How to Build Relationships with NSIN

BEVERLY SEAY
Southeast Regional Director
National Security Innovation Network
U.S. Department of Defense

Mission

We build networks of innovators to generate new solutions to national security problems.

> The Department of Defense's (DoD) current model for problem-solving is expensive and inefficient.

> The complexity of problems the DoD faces and the speed at which solutions are required means new problem solvers are critical.

> Adding intellectual diversity from non-traditional solution providers (e.g. the academic and early-stage venture communities) is necessary to solve problems more economically, faster, and better.

> A networked approach enables the consistent problem-solving capability for the DoD that helps bridge the civil-military divide and improves outcomes for service members.

NSIN

Our Organization

Office of the Secretary of Defense

MISSION: The Department of Defense's enduring mission is to provide combat-credible military forces needed to deter war and protect the security of our nation.

Defense Innovation Unit (DIU)

MISSION: Strengthen our national security by accelerating the adoption of leading commercial technology throughout the military and growing the national security innovation base.

National Security Innovation Network (NSIN)

**MISSION:** Build networks of innovators that generate new solutions to national security problems.

NSIN

Who

- DoD program office reporting to the Office of the Secretary of Defense
- Program of Record FY20
- All programming provided by NSIN

What

Venture · National Security · Academia

- Competitive and Diverse Talent
- Partnerships
  - Universities
  - Venture Community
  - DoD/Warfighters
- Dual-Use Solutions
- Expand the National Security Innovation Base
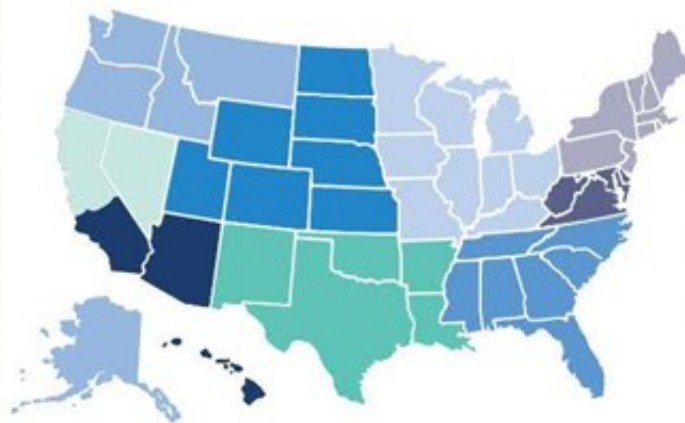
Where

- HQ in Arlington, VA
- 37 regional positions across 26 states

NSIN

A New Model for National Security Innovation

NSIN delivers on its mission through two portfolios:

1 Talent

Bringing in new talent to solve hard, national security challenges.

2 Ventures

Driving access to early-stage ventures to address national security problems.

NSIN

Programs of Record

Talent Portfolio

BOOTCAMP
Teaches service members how to use Human Centered Design to develop minimum viable product (MVP) solution concepts for problems that directly affect their command.

ACADEMIC PROGRAMS
Pairs student teams with DoD to solve challenge as a part of an independent study or practicum course.

X-FORCE FELLOWSHIP
During the summer, pairs recent graduates and current students with a DoD organization to solve problems ranging in complexity and across disciplines.

Venture Portfolio

CHALLENGES
Bring collaborators from the defense, academic, and venture communities together to work on the most challenging technical problems in national security.

EMERGE
Connects DoD mission partners (e.g., operational units, program offices, etc.) with emerging technology teams and startups at our nation's top research universities.

PROPEL
Partners with commercial startup accelerators to lower barriers to entry for dual use ventures and lowers risk for DoD end users in discovering novel solutions.

NSIN

Transition Cell

Offers post-NSIN programming support to alumni teams and companies.

> Our expertise and resources are available through one-on-one consultations, curated collection of resources, and customized support plans.

> Subject Matter Expertise:
>> Government Contracting
>> Private Investors and Capital Access
>> Planning Government as a Customer 101
>> Testing and Evaluation Resources
>> Market Analysis
>> Scaling Solution Adoption

> Our Network:
>> Private Investors
>> Small Businesses Resources
>> University Resources
>> Testing and Evaluation Resources

> Government Contracts Expertise:
>> SBIR/STTR
>> OTAs
>> Prize Authority
>> Other Non-FAR Options
>> Customer Memorandums of Agreement
>> Rapid Acquisition Authority

The Transition Cell is currently engaged with 30+ companies, supporting them with subject matter expertise to achieve DoD adoption through multiple contract strategies as well as navigating the process of raising private capital.

The Transition Cell is also building a network of 900+ investors and mentors to help further connect NSIN ventures within the DoD ecosystem and relevant startup ecosystems across the country.

Learn more about the Transition Cell: **nsin.mil/transition-cell**

NSIN BY THE NUMBERS

NSIN FUNDING

$114 MILLION

NSIN HELPED

983

DoD organizations **SOLVE**

1,511

PROBLEMS
by generating

1,786

unique solutions.

ENGAGED

8,419

NEW PEOPLE
in the National Security
Innovation Base.

SUPPORTED

1,326

NEW COMPANIES
to enter the National
Security Innovation
Base and spun out
**48 of DoD-funded
technologies.**

Since 2016, companies in
NSIN programs **RAISED**

$9.6B

**IN PRIVATE CAPITAL
FUNDING**

and

$2.9B

IN DoD FUNDING.

NSIN

Why Innovation?

- Rapidly deploy solutions to challenging problems in six to eighteen months.

- Dual use technologies solve problems and creates a potential pathway to entrepreneurship.

- Innovation increases DoD's visibility of a university's capabilities.

- Most of the cost of innovation is covered by NSIN and other organizations in the [DoD innovation ecosystem](#).

Talent

Bringing in new talent to solve hard, national security challenges.

Bootcamp

Solution generation by teaching innovation methods and exposing service members to problem-solving tools in the context of a command problem.

> A three-day crash course in design thinking that brings innovation tools and practices to bear on the DoD's toughest problems.

> Human-Centered Design and Lean Launchpad training offered to a cohort of up to 40-participants.

> University teaching team.

> Sponsor gains a more agile and adaptable team trained in innovation thinking.

> Sponsor achieves a clearer understanding or solution to a command-level problem.

> Assists with stakeholder buy-in.

In Action

Sponsor: Program Executive Office Integrated Warfare Systems

Project: Determine ways to modernize the review process to reflect a Model-Based Systems Engineering (MBSE) approach and facilitate metrics and accountability on program implementation.

Solution: The PEO IWS Bootcamp concluded with six total solutions. Three solutions were reviewed internally by PEO IWS action officers and the team leads, and the other three solutions continued in NSIN programming for further research and development.

Learn more about Bootcamp: **nsin.mil/bootcamp**

Academic Programs

Multidisciplinary student teams from university courses bring unconventional thinking and novel approaches to your toughest problems.

> Existing university courses focus on either solution discovery or solution implementation based on the status of the problem.

- **Solution Discovery Courses:** Students are taught concepts such as human-centered design, Lean Launchpad methodology, and critical thinking skills to validate a sponsor's problem to prepare for prototyping and/or implementation stage.

- **Solution Implementation Courses:** Students take a well-defined sponsor problem (which could be a follow-on from a discovery course) and work with the sponsor to build it out.

> Students from diverse educational backgrounds engage directly with problem sponsors.

> Student teams are configured to meet the unique needs of each project.

> Sponsor receives a minimum viable product (MVP) and significant new analysis and thinking on the topic.

In Action

Sponsor: 305th Air Mobility Wing

Project: Develop a way to scan quickly for survivors after a crash that utilizes drone technology.

Solution: An app where you can circle on a map where the drone needs to scan, the drone deploys and send back 3D imagery of the crash site to the app.

Learn more about NSIN's Academic Programs: **nsin.mil/portfolios/talent**

X-Force Fellowship

Multidisciplinary student teams bring unconventional thinking and novel approaches to building solutions as an embedded fellow or "intern" in military commands.

> NSIN hires fellows every summer to work on your national security projects.

> Full-time, project-based summer internship.

> Virtual or in-person, embedded with military sponsor.

> Open to U.S. citizens at the undergraduate and graduate level.

> No cost to the sponsor.

> Sponsor receives a minimum viable product (MVP).

> Sponsor gains significant new, creative analysis and thinking.

In Action

DEVCOM ARMY RESEARCH LABORATORY

Sponsor: Army Research Lab – West

Project: Quickly identifying armored fighting vehicles in an individualized, gamified approach to training.

Solution: Student team developed app that applies the training approach to armored vehicle identification.

Learn more about X-Force: **nsin.mil/x-force**

Venture

Driving access to early-stage ventures to address national security problems.

Challenges

NSIN Challenges bring collaborators from the defense, academic, and venture communities to work on the most challenging technical problems in national security.

› Solving complex problems requires a combination of diverse technologies and talent.

› Work on problem sets from the DoD that are sources of opportunity for non-traditional problem-solvers.

› Participate in innovation challenges that help DoD problem owners confront obstacles that affect their readiness and resilience.

› Collaborate and learn from other innovators tackling the DoD's problems.

In Action

Sponsor: Air Force Research Laboratory

Grand Challenges:
- *Metallic Scrap and Waste Powders* - Demonstrate production of powder from scrap materials and rejuvenation of used or out-of-spec titanium powder for additive manufacturing.

- *Quantum Networks* - Develop high-rate entangled-photon sources to enable global quantum networks, networked quantum sensors, and distributed quantum computing.

- *AI Planners for Optimization* - Identify and build a machine learning-artificial intelligence system that can efficiently help researchers find appropriate conditions for optimization and discovery of new synthetic compounds using multi-system approaches.

- *Quantum Information* - Extraction of images beyond the Rayleigh limit pitched high-resolution space imaging solutions.

Learn more about Challenges: **nsin.mil/portfolios/venture**

Emerge Accelerator

Explore the dual-use potential of emerging technology startups from top research universities.

> Open to any university-based startup with nomination from tech transfer office.

>> The 8-week program teaches business fundamentals of dual-use venture creation.

>> Concludes with a final pitch showcase.

>> Many opportunities to engage with DoD stakeholders.

> Teams selected based on technology uniqueness, stage, and our ability to match to DoD partners within our network.

In Action

Sponsor: City of Phoenix

Company: Argos Vision Inc.

Project: Object Detection at the Edge

Solution: Accurately determining the counts of pedestrians, vehicles, and bicycles for traffic analysis with low power computation at the edge, thus reducing cost.

- Purchased by city for traffic management.
- Fulton Entrepreneurial Professors Program Fellowship awarded.

City of Phoenix

Learn more about Emerge: **nsin.mil/emerge**

Propel

Supports the DoD's effort to maintain its competitive edge by collaborating with innovative and non-traditional partners and influencing the development of solutions delivered by early-stage ventures and accelerates their transition readiness.

› Three-to-four month accelerator program for the DoD and 10-12 dual-use ventures to work together to shape solutions that solve DoD customer problems.

› Includes targeted services and DoD-specific mentorship and education to prepare early-stage ventures for DoD adoption.

› Early-stage dual-use ventures are better prepared to successfully transition solutions to the DoD.

› Can lead to multiple adoption opportunities including SBIR Phase I, direct to Phase II, OTAs, BAAs, etc.

In Action

PISON

U.S. AIR FORCE

Sponsor:	PEO Digital
Project:	Human-Machine Teaming
Solution:	A wearable device intended to assist Parkinson's patients and also serve defense needs:

- Pison contracted with several DoD organizations, securing more than $7 million in research and development funding.
- Pison's first product that enables gesture control with autonomous systems and software, such as ATAK, is being sold to the DoD.

Learn more about Propel: **nsin.mil/propel**

National Capital Region

Kedar Pavgi
National Capital
Regional Director

John Reisenweber
Regional Engagement
Principal, West Virginia

David Schiff
Regional Engagement
Principal, Washington, D.C.

NSIN

Southeast Region

Beverly Seay
Southeast Regional Director,
University of Central Florida

Alison Beatty
Regional Engagement
Principal, Georgia

Marcy Muldrow Sanders
Regional Engagement
Principal, Florida Panhandle

Errol Reid
Regional Engagement
Principal, Alabama

John Whiteaker
Strategic Engagement
Principal, North Carolina

U.S. Virgin Islands

Puerto Rico

NSIN

NDAA Sections 222

Objective
NSIN will collaborate with DoD Innovation Partner Organizations, DoD Mission Partners, and Historically Black Colleges and Universities/Minority Serving Institutions (HBCUs/MSIs) to build a skilled and diverse workforce pipeline for the DoD while reducing barriers to entry.

Outcome
Coordinate activities between NSIN, DoD Innovation Partner Organizations, DoD Mission Partners, and HBCUs/MSIs to achieve outreach and outcomes in research, entrepreneurship, and DoD Mission Partner relationships.
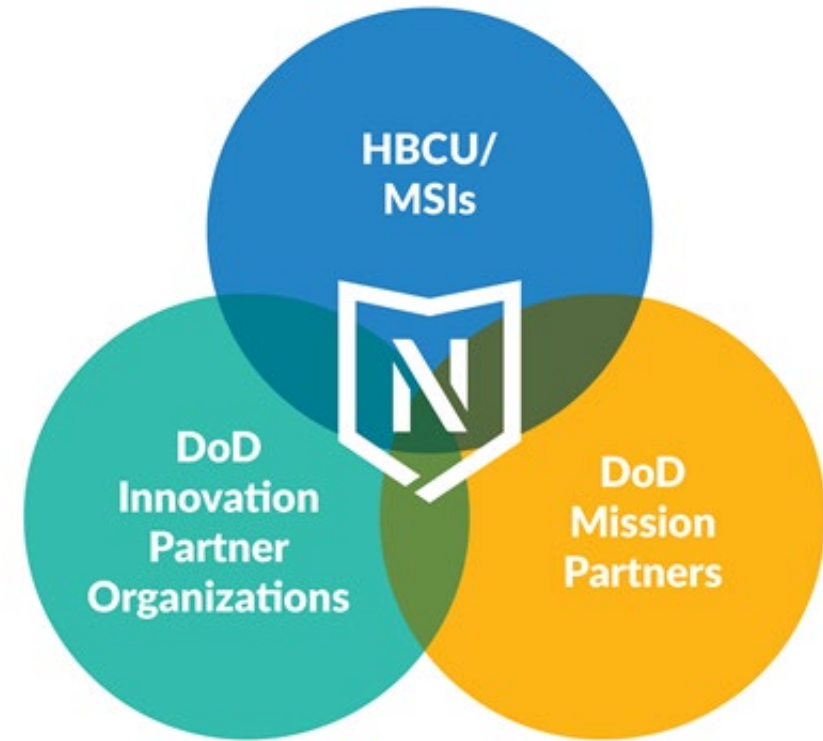
FY22 NDAA Sect. 222 Requirement
Outreach to Historically Black Colleges and Universities and other Minority-Serving Institutions regarding National Security Innovation Network programs that promote entrepreneurship and innovation at institutions of higher education.

NSIN Regional Presence
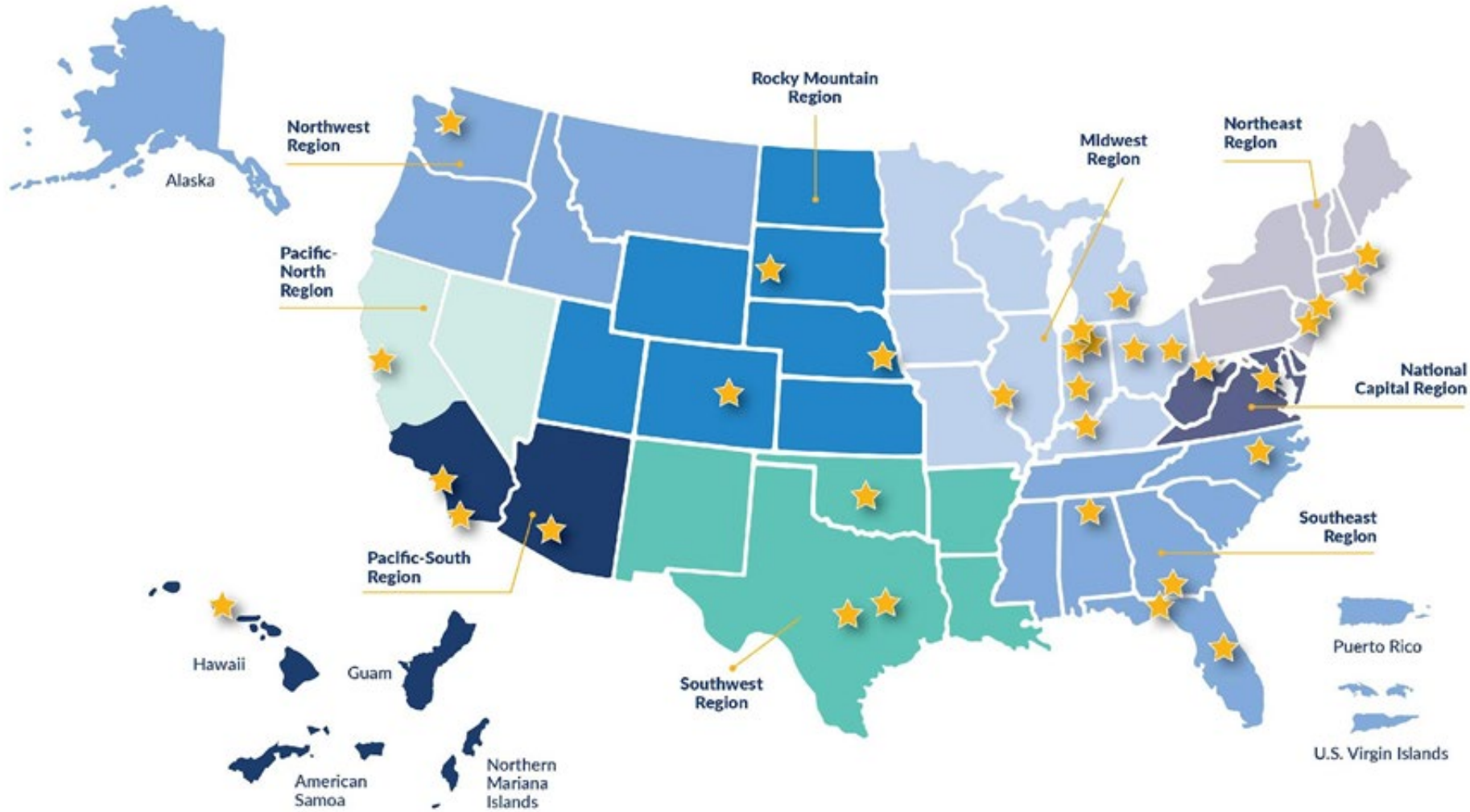
Current NSIN MSI Engagements

	AANAPISI	Asian American Native American Pacific Islander-Serving Institutions
	ANNH	Native Hawaiian-Serving Institutions
	PBI	Predominantly Black Institution
	HBCU	Historically Black Colleges and Universities
	HSI	Hispanic Serving Institutions

#	Name	State	Region	Minority Serving Institute Type	NSIN Engagement (Programs and Activities)
1	University of Minnesota (The U/(U of M)) - Twin Cities	Minnesota	Midwest	AANAPISI	Emerge (Beta)
2	University of Massachusetts-Lowell (UML)	Massachusetts	Northeast	AANAPISI	H4D, H4D
3	University of California-Davis (UC/UCD)	California	Pacific (N)	AANAPISI	H4D, X-Force Fellowship
4	University of California-Santa Barbara (UC/UCSB)	California	Pacific (S)	AANAPISI	X-Force Fellowship, Capstone
5	University of Hawaii at Manoa (UH)	Hawaii	Pacific (S)	AANAPISI & ANNH	H4D, Experts, Hirethon, X-Force Fellowship, Emerge (Beta), Capstone, Propel
6	University of Illinois-Chicago (UIC)	Illinois	Midwest	AANAPISI & HSI	H4D
7	San Diego State University (SDSU)	California	Pacific (S)	AANAPISI & HSI	Hacks, Hirethon, X-Force Remote (Pilot), Regional Convening Event, H4D, Capstone, X-Force Fellowship, H4D, Capstone
8	California State University-Channel Islands (CSUCI)	California	Pacific (S)	HSI	Capstone
9	Florida Atlantic University (FAU)	Florida	Southeast	HSI	X-Force Fellowship, Capstone
10	Florida International University (FIU)	Florida	Southeast	HSI	H4D
11	University of Central Florida (UCF)	Florida	Southeast	HSI	Regional Pilot, Regional Convening Event, H4D, X-Force Fellowship, Emerge (Beta), Capstone, Challenges
12	Texas A&M University (TAMU)	Texas	Southwest	HSI	Hacks, X-Force Remote (Pilot), H4D, Experts, Capstone, X-Force Fellowship, X-Force Volunteers (Pilot), H4D
13	Florida A&M University (FAMU)	Florida	Southeast	HBCU	Experts, K2 (Pilot), Capstone
14	North Carolina A&T State University (NCA&T)	North Carolina	Southeast	HBCU	Regional Convening Event, Regional Pilot, H4D, Experts, X-Force Fellowship

NSIN

Diversifying the Computing Workforce Through HBCUs

- **Georgia Tech College of Computing will work with HBCUs to offer their Online Masters in Computer Science (OMSCS) to HBCU BSCS students with HBCU on-campus cohort.**

- **University of Central Florida (HSI) and other universities with International Collegiate Programming Contest teams will work with HBCUs to develop competitive computing programs to include access to curriculum.**

NSIN

UCF and FAMU Success Stories

UCF PEO STRI Armaments Robot

Innovation Oasis II, 25 May 2023
EW Virtual Training and Targeting Environment
USARCENT & University of Central Florida (Electronic Enforcers)

CW5 Godfrey, Jessica Lopez, Russell Case, Zackary Zuniga, Liam Etan, Srihan Joginipalli, Adedayo Adebayo

"As Russian E.W. complexes began to be deployed systematically, Ukrainian pilots found that they often had their air-to-ground and air-to-air communications jammed, their navigation equipment suppressed and their radar knocked out."

"Russia's Electronic-Warfare Troops Knocked Out 90 Percent Of Ukraine's Drones" Forbes. Axe, David 24 DEC 22

SOCOM 7th Jungle Uniform Overhaul

Q&A

- Which programs are most interesting to you and why?
- What is the process to introduce NSIN programming into your university?
- How often do you think you could run NSIN programming? (e.g. once a year, fall only…)
- How much assistance from NSIN do you expect for you to successfully run NSIN programming?

NSIN

Please take a moment to fill out the survey and return it to me.

BEVERLY SEAY

---

bseay@nsin.mil | **407-234-7785**

nsin.mil