Hosted by

US Senator Thom Tillis US Senator Ted Budd Fayetteville Technical Community College North Carolina Military Business Center North Carolina Defense Technology Transition Office



Welcome Remarks



Scott Dorney Executive Director North Carolina Military Business Center



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Premier Consulting & Integration

TechOpp Inc.

Wise Investigator LLC



Welcome Remarks



US Senator Thom Tillis North Carolina

- Finance Committee
- Veterans' Affairs Committee
- Banking, Housing & Urban Affairs Committee
- Judiciary Committee





- Armed Services Committee
- Commerce, Science &
 Transportation Committee
- Health, Education, Labor and Pensions Committee
- Small Business and
 Entrepreneurship Committee

Video Remarks

Video Remarks



Orientation

Bob Burton

Director North Carolina Defense Technology Transition Office



DEFTECH Overview Brief





DEFTECH.nc.gov

CONNECTING MILITARY AND BUSINESS

S'24 FEDERAL TECHNOLOGY SYMPOSIUM

EMPOWERING INNOVATION,

FTS '24 SECURING THE FUTURE

FTS '24







North Carolina Defense Technology Transition Office NC DEFTECH

DEFTECH Who We Are:

- Vision: North Carolina is the <u>*"Frontline of the Future,"*</u> supporting the Nation's defense and homeland security to <u>provide technological overmatch</u> in a changing Joint and Multi-Domain operational environment.
- **Mission**: DEFTECH <u>enables</u> the NC Innovation Ecosystem to <u>address complex national</u> <u>security problems</u> through Technology Transition.
- **Purpose**: Increase National Security capabilities and strengthen the Defense Industrial Base (DIB) by cultivating innovation and positioning the NC innovation ecosystem to pursue economic opportunities.
- **Core Values**: Communication, Compliance, Customer Satisfaction, Ethics, Fairness, Innovation, Integrity, Mutual Respect, Quality, and Teamwork.

DEFTECH About Us: DEFTECH is a state-funded North Carolina Military Business Center entity. DEFTECH is a unique combat multiplier that leverages industrial capacity statewide and directly drives private sector innovation, research, and development to DoD, federal agencies, and major military commands worldwide.

Contact us:

- **Bob Burton | DEFTECH Director |** C: 910-824-9609 | Email: burtonr@ncmbc.us
- TJ Gilroy | DEFTECH BDP/Program Manager | C: 910-638-4489 | gilroyt@ncmbc.us



DEFTECH: Catalyzing Defense Innovation: <u>https://deftech.nc.gov/</u>



DEFTECH Value Proposition:

- **DEFTECH** provides *education*, *outreach*, and *liaison* between government technology offices and the NC innovation ecosystem.
- **DEFTECH** assists innovators with technologies of significant use to the operational military and/or first responder communities to transition from a science and technology or commercial off-the-shelf (COTs) innovation into a government-funded prototype.
- **DEFTECH** provides assistance to technologists to pursue S&T grants, SBIRs, and STTRs.





S 24 EDERAL TECHNOLOGY SYMPOSIUM EMPOWERING INNOVATION,

Bob Burton DEFTECH Director C: 910-824-9609 E: <u>burtonr@ncmbc.us</u>



NG THE

JAYCIE BEAM
Program Support Specialist, DEFTECH



Todd Ferry DEFTECH Program Manager C: 252-721-1775 E: <u>ferryt@ncmbc.us</u>



Morning Keynote Remarks



Jeffrey A. "Jeff" Thomas Director, Science & Technology Integration US Army Combat Capabilities Development Command



Driving Strategic Modernization to Innovation Opportunities

- Chris Rabassi, Small Business Programs, Marine Corps Installations East
- Lieutenant Colonel Anthony 'Wedge' Bunker, Branch Chief, AFWERX, a technology directorate of the Air Force Research Laboratory (AFRL)
- Ron McNeal, SVIP Transition Director, DHS Science & Technology Directorate
- Beverly Seay, Southeast Regional Director, National Security Innovation Network (NSIN)

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Marine Corps Installations East (MCI East) Small Business Program



	CI East	Mission
Marine Corps Installations East Bases Jacksonville, NC (Camp Lejeune, Ma Havelock, NC (Marine Corps Air Statis Beaufort, SC (Marine Corps Air Static Albany, GA (Marine Corps Logistics E Jacksonville, FL (Blount Island Comm	and Stations: ine Corps Air Station New River) on Cherry Point) n Beaufort) ase, Albany) and)	The mission of the Marine Corps East Small Business Program: (1) provide <u>fundamental information</u> to assist businesses in being <u>eligible</u> <u>and competitive</u> for Department of Defense contracts, (2) ensure compliance with Federal Acquisition Part 19 and other applicable small business regulations.
Contracting Authority/Common Requirements <u>Authority.</u> The MCI East Regional Contracting Office (RCO) has the contracting authority for general supplies and services (not construction, major weapon systems, or supplies/services designated to other agencies) Most Common Requirements (Small Business Opportunities):		Other Contracting Offices
		 Marine Corps Systems Command: Enterprise-Wide Information Technology, Major Weapon Systems, Individual Clothing and Equipment Marine Corps Logistics Command: Logistics Information Technology Systems, Logistics Equipment and Tools, Logistics/Maintenance Services Marine Corps Special Operations Command: General Supplies/Services
	siness Opportunities):	Systems, Logistics Equipment and Tools, Logistics/Maintenance Services Marine Corps Special Operations Command: General Supplies/Services
Supplies	siness Opportunities): Services	Systems, Logistics Equipment and Tools, Logistics/Maintenance Services Marine Corps Special Operations Command: General Supplies/Services
Supplies Administrative Telecommunication LP Gas Chemicals Software (Licenses/Existing Systems Facilities Related (Pumps, Boilers)	ssiness Opportunities): Services Staff Support Base Access Office Furniture Fire Extinguisher Servicing Appliance Repair Part Washers Port-A-Johns	 Systems, Logistics Equipment and Tools, Logistics/Maintenance Services Marine Corps Special Operations Command: General Supplies/Services Marine Corps Community Services: Food Services, Entertainment, Family and Individual Marine Support Services Marine Corps Exchange: Retail Items (centrally managed) Defense Commissary Agency: Groceries-all types (centrally managed) Naval Facilities Engineering Systems Command: Construction

Point of Contact: Chris Rabassi, 910-450-5549, chris.rabassi@usmc.mil

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A F W E R X | SPACEWERX

MISSION

AFWERX accelerates agile and affordable capability transitions by teaming leaders in innovative technology with Airman and Guardian talent.

VISION

Forge an innovation ecosystem that delivers disruptive Air & Space capabilities.

MANTRA

Unleashing American Ingenuity

AFWERX: WHO WE ARE







Ser.



A F W E R X SPACEWERX

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AFWERX: WHERE WE ARE







3



Distribution A. Approved for public release; distribution unlimited. AFRL-2023-4555

AFWERX / SPACEWERX 3.0 OVERVIEW



5





SPARK CONNECTIONS

Empowering Innovators, Accelerating Results

AFSOC

VUSSF AFCENT ANG AETC USAFE AFGSC AMC ACC

AFMC

PACAF

Global Spark Network



CONNECT

Build, empower and mobilize innovation networks

DEVELOP

Develop DAF innovators through curriculum and experience

SUPPORT

Support DAF innovators through facilitation and advocacy

Unparalleled access to and trust with DAF Innovators - 108 base-level cells, every MAJCOM, ~3,000 augmentees







VENTURES OPPORTUNITIES

PHASE I

3

Feasibility Study Open & Specific Topics

OPEN TOPIC

PHASE II

Open, Specific & Direct to

Phase II (D2P2) Topics

Prototype

- Up to \$75K per award (\$110K for STTR)
- 3 month period of performance
- ~700 awards per year
- "Open door for innovation"

SPECIFIC TOPIC

- Up to \$180K per award
- 6 month period of performance
- ~300 awards per year
- Built in Air Force Customer



OPEN TOPIC

- Up to \$1.25M per award (\$1.8M for STTR)
- Up to 21 month period of performance
- ~350 awards per year
- Customer Memorandum required
- Matched funding encouraged
- D2P2 opportunity if customer is already known and Customer Memorandum is signed

SPECIFIC TOPIC

- Up to \$1.8M per initial award
- Up to 24 month period of performance
- ~200 awards per year
- Built in Air Force Customer
- D2P2 opportunities

*Cost base max and period of performance are determined at the topic level and can be found within the solicitation instructions.

STRATFI/TACFI

Strategic Funding Increase (STRATFI) and Tactical Funding Increase (TACFI) Program

- Notice of Opportunity
- TACFI \$375K \$1.9M SBIR/STTR funds
- STRATFI \$3M \$15M SBIR/STTR funds
- Defense only or dual use matching options
- Private Investor Opportunities



• Continuation, derivation, or extension of SBIR/STTR Phase I, II or STRATFI/TACFI work

 Contract with partnering US Government customer
 Utilizes non-SBIR funds

Λ F W \equiv R X





PRIME PROGRAMS

AGILITY PRIME

Hybrid/Electric Vertical Takeoff and Landing (eVTOL) Aircraft

AUTONOMY PRIME

Evaluate, iterate, and mature emerging mission and applied autonomy technologies into fielded capabilities

ORBITAL PRIME

In-space Servicing, Assembly, and Manufacturing (ISAM)

INTEGRATION PRIME

Leveraging industry software integration capabilities for DAF mission thread needs

DBC

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158C1

C684P

53D9

CONNECT AND COLLABORATE

Looking for ... Novel Technologies? Defense Innovation?

IGNITE is the platform where **Defense Users** and Small Businesses connect and collaborate to Unleash American Ingenuity. Look it up in IGNITE!



A F W E R X SPACEWERX

CONNECT WITH US



afwerx.com



contact us



spacewerx.us

Questions?



Driving Strategic Modernization to Innovation Opportunities

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U.S. Department of Homeland Security | Science and Technology Directorate

- Department's Science Advisor and Research and Development arm
- Support tech development for the 8 major components and first responders
- S&T's Frontier Campaigns
 - Passenger Experience in Transportation Security
 - Exploiting Data to Disrupt Transnational Organized Crime
 - Applied Technology for a Border of the Future
- Workforce of the future
 - DHS is hosting an in-person DHS Veterans Career Fair on August 13
 - Joint Base Myer-Henderson Hall in Fort Myer, VA
 - Open to all transitioning active duty and former service members





INNOVATING THROUGH TECHNICAL CAPABILITIES



COLLABORATING WITH A DIVERSE RANGE OF PARTNERS



DEVELOPING THE WORKFORCE OF THE FUTURE

U.S. Department of Homeland Security | Science and Technology Directorate

Office of Industry Partnerships - Engage industry and facilitate partnerships with private sector

- Silicon Valley Innovation Program
 - Reaches innovation communities across the nation and the world to harness commercial R&D for DHS applications
 - > Upcoming topics
 - Software Security Open Source (Aug 24)
 - Extended Reality Training systems for First Responders (Nov 24)
- Small Business Innovation Research
 - Provides funding to small businesses for concepts and prototypes that are innovative and provide solutions to specific homeland security challenges
 - > Next round of topics (25.1) set to be announced in 1st QTR FY 25
- Long Range Broad Agency Announcement
 - Standing invitation to scientific and technical communities to submit proposals for open topics that address priority homeland security needs
 - > 23 Open topics
 - Industry Day Event planned for 21 Aug



[SCIENCE AND TECHNOLOGY DIRECTORATE]

Engage with us:



S&T Partnership Connections and Program Mailing List Sign-up: https://bit.ly/STListSignUp



scitech.dhs.gov



SandT.Innovation@hq.dhs.gov



ron.mcneal@hq.dhs.gov





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Connect With Us

Beverly Seay

Southeast Regional Director National Security Innovation Network U.S. Department of Defense 407-234-7785 | <u>bseay@nsin.mil</u>

Partnering for Strategic Impact

DIU ensures the Department can leverage the best of commercial technology and innovation at speed and scale to deter major conflict or win if forced to fight

- **1. Focus:** Focus on the most critical capability gaps and embed with the warfighter to do so.
- 2. Scale: Partner at every level with DoD's "engines of scale."
- **3. Innovation Community:** Catalyze the DoD's innovation entities into a community of impact.
- 4. Commercial Leverage: Take the partnership with the commercial tech sector to a new level.
- 5. International Partnership: Realize the enormous potential of tech partnership with allies and partners.
- 6. Trust/Momentum: Build trust and momentum required for speed and scale.
- 7. Team: Retool DIU to support all of the above.
- 8. Advise: Provide the Secretary and Deputy Secretary with world class dual fluency advice.





A Unified Onramp for Talent and Commercial Technology



Accelerate targeted dual-use hardware

Catalyze private investment by de-risking development

Signal potential DoD demand

Production & Scaling

Transition from prototypes to fielded capabilities through follow-on, multi-year contracts

Change CONOPS

Prototyping

Provide companies early revenue

Prototype and transition commercial tech to DoD within 12 24 months

Focus on strategically-aligned projects




DIU's Commercial Solutions Opening

UNIQUE PROJECT LIFECYCLE - Fast & competitive

Problem Curation & Diligence		 Receive, understand, and evaluate DoD partner problem Confirm commercial market exists to address problem 	No Requirements	Approximate Number of Vendors Participating
Commercia I Solutions Opening CSO	Phase 1	 Solicit digital proposals in response to a problem statement 	10 business days	20 110
	Phase 2	 Evaluate proposals and invite a short list of bidders to pitch 	60 90 days to contract award (goal) 1 5	5 20
	Phase 3	 Select contract awardee/s and negotiate agreement 		15
Prototyping		 Execute prototype project 	12 24 months	1 5
Transition		 Award non-competitive agreement to successful performers Deliver & scale solution to transition partner/s 	No Recompete FAR Not Req'd	1 2





DIU Portfolios At-a-Glance









Break

Networking and Refreshments on the Exhibit Floor



Joint Force and Installation Modernization Shark Tank

Archaius, Inc.

Artificially Digital

Smart Material Solutions, Inc.

WISER Systems



Assured PNT for Precision Fires



Archaius Inc. POC: Rick Vosburgh, email: rick@archaius.net mobile: 919-414-9475





Impact and Technical Approach

<u>Technology Readiness Level (TRL)</u>: TRL 5: TRL 7 in 12 months <u>Manufacturing Readiness Level (MRL)</u>: MRL 3

What is the Impact of your Solution?

• SEPA addresses the Army's top priority: reliable precision fires, also supporting kamikaze attack on jammers

What is the Technical Approach?

• Signal-agnostic, deterministic, steering of unique nulls against high power sources of electronic attack

Solution Specifics

How do you solve the problem?

• SEPA will replace CRPA for GPS AJ, implementing deterministic, feedforward control of a novel RF design creating wide, deep nulls that avoid cancelling SOI, as well as jammer direction finding (DF) that survives disruptive jamming, enabling precise counterattack against a jammer – e.g. with a glide bomb as a very low cost GPS-HARM.

Competitive Advantage

• SEPA offers disruptive protection against GPS jamming with a SWAP low enough for sUAS as well as LR-PF, also supporting autonomous kinetic counterattack on jammers. SEPA is covered by granted/pending patents

Performance

End-user payoff/expected operational value/new capability:

• Low SWAP-C assured delivery of munitions will support mission success while reducing cost, as well as supporting new CONOPS

Dual-Use (Commercial /Military) applications :

• US pumping stations along 2.6 million pipeline miles, the national grid's 55K substations and 142K cell towers depend on GPS for synchronization.



Joint Force and Installation Modernization Shark Tank

Archaius, Inc.

Artificially Digital

Smart Material Solutions, Inc.

WISER Systems



Breach Early Alert Security Technology (BEAST)

AI-Powered Cybersecurity: Stay Protected \rightarrow Stay Current \rightarrow Stay Ahead

Ron Berry, CEO | Co-founder | Artificially Digital[™] ron@artificiallydigital.com | + 1 214.682.9558

The military faces mounting Cybersecurity challenges amid evolving technologies and threats.



Military organizations need a robust cybersecurity solution that:

- 1. consolidates and integrates data from various sources into a single, cohesive system.
- 2. enhances threat detection and forecasting accuracy.
- 3. optimizes resource utilization.



Breach Early Alert Security Technology (BEAST) provides an Al-powered breach detection solution for military-grade cybersecurity.



Breach Early Alert Security Technology (BEAST)

Artificially Digital POC: Ron Berry E: ron@artificiallydigital.com

Solution Specifics	Impact and Technical Approach	Performance	
How do we solve the problem? Al-based solution that	Technology Readiness Level (TRL): 7	Payoff/expected operational value/new capability:	
 implements domain-specific algorithms to: 	Manufacturing Readiness Level (MRL): 6	 Improved Network Security Reduction in Security Incidents and 	
 monitor network activity detect anomalies respond in real-time to potential threats. evaluates data in context and automates response and resolution, closing the loop on 	 Solution Impact: real-time AI monitoring swift detection and response. effectively manage threats. reduce security incidents and costs. streamline security operations 	 Costs Streamlined Security Operations Enhanced Operational Efficiency More proactive, resilient, and better prepared to defend against cyber threats. 	
cyber threats.incorporates continuous learning.	 Technical Approach: use AI to continuously monitor 	 Dual-Use applications for the solution: Military and Defense: Secure military communications, cyber defense 	
 Why us? AI, Cybersecurity experience. Patent-Pending AI architecture and algorithms. 	 employ advanced algorithms to identify and address anomalies, ensuring threats are managed effectively. use AI to automate and execute breach resolution. 	 operations, and intelligence agencies. Commercial: Cybersecurity departments in financial institutions, healthcare providers, retailers, and technology companies. 	

In conclusion, leverage the power of AI and secure your network against cyberthreats with Breach Early Alert Security Technology (BEAST).

BEAST empowers organizations to act swiftly against cyberthreats. With BEAST, organizations can:

- 1. Stay Protected \rightarrow Stay Current \rightarrow Stay Ahead
- 2. Meet regulatory requirements and maintain compliance.
- 3. Enhance operational efficiency.

<u>Asks:</u>

- 1. Contact us to learn more: info@artificiallydigital.com
- 2. Share any grant, non-dilutive funding opportunities.
- 3. Introductions to partners.



BEAST, a formidable cyber force. | Your new reality.

Thank You!

UEI	TDPFTMJSJXA3		
CAGE	9VP34		
NAICS	541511 541519 541512 518210 541690		
Site	www.artificiallydigital.com		





Joint Force and Installation Modernization Shark Tank

Archaius, Inc.

Artificially Digital

Smart Material Solutions, Inc.

WISER Systems





Nichole Scott, PhD | nichole@smartmaterialsolutions.com | (919) 521-4443







Advanced Nanomanufacturing to improve Portable Solar Panels and Friend-or-Foe detection.



www.smartmaterialsolutions.com



Solar Energy: Problem Statement









Solar Energy: Plan & Current Status

Technology Readiness Level (TRL): 6 Manufacturing Readiness Level (MRL): 5





Metamaterials: The Concept



Plasmonic metamaterials can enhance, shield, or manipulate infrared light.

Applications include signature management, camouflage, and friend-or-foe detection.

Planned Demo

ID tag that can only be seen by those who know where to look

IR Image what enemy sees

Filtered IR Image what we see



Smart Material Solutions, Inc.



8/6/2024



Metamaterials: Plan & Current Status

Technology Readiness Level (TRL): 4 Manufacturing Readiness Level (MRL): 5





Platform Technology with Many Applications

Clean Energy

Light-trapping, self-cleaning coatings improve solar panels



Plasmonic Metamaterials



Anti-Dust Surfaces



Displays



Anti-reflective, light-diffusing / films, and other display films

8/6/2024

Industry Partner

Advanced Optics



Smart Material Solutions, Inc.

Advanced Wetting

Self-cleaning, anti-microbial, and superhydrophobic surfaces

> Industry Partner

Smart Material Solutions

Seeking feedback, collaborators, and transition partners to better address warfighter needs and rationalize funding for scale up.

Booth 6

Nichole Scott, PhD

VP of Research & Development nichole@smartmaterialsolutions.com (919) 521-4443

www.smartmaterialsolutions.com



Joint Force and Installation Modernization Shark Tank

Archaius, Inc.

Artificially Digital

Smart Material Solutions, Inc.

WISER Systems



SCOUT CARD: WISER SCOUT-LT RFI# DEFTECH-24-1-RFI-01

WISER SYSTEMS POC: Dustin LaTour 703-201-6294 dustin.latour@wisersystems.com

Problem

Technology name, picture, and brief description:

• WISER SCOUT-LT Provides real-time location of personnel or other assets in GPS-Denied environments, with the ability to transmit text-based communications across the network.

What problem do you solve?

• Warfighters face the problem of obtaining the location of team members and friendly forces in GPS-Denied or Degraded environments, to include underground and urban areas. Blue Force and Partner Force tracking is paramount to safety and Joint Force operations on the battlefield.

Impact and Technical Approach

<u>Technology Readiness Level (TRL):</u> TRL-6 <u>Manufacturing Readiness Level (MRL):</u> MRL-7

What is the Impact of your Solution?

• The impact of the WISER SCOUT-LT includes enhanced situational awareness, improves Joint-Force coordination and safety, increases operational efficiency in GPS-Denied or Degraded environments.

What is the Technical Approach?

• WISER Systems patented commercial technology has been modified and enhanced as a Mobile MESH through a SBIR Phase II effort.

Solution Specifics

How do you solve the problem?

WISER SCOUT-LT is a stand-alone ALT-PNT system that creates a mobile MESH network utilizing the information obtained and shared from the other SCOUT-LT's on the network to determine the location of themselves and their neighbors in GPS Denied and Degraded environments. The location information is displayed on the users TAK device, which also allows users to transmit text-based communications across the MESH to other SCOUT-LT devices.

Why you? What makes you different from the competition?

 A one-of-a-kind solution that provides ALT-PNT in GPS denied and degraded environments, while flexible enough to scale to hundreds of devices.

Performance

End-user payoff/expected operational value/new capability:

• The SCOUT-LT is a novel communication innovation that improves the Situational Awareness of the Ground Forces Commander, enhancing operational effectiveness, while increasing safety and decreasing the risk of casualties.

<u>Dual-Use (Commercial / Military) applications for the technology</u> <u>solution:</u>

• Law Enforcement, Firefighting, Border Patrol, Port Security.



Break

Networking and Refreshments on the Exhibit Floor



Lunch and Remarks

Please proceed through the buffet lines so the lunch program can promptly begin.



Tech Protect and Due Diligence Requirements

- Laura Rodgers, Director, Cybersecurity Practice, Secure Computing Institute, NC State University
- Ari Kozlow, Special Agent, U.S. Department of Commerce, Bureau of Industry and Security (BIS), Office of Export Enforcement
- Jim Moore, Legislative Attorney Advisor, Office of Governmental Affairs, United States Patent and Trademark Office

Federal Technology Symposium

Tech Protect and Due Diligence Requirements

Laura Rodgers, NCSU

August 6, 2024

Background

- LMCO: MX and Titan Missile Programs
- GDIT: Military Operations in Urban Terrain (MOUT) Program
- NCMBC: Business Development, CMMC Training
- NCSU: Director of Cybersecurity Practice, Secure Computing Institute, Director of the NC Partnership for Cybersecurity Excellence

Creating a Culture of Security



Cybersecurity is not the responsibility of a person or a department; it is a **VALUE** and *is the responsibility of everyone in the organization.* Leadership sets the culture. If security isn't important to you, it won't be important to your employees.



Requires good communication, and lots of it.



Requires initial and on-going, meaningful training.



Cybersecurity should be important AND urgent – not just to protect DoD data and your intellectual property, but for the security of this country.

Everyone in the same boat, paddling in the same direction.







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UNITED STATES PATENT AND TRADEMARK OFFICE



Access inventor and entrepreneur resources

 USPTO's hub for resources and information for inventors, entrepreneurs, and small businesses.



uspto.gov/inventors

72
Access resources for startups



The USPTO's hub for startup resources can help you address the intellectual property (IP) challenges specific to startups, including securing funding and guarding against costly infringement litigation.

Here you will find practical information and useful tools, available from a wide variety of government agencies, including the <u>Small Business Administration</u> (<u>SBA</u>), , the <u>Minority Business Development Administration</u> (<u>MBDA</u>), , and <u>Small Business Development Centers</u> (<u>SBDCs</u>), . These agencies can assist you at every stage of growing your business, from your initial idea to entering the global marketplace.



Protect IP rights

Guard your valuable work

You need to protect your IP if you want to succeed and attract investors.

- > Access inventor and entrepreneur resources
- > Protect your IP in the U.S.
- > Protect your IP abroad
- > Fight costly counterfeits
 > Access IP training modules in five languages
- Access resources for small and medium-sized enterprises

×2,

Plan for success

Do your homework

Explore free government resources that can help you create a foundation for business success.

- Learn the steps to start your business I
- > Find a MBDA Center in your state I
- > Get free business counseling near you

(3)

Find funding

Access capital

There are many sources of startup funding, including grants, loans, and different kinds of investors.

- > Choose the right funding 🗹
- Search federal grants
 Learn about America's Seed
- Fund 🖸
- > Access SBA loans

5

Engage experts

Get advice and assistance

Find mentors, partnerships, and technological assistance in your industry. Learn to navigate the domestic and international IP markets.

- > Get free advice from business experts at SCORE ^C
- Get help with manufacturing your technology ^[2]
- > Learn about IP protection in other countries
- > Utilize IP attachés to navigate
- the global market



uspto.gov/startups

Get information about patents and trademarks

Inventor Assistance Center

- Provides general information about the patent examination policy and procedure.
- 8:30 a.m.- 8 p.m. ET, Monday through Friday
- (571) 272-1000
- (800) 786-9199 (press 2)
- <u>uspto.gov/InventorAssistance</u>

Trademark Assistance Center

- Provides general information about the trademark registration process.
- 8:30 a.m. 8 p.m. ET, Monday through Friday
- (571) 272-9250
- (800) 786-9199 (press 1)
- <u>uspto.gov/TrademarkAssistance</u>





Thank you!

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Eastern Regional Outreach Office

www.uspto.gov

EasternRegionalOutreach Office@uspto.gov



Federal Technology SymposiumAugust 6, 2024Fayetteville, North Carolina

Break

Networking and Refreshments on the Exhibit Floor



Workforce Development: Preparing the Next Generation of Innovators

- Rhiannon Holley, Department Chair, Systems Security & Analysis, Fayetteville Technical Community College (FTCC)
- Sherine O. Obare, PhD, Vice Chancellor for Research and Engagement, Professor, Joint School of Nanoscience and Nanoengineering, University of North Carolina at Greensboro
- Chris Crumbly, Executive Director, The Institute for Digital Enterprise Advancement (IDEA)
- Jason Thompson, CEO, Veterans Engineering, Training, & Services (VETS, LLC.)



Workforce Development Panel: Preparing the Next Generation of Innovators

Rhiannon Holley, Department Chair, Systems Security & Analysis

Fayetteville Technical Community College

Is Workforce Development an Issue for Future Innovators?

"Innovation happens when people are free to think, experiment and speculate."

MATT RIDLEY

Critical for Innovation: Workforce development is essential to equip future innovators with the skills and adaptability needed for a dynamic job market = Economic Impact

- Technological Advancements: Rapid advancements require continuous skill updates to stay relevant in the job market.
 - Lifelong Learning: Workforce development must foster a culture of lifelong learning to adapt to changing industry demands.
- Changing Job Market Dynamics
 - Automation and AI: Many traditional jobs are being automated, while new roles are being created that require a different set of skills.



What Are the Issues We Face?

- Faculty: Creating pathways for industry professionals to train the next workforce generation
- **Bachelor-level Bias**: Despite extensive technical training, the degree often limits potential.
- IT in the High Schools: How can they pursue careers if they do not know about them?
- Level of student experiences: HS, and most college students, lack real-world experience to land jobs.
- The transitional struggle: The transition from service to student isn't as easy as an application.



What solutions are available?

- CAE DoD CySP to provide pathways
- Eliminate financial barriers
- Carolina Cyber Network (CCN)

CCN Grants for Certification
 NC CoG – State/County talent shortage

Scholarships for military spouses



Recommendations to Bridge the Gap

- More internship/apprenticeship opportunities for 2-year students in the private/public sector
- More positions accepting 'true entry level' talent.
- ➢ Diversity and Inclusion
 - Encouraging diverse participation in STEM fields can lead to a more innovative and inclusive workforce.
 - Equity in Opportunities: Ensuring equal access to education and career opportunities is vital for tapping into the full potential of the workforce.

Education for Life





Workforce Development: Preparing the Next Generation of Innovators

- Rhiannon Holley, Department Chair, Systems Security & Analysis, Fayetteville Technical Community College (FTCC)
- Sherine O. Obare, PhD, Vice Chancellor for Research and Engagement, Professor, Joint School of Nanoscience and Nanoengineering, University of North Carolina at Greensboro
- Chris Crumbly, Executive Director, The Institute for Digital Enterprise Advancement (IDEA)
- Jason Thompson, CEO, Veterans Engineering, Training, & Services (VETS, LLC.)

Inspiring Students for the Future Workforce

Sherine Obare, PhD

Vice Chancellor for Research and Engagement University of North Carolina at Greensboro

1 1



Workforce Development Needs

Understanding Employee (Industry/Government) Needs



ICONS

Innovation Collaborative Laboratory for Nanotechnologies to Empower the Future Soldier



The <u>U.S. Army Combat Capabilities Development Command</u>, known as <u>DEVCOM</u>, is the Army's technology leader and largest technology developer. DEVCOM ensures the dominance of Army capabilities by creating, integrating and delivering technologyenabled solutions to our Soldiers. A \$1.05M Investment through a Cooperative Agreement has been made to establish a Joint Collaborative Lab for Soldier protection.

Projects include:

- Basic science to improve materials used in solider helmets to make them lighter and stronger.
- Chemical and biological sensors to detect threats in food and water to be consumed by the soldier.
- Advanced materials to reduce the weight of items carried by soldiers.



NextGen Promise - Strategy



ICONS Engagement

- Visit to the DEVCOM Soldier Center in the Summers.
- Students spent time meeting with collaborators and strengthening partnerships.
- Students presented their research work at the DEVCOM Soldier Center





Biological and electronic clean rooms housing tools for device assembly and new experimental fabrication methods support training researchers in applications ranging from medicine and biology to fundamental physics and astronomy.

Key Features and Opportunities: Research Facilities





State-of-the-art research facilities make it possible for faculty and students to conduct cutting edge research and innovation. The facilities are accessible to local and regional companies to conduct research and development.

Creating the Workforce



From High School students to doctoral students, universities are working collaboratively to identify needs and fill workforce gaps



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IDEA MBSE Modelers **Chris Crumbly Executive Director Systems Engineering Technology** chris.crumbly@idea-set.org DEFTECH 256-808-5651 **Solution Specifics Problem** How do you solve the problem? WORKFORCE: Model-Based Systems Engineering (MBSE): IDEA developed a course for SET modeled after the CAD Technician degrees MBSE shortens the DDT&E life-cycle but the supply of modelers does not popularized in the 1980's meet the growing demand. The OSD office of Industrial Policy funded IDEA to develop the courses and What problem do you solve? deploy it to DDT&E communities across the nation To accelerate the adoption of digital engineering, IDEA offers a 2-year course for Systems Engineering Technology deployable to any community college. Expansion of SET led to professional education courses and university electives and certificates MBSE is now required by all future DoD major acquisitions. SET Modelers can extend the reach of experienced systems engineers. **Impact and Technical Approach** Performance Technology Readiness Level (TRL): 9 | SET classes are ready to deploy and End-user payoff/expected operational value/new capability: SET extends have been proven over 3 years at Calhoun Community College in Huntsville the reach of systems engineers. Digital transformation is coming and SET

What is the Impact of your Solution?

SET allows for STEM pathways after high school, reskilling, and transitioning veterans. Graduates are earning a good salary of \$60-\$80K. Industry value proposition is \$35/hr modeler assisting a \$135/hr engineer.

The Technical Approach: IDEA offers membership to the SET Academy to deploy all course work, charts, examples, homework, quizzes and can offer distance instruction if required

modelers accelerate adoption at a reasonable cost. This new pathway can be a multiplier to community college enrollment and a feeder to universities.

Dual-Use (Commercial / Military) applications for the technology

solution: Transitioning veterans can enter the engineering technology field quickly using skills from their military experience.



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VETS, LLC POC: Jason Thompson jason.thompson@vetsllc.org (931) 247-9816

Model-Based Systems Engineering

<u>Problem</u>

Model-Based Systems Engineering (MBSE):

• MBSE provides a single tool to capture stakeholder needs and provides uninterrupted traceability to the low-level design engineers. It additionally provides fully integrated review capability to stakeholders.

What problem do you solve?

• Communication between teams and establishing a single authoritative source of truth (ASoT) for systems development, integration & test enabling identification of design gaps earlier saving programs cost & schedule.

Impact and Technical Approach

HODELICA

FTA

<u>Technology Readiness Level (TRL):</u> 9 <u>Manufacturing Readiness Level (MRL):</u> n/a

What is the Impact of your Solution?

• Accelerate the design/review cycle and improve visibility of all aspects of system design

Technical Approach

Current MBSE grew out of the convergent efforts of the SW communities UML & the defense communities DODAF viewpoints.

Solution Specifics

How do you solve the problem?

• MBSE provides common viewpoints and ensures consistency across all program levels. The system model enables integration with other engineering tools to form a digital thread/twin.

HTML

Why VETS, LLC

The VETS team has a variety of experience, from working with weapon systems during prior service to all aspects of system development, integration, test and manufacturing.

Performance

End-user payoff/expected operational value/new capability:

• The Warfighter team can expect to have an easier time reviewing system designs from contractors, as well as clearly articulate their needs in future contract work

Dual-Use (Commercial / Military) applications for the technology <u>solution:</u>

• MBSE is in widespread use in the aerospace field outside of defense. I believe Airbus still has one of the largest single models. Its slowly catching on other fields.



Federal Technology SymposiumAugust 6, 2024Fayetteville, North Carolina

Afternoon Keynote Remarks



Lieutenant General Christopher Donahue

Commanding General and Senior Mission Commander XVIII Airborne Corps and Fort Liberty, North Carolina



Operational Integration of Tactical Innovation with Strategic Requirements

Colonel Randall Linnemann, Chief Innovation Officer, XVIII Airborne Corps



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Adjourn

Your Feedback is valuable to us! Please fill out this quick form.

