique element of the triple helix at NPS is the integration of active-duty NPS students into the innovation process. Their participation provides a powerful source of operational insight, leadership, and cross-sector collaboration that existing defense innovation programs lack. In short, student involvement is the key differentiator that could transform an NPS-adjacent accelerator from just another startup accelerator into a specialized defense innovation accelerator.

Not only is this model desirable, it is also feasible. Stakeholder interviews with individuals throughout the defense innovation ecosystem all reinforced that an NPS-centered accelerator would fill a known gap and be welcomed. Prior NPS theses and external studies offer theoretical support as well, from Horowitz's emphasis on human capital in military innovation to the Defense Innovation Board's calls for faster technology adoption mechanisms. Moreover, this thesis has outlined practical design features and governance steps to mitigate potential risks, ensuring the concept can be implemented responsibly. The research marries an aspirational vision (making NPS a launchpad for defense innovation) with an actionable plan for realizing that vision, firmly grounding the proposal in evidence and execution strategy.

A. POLICY IMPLICATIONS AND RECOMMENDATIONS

Implementing an NPS-adjacent startup accelerator will require coordinated action and support at multiple levels. Key policy implications and recommendations include:

1. Establish Formal Pathways for Student Participation

DoW and Navy leadership should institutionalize active-duty student involvement in external innovation initiatives, creating, for example, an official "innovation fellowship" that allows select officers to extend their NPS tour or transfer to the Individual Ready Reserve (IRR) for 6–12 months to work on accelerator projects without career penalty. The Navy Personnel Command should count such accelerator participation as a beneficial broadening assignment, and the DoW General Counsel's office should issue clear guidelines or waivers delineating how service members can receive training or deferred compensation (like equity held in escrow) from a private-sector venture without violating ethics rules. These measures would remove ambiguity, encourage participation, and formally codify innovation pathways for students, similar to existing programs like Education with Industry or the Olmsted Scholarship.

2. Empower Public–Private Partnership Models (PIAs)

An accelerator's success may hinge on operating under a Partnership Intermediary Agreement (PIA) or similar public–private partnership authority. DoW and Congress should continue to support, and, if possible, expand the use of PIAs for defense innovation. If needed, an amendment in the next National Defense Authorization Act (NDAA) could authorize DoW to enter cooperative agreements with organizations that facilitate student involvement. Aligning these policy authorities will ensure that bureaucratic red tape does not stifle an accelerator experiment.

3. Resource Initial Operations through Multi-Sector Funding

An accelerator will need seed funding to launch and prove its value. A hybrid funding approach is advisable. the Department of the Navy (through ONR or OUSD(R&E)) could provide a small pilot grant to jumpstart the first cohort. The NPS Foundation could concurrently raise matching funds from private philanthropy (targeting donors interested in national security innovation).. In the longer term, if the accelerator demonstrates success, DoW could establish a dedicated funding line for it (perhaps through the Defense Innovation Unit or a Future Naval Capabilities program) to ensure sustained support. Additionally, corporate sponsorships and in-kind contributions (with appropriate transparency) should be encouraged. For example, technology companies might sponsor events or provide resources like software and cloud credits to support cohort projects. Ultimately, securing and diversifying funding will require leadership advocacy; senior leaders must champion the accelerator as a high-payoff investment in defense innovation.

4. Integrate the Accelerator with Existing Innovation Initiatives

To maximize impact and avoid duplication, an NPS-adjacent startup accelerator should be woven into the broader defense innovation network. DoW leadership could direct organizations like DIU, AFWERX/SpaceWERX, the Army Applications Lab, and NSIN to treat an NPS-adjacent startup accelerator as a pipeline partner. For example, the Deputy Secretary of Defense might issue guidance for these groups to refer promising solutions that need academic or operator input to NPS, and in turn to welcome and fast-track graduates of an NPS-adjacent startup accelerator into their own programs. Within the naval services, stakeholders such as the Chief of Naval Research and the Marine Corps Warfighting Lab should be involved by providing problem topics to the accelerator and absorbing successful outcomes (e.g., via rapid prototyping funds for further development). These partnerships can be formalized through memoranda of agreement or by including liaison representatives on the accelerator's advisory board, ensuring it becomes a well-connected node in the innovation ecosystem.

5. Foster a Pro-Innovation Culture and Incentives

Beyond the structural changes, success will also depend on cultural shifts that treat innovation as a core duty of military service. Senior leaders (Service Chiefs, the Secretary of Defense, etc.) must continue to champion bottom-up innovation and make it clear that participating in efforts within an NPS-adjacent startup accelerator is career-enhancing. For example, promotion board precepts and talent management policies should explicitly recognize innovation experience as valuable. If an officer who helps deliver a new capability through the accelerator is subsequently rewarded, say, selected for a prized assignment, it sends a message that taking smart risks in innovation is recognized and rewarded. Aligning incentives in this way will attract top-tier talent to the program. In practice, DoW could integrate innovation performance metrics into evaluations or establish formal recognition (such as an "Innovation Ribbon" or a special award) for those who make significant contributions to defense innovation.

Implementing these recommendations will require close coordination among NPS, naval leadership, and defense innovation stakeholders. The encouraging news is that the current climate is receptive, senior defense leaders and Congress are actively looking for ways to accelerate innovation adoption. For example, Congress recently mandated that DoW report on efforts to improve the transition of new technologies into operational use (see GAO 2025 findings). Including an NPS-adjacent startup accelerator as a pilot initiative in such reports could help attract congressional support. In summary, a well-crafted proposal for an NPS-adjacent startup accelerator is likely to find a ready audience, provided it clearly addresses legal, ethical, and funding considerations and ties into the broader defense innovation strategy.

B. FUTURE RESEARCH DIRECTIONS

While this thesis has been comprehensive in developing an NPS-adjacent startup accelerator concept, it also opens several avenues for further research:

1. Metrics and Longitudinal Impact

Once an accelerator is established, future researchers should rigorously assess its outcomes. One approach would be to develop an "innovation ecosystem health" dashboard to track changes at NPS and beyond. For instance, a follow-on study could measure pre- versus post-accelerator trends in key metrics such as the number of NPS and industry collaborative projects, the average time from prototype to contract, or the count of student-founded ventures. Additionally, research could follow the career trajectories of students who participate in the accelerator (e.g., do they become innovation leaders in the military, and do retention rates improve?), providing empirical evidence of an accelerator's impact on human capital and organizational learning.

2. Comparative Analysis of Innovation Models

As the DoW and individual services experiment with various innovation initiatives (e.g., AFWERX Spark cells, the Army's "Dragon's Lair" competition, or other accelerators and incubators), there is an opportunity to compare different models. Future research could examine what factors make these programs effective (or not) by comparing an NPS-adjacent startup accelerator with other approaches, such as a potential Air Force Institute of Technology (AFIT) accelerator, the SOFWERX model at USSOCOM, or civilian university-affiliated defense accelerators (like those run by MIT's Lincoln Laboratory). A comparative analysis could distill best practices and guide refinements to ensure an NPS-adjacent startup accelerator (and similar programs) achieve maximum impact.

3. Innovation Ecosystem Theory in Practice

An NPS-adjacent startup accelerator will offer a living laboratory to test and refine theories about defense innovation ecosystems. Researchers could use this setting to explore concepts like the "triple helix" collaboration between government, industry, and academia; the role of absorptive capacity in military organizations (i.e., the ability to recognize and integrate new external innovations); and the dynamics of innovation diffusion within a large, hierarchical institution. Qualitative case studies, social network analysis, and system modeling could be applied to map how ideas and technologies flow through an accelerator-enabled network, identifying bottlenecks or especially influential nodes. Insights from this work would not only validate the accelerator's design but also contribute to scholarly understanding of how to nurture innovation in the defense sector.

4. Technology Domain Deep Dives

Given that an accelerator will span multiple technology areas (from AI and cybersecurity to robotics and space systems), future studies might focus on the accelerator's process within a specific domain. For example, a thesis could investigate "Accelerating AI Adoption at NPS" by tracking an AI-focused cohort, examining domain-specific challenges such as data access for training algorithms, test and evaluation requirements for AI systems, or trust and ethics issues in autonomous decision-making. A deep dive like this could yield tailored recommendations for handling certain categories of technology. For instance, highlighting the need for special data-sharing agreements or classification guidance when dealing with military AI projects. These domain-specific insights could help fine-tune the accelerator's approach to different kinds of innovation.

5. Scaling and Replication

If an NPS-adjacent startup accelerator model proves successful, a logical next question is how to expand its reach. Future research could examine options for scaling the program, either by broadening its capacity at NPS or by replicating the model elsewhere. For example, one study might assess the feasibility of establishing similar accelerators at other professional military education institutions (such as an innovation hub at Air University or an accelerator linked to the Naval War College for senior officers) or even integrating elements of the model into undergraduate service academies to cultivate innovation skills earlier. Another study could analyze scaling within NPS, perhaps developing multiple specialized accelerator tracks (e.g., a space technology accelerator in partnership with Space Systems Command, or a cyber-focused track). Investigating the resource requirements, stakeholder buy-in, and organizational adaptations needed for such expansion would be invaluable for decision-makers contemplating broader implementation.

6. Industry and Investment Perspectives

Finally, more research is needed on how to align the incentives of private industry and venture capital with defense innovation objectives. An NPS-adjacent startup accelerator can serve as a microcosm for studying how different incentive structures affect outcomes for defense startups. Future researchers might explore various models such as modest government matching funds for private investment or a venture fund that offers both financial returns and strategic (mission-oriented) returns to see which mechanisms best encourage private capital to engage in national security innovation. Insights from this line of inquiry would inform how the Department of War and its partners can better attract and leverage private-sector innovation for the public good.

In closing, establishing an NPS-adjacent startup accelerator could mark a shift in how the Department of War can leverage its educational institutions as hubs of innovation. This initiative recognizes that people, talented, motivated, and empowered officers and collaborators, are the true engine of innovative change, and by breaking down silos and giving these individuals a platform to collaborate across academia, industry, and the military, a force multiplier for technological advancement is created. As former Secretary of Defense Ash Carter observed, the Pentagon's innovation challenge is "not about a lack of technology, but about the inability to adopt technology." If implemented, an NPS-adjacent startup accelerator could become a model for others across the defense enterprise, helping to fulfill the national imperative of maintaining a military edge through continuous innovation and.

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APPENDIX A: OUTSIDE EMPLOYMENT MEMORANDUM

DEPARTMENT OF THE NAVY
NAVAL POSTGRADUATE SCHOOL
1 UNIVERSITY CIR
MONTEREY, CA 93943-5000

5370
Ser 120/201
20 Nov 25

MEMORANDUM

From: Commanding Officer, Naval Postgraduate School Student Military Element
To: Naval Postgraduate School Students, Faculty, and Staff

Subj: OUTSIDE EMPLOYMENT BY ACTIVE-DUTY STUDENTS - LEGAL PATHWAY, CONDITIONS, AND OVERSIGHT

Ref: (a) NPSINST 5370.3E

1. Purpose. This memorandum affirms the availability of a legal pathway for active-duty students at the Naval Postgraduate School (NPS) to engage in outside employment, including consulting-type services with private sector entities, subject to applicable laws, regulations, and approvals per reference (a). It also outlines the supporting role of NPS legal counsel to educate students on process, risks, and ethical guardrails, including intellectual property (IP) and proprietary information considerations. This memorandum acknowledges a lawful pathway for outside employment by active-duty students and confirms NPS's commitment to educating and supporting students in pursuing such opportunities in full compliance with applicable law and policy.

2. Authority and Scope. Outside employment by active-duty servicemembers is governed by federal ethics laws, Department of War (DoW) and Military Department regulations, and service-specific command policies, as well as applicable NPS instructions. This memorandum:

a. Acknowledges the existence of a lawful pathway for outside employment by active-duty students.

b. Applies to NPS students on active duty across all Services.

c. Does not supersede Service rules or create any new right, benefit, or cause of action.

3. Permissible Activities. Subject to approval, outside employment may extend to consulting-type services, including with defense technology startups and other private sector entities, provided that:

a. All required prior approvals are obtained from the student's chain of command and ethics counsel in accordance with Service regulations and applicable law.

b. The employment does not conflict with official duties, academic requirements, or mission needs.

c. The student complies with all ethics, security, disclosure, export control, and operational security requirements.

4. Required Approvals & Process. Before beginning any outside employment, active-duty students must:

a. Consult their Service chain of command to determine Service-specific requirements (e.g., off-duty employment approval, duty-hour limitations, local policies).

b. Seek ethics guidance from the NPS Office of the Counsel/Ethics Counselor to confirm compliance with applicable statutes and regulations.

c. Document approvals in writing (e.g., command authorization, ethics opinion) in accordance with standard NPS processes prior to commencing work and retain copies for their records.

d. Coordinate with advisors (as appropriate) to ensure outside activities do not interfere with academic progress or research obligations.

5. Education, Risks, and Guardrails. The NPS legal team will educate and advise interested students on:

a. Process: Steps, forms, and timing for obtaining required approvals.

b. Risks: Areas such as schedule interference, conflicts of interest, misuse of non-public information, and reputational risk.

c. Ethical Guardrails & COI: Standards of conduct (e.g., impartiality, non-misuse of position, no use of government resources for private work), outside activity restrictions, and financial conflicts.

d. IP & Proprietary Information: Ownership and licensing of IP created in outside roles; interplay with government or university IP; non-disclosure agreements (NDAs); protection of proprietary data; and obligations concerning non-public government information.

e. Security & Export Controls: Handling of sensitive, controlled, or classified information; and compliance with ITAR/EAR and related controls.

f. Students remain individually responsible for understanding and complying with these requirements.

6. Conditions of Participation. Active-duty students who engage in approved outside employment must adhere to the following:

a. Mission & Academics First: Outside work may not interfere with official duties, readiness, or academic progress. No Misuse of Position or Resources: Students may not imply NPS/DoD endorsement, may not use government time/resources for private work, and may not disclose non-public information.

b. Clear Separation of Roles: Private work must be conducted on personal time and equipment, with clear segregation from official and academic duties.

c. Disclosure & Recusal: Students must promptly disclose potential conflicts and, where required, recuse from official matters affecting their private employer.

d. Written Agreements: Students should ensure any private agreements (e.g., consulting contracts, NDAs, IP assignments) are reviewed as appropriate to avoid conflicts with government or academic obligations.

7. Oversight and Institutional Support. NPS maintains institutional processes to guide and safeguard students pursuing such opportunities, including:

a. Ethics counseling and training provided by NPS legal counsel.

b. Coordination mechanisms with Service commands to align approvals and duty requirements.

c. Referral pathways to IP and research compliance offices when scholarship or research intersects with outside work.

d. Documentation standards to support transparency and accountability.

8. Points of Contact. For questions or to initiate the approval process, students should contact:

a. Office of the Staff Judge Advocate: (831) 656-7612 or sja@nps.edu.

b. Office of the Dean of Students: (831) 656-2291 or dosea@nps.edu.

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APPENDIX B: COLLABORATIVE RESEARCH TOOLS

More information on each of these tools can be found by emailing research@nps.edu.

- Cooperative Research and Development Agreement (CRADA) – https://acqnotes.com/acqnote/tasks/cooperative-research-anddevelopment-agreement
- Memorandum of Understanding (MOU) – https://www.usaid.gov/sites/default/files/documents/1880/Section%206%20MOU%20Overview.public.updated022013.pdf
- Memorandum of Agreement (MOA) – https://acqnotes.com/acqnote/careerfields/memorandum-of-agreement-moa
- Educational Partnership Agreement (EPA) – https://www.navsea.navy.mil/Home/Warfare-Centers/Partnerships/Business-Partnerships/EducationalPartnership-Agreements/
- Small Business Innovation Research (SBIR) – https://www.sbir.gov/about
- Small Business Technology Transfer (STTR) – https://www.sbir.gov/about
- Intergovernmental Agency Agreement – https://cdola.colorado.gov/intergovernmental-agreements-igas

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APPENDIX C: NAVAL POSTGRADUATE SCHOOL INNOVATION ASSETS REFERENCE GUIDE

The information contained herein is current as of October 2025.

A. UNDERSEA SYSTEMS

(1) Center for Autonomous Vehicle Research (CAVR) – Dept. of Mechanical & Aerospace Engineering. Focuses on unmanned underwater vehicle (UUV) technology and education. CAVR develops and tests advanced underwater drones for Navy missions, from navigation and sonar to multi-vehicle operations. Contact: NPS MAE Department / CAVR program office (Spanagel Hall).

(2) Undersea Sensing Systems Laboratory (USS Lab) – Dept. of Physics. An undersea acoustics lab with multiple sensor platforms (bottom-moored arrays, autonomous undersea/surface vehicles, etc.) for undersea surveillance and environment monitoring. Used in research on detecting undersea targets, marine mammals, and underwater communications. Contact: Research Asst. Prof. Paul Leary (Lab Manager), Physics Dept, NPS.

(3) Advanced Warfighter Technologies Lab (AWTL) – Dept. of Physics. Develops cutting-edge tech to enhance warfighter and undersea capabilities. Projects include artificial muscles for quieter, efficient UUV propulsion and biofuel cells using seafloor microbes to recharge unmanned undersea vehicles. Also innovates advanced diver suits with superior insulation to prevent hypothermia. Contact: Dr. Emil Kartalov (Director, AWTL), Physics Dept, Spanagel Hall, NPS.

B. AUTONOMY & ROBOTICS

(1) Sea Land Air Military Research (SLAMR) Facility – NPS's multi-domain robotics test range. The SLAMR lab is the nation's only site allowing experiments with robotic systems in sea, land, air, space, and cyberspace domains simultaneously. It enables military, industry and academia to collaborate on swarm C2, autonomous vehicles, and human–robot teaming in a controlled outdoor environment. Contact: Dr. Raymond Buettner (SLAMR Director); SLAMR Facility at 1951 Del Monte Ave., Monterey.

(2) Consortium for Robotics and Unmanned Systems Education & Research (CRUSER) – A SecNav-chartered NPS consortium uniting ~3,000 members in academia, industry, and DoW to advance unmanned systems and autonomy. CRUSER supports students/faculty with seed projects and rapid prototyping sprints, taking ideas "from concept generation to

experimentation" in the field. It has delivered dozens of robotic solutions (e.g. UAV prototypes) to the fleet. Contact: CRUSER Program Office, NPS (open membership via CRUSER website). (cruser@nps.edu)

(3) CIRPAS Airborne Research Facility – Center for Interdisciplinary Remotely Piloted Aircraft Studies. Operates a fleet of manned and unmanned instrumented aircraft from Marina Airport. Provides test platforms and custom sensor payloads for atmospheric, oceanographic, and UAV technology experiments. Examples include a Twin Otter research plane and drones used to evaluate new sensors, communication systems, and environmental data collection for DoW and science partners. Contact: CIRPAS Hangar, Marina, CA – Dr. Haflidi "Jon" Jonsson (Chief Scientist).

C. COMPUTING & AI

(1) NVIDIA AI Technology Center (AI Supercomputing Hub) – NPS's state-of-the-art hub for defense artificial intelligence research. Established in 2025 via a Navy–NVIDIA partnership, it is equipped with cutting-edge AI hardware (NVIDIA DGX GPU supercomputers, "Blackwell" GPUs, Jetson edge devices) and the NVIDIA Omniverse platform. This secure facility enables development of AI-driven digital twins, large-scale model training, and real-time simulations for mission planning and autonomy. It accelerates prototyping by providing on-site high-performance computing for NPS students, faculty, and partners. Contact: NPS Emerging Tech Center (AI Task Force) via Office of Research & Innovation (research@nps.edu).

(2) Consortium for Intelligent Systems Education & Research (CISER) – NPS's interdisciplinary AI/ML consortium. CISER connects over 60 faculty across departments with operational experts to tackle grand challenges in AI. It breaks down silos to rapidly prototype AI solutions for defense, providing DoW-relevant insights into autonomy, data science, and intelligent systems. The consortium also supports AI education (e.g., online certificates and the Navy's AI training courses) and works with industry and warfare centers to transition AI tools into practice. Contact: CISER Board (led by Distinguished Prof. Peter Denning) via NPS Computer Science Dept.

D. CYBER & NETWORKS

(1) Center for Cyber Warfare (CCW) – Dept. of Electrical & Computer Engineering. An interdisciplinary research center delivering both classified and unclassified cyber innovation. CCW focuses on solving hard cyber operations problems for the Navy, DoW, and intelligence community. Its projects develop tactical and operational cyber capabilities

– from novel network defense techniques to cyber-electronic warfare integration – often via cross-discipline "joint problem solving" teams. Contact: CCW Office (Spanagel Hall 437, NPS), Tel. (831) 233–4361, Email: ccw@nps.edu. Director: CDR Chad Bollmann, USN.

(2) Center for Network Innovation and Experimentation (CENETIX) – Dept. of Information Sciences. A research center and live testbed for resilient tactical networks and mesh communications. Born from NPS field experiments, CENETIX leads "Tactical Network Topology" trials and maritime interdiction network experiments, integrating emerging comms tech into real-world scenarios. It manages a student-operated mesh network and coordinates the networking aspects of NPS's field exercises (like TNT and JIFX) to rapidly iterate on cyber-network prototypes. Contact: Dr. Alex Bordetsky (Director, CENETIX), Info. Sciences Dept, NPS.

E. HUMAN PERFORMANCE

(1) Crew Endurance & HSI Laboratory – Human Systems Integration Program, Dept. of Operations Research. This lab studies how warfighters interact with environments and technology, optimizing human performance and well-being. The team, led by Dr. Nita Shattuck, pioneered the Navy's shift to circadian-based watch schedules, now implemented fleet-wide to improve sailors' alertness and health. Current projects examine fatigue (sleep patterns), lighting and habitability on ships, workload stress, and other human factors that impact readiness. By integrating human physiology into system design, the HSI/Crew Endurance group delivers data-driven changes to Navy policies that enhance operational effectiveness. Contact: Crew Endurance Team – Dr. Nita Shattuck (Program Lead), Glasgow Hall 3rd Deck, NPS (crewenduranceteam@nps.edu).

F. WARGAMING & MODELING

(1) NPS Wargaming Center (Naval Warfare Studies Institute) – NPS's hub for wargame design, execution, and education. The center develops and runs analytic wargames for Navy and Joint sponsors, focusing on data-driven, scenario-based warfighting simulations to explore strategic and operational challenges. It offers both resident courses and mobile teams to train organizations in wargaming, and has recently executed high-profile Title 10 games (e.g. U.S.–Japan maritime campaigns) to inform senior leaders. The Wargaming Center emphasizes quick-turn "wartime" prototyping of game methods and uses emerging technologies to adjudicate outcomes. Contact: Col. Jason Perry, USMC (Director) – NWSI Wargaming, NPS.

(2) MOVES Institute (Modeling, Virtual Environments and Simulation) – An interdisciplinary research institute advancing defense modeling & simulation, training, and visualization. MOVES develops ways for military units to wargame and rehearse missions via integrated live-virtual-constructive simulations and AI. From VR/AR training systems to AI-driven adversaries, MOVES projects make large-scale exercises more realistic and efficient. The institute fosters open exploration of simulation tech for the Navy – enabling practice of complex maneuvers (far too costly or impractical to always do live) in virtual environments. It has expertise in 3D visualization, human behavior modeling, and networking of simulators to support everything from tactical training to analysis of new warfighting concepts. Contact: Dr. Imre Balogh (Institute Director), Watkins Hall, NPS.

(3) SEED Center for Data Farming – Dept. of Operations Research. Specializes in large-scale simulation experiments and analytics to support decision-making. The SEED Center ("Simulation Experiments and Efficient Designs") advances the state-of-the-art in running massive simulation trials by developing efficient designs to explore complex models. Its mission is to "make modeling and simulation more effective for decision makers," applying statistical design and data farming techniques to military problems. SEED has tackled scenarios from peacekeeping operations to networked warfare by rapidly analyzing thousands of simulation runs to identify robust tactics and policies. It provides tools and expertise to turn big simulation data into insights for commanders. Contact: SEED Center, Glasgow Hall 261, NPS, Tel. (831) 656–7836. Co-Directors: Dr. Susan Sanchez & Dr. Tom Lucas.

G. FIELD EXPERIMENTATION & INNOVATION

(1) Central Coast Tech Bridge (NavalX Tech Bridge) – A Naval Innovation pipeline node connecting NPS with industry, startups, and other regional partners. The Central Coast (C2) Tech Bridge serves as the "front door for entrepreneurs to work with the Navy and DoD on technology solutions," leveraging NPS faculty and operational students to tackle fleet problems. It links the school's research and Silicon Valley's innovation ecosystem, accelerating dual-use prototyping and adoption of new technologies by fostering public–private collaboration in an unclassified, agile environment. Contact: Mr. Marco Romani (Director, C2 Tech Bridge) – NavalX Central Coast, Naval Postgraduate School.

(2) Joint Interagency Field Experimentation (JIFX) – A quarterly field experimentation program hosted by NPS to test emerging technologies in realistic scenarios. JIFX events invite private companies, academia, NPS researchers, and DoD operators to experiment with new prototypes – UAVs, sensors, cyber tools, humanitarian tech, and more – at Camp

Roberts and other test ranges. Participants get feedback from warfighters and data on performance in real-world conditions, while DoD observers identify promising solutions to urgent problems. JIFX provides a low-barrier sandbox for innovation, speeding the "lab to field" cycle by letting innovators and end-users iterate together. Contact: NPS Field Experimentation Office (FX) – jifx@nps.edu.

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