

NAVSEA Bids Farewell to Longest Serving Civil Servant in DoD

NAVSEA OFFICE OF CORPORATE COMMUNICATIONS PUBLIC AFFAIRS (APRIL 7, 2020)

WASHINGTON—Sarkis Tatigian, who began his Navy career at the age of 19 during the Second World War, passed away earlier this week, leaving behind a nearly 78-year legacy of service to the Department of Defense.

At the time of his death, Tatigian, the longest serving civil servant in the history of the DoD, was serving as Naval Sea Systems Command's (NAVSEA) Small Business Advocate.

"Mr. Tatigian truly lived a life dedicated to advocacy and the service of others," said NAVSEA Executive Director James Smerchansky. "His decades of work oversaw the expansion of the small business industrial base and more than \$100 billion in contracts awarded to diverse, small businesses. As we bid fair winds and following seas to Mr. Tatigian, NAVSEA will greatly miss his presence, but we will never forget the positive impact he made on this command and the entire U.S. Navy."

Tatigian's civilian career with the Navy began in July 1942 as a junior radio inspector at the naval aircraft factory in the Philadelphia Navy Yard and the Navy Office of Inspector of Naval Aircraft in Linden, New Jersey. He left his position as an inspector in March 1943 and entered the uniformed Navy as an active-duty Sailor. In June 1944, he started working as an aviation electronics technician's mate in the development of the Navy's first guided anti-ship munition, the ASM-N-2 "BAT" glide bomb, which later became an operational weapon used by the fleet at the end of World War II.

In 1946, he left active duty and returned to the Navy department and civil service with the Bureau of Ordnance in Washington, working on the Navy's first generation of guided-missile systems. From there, he moved on to his life's passion, helping small businesses as a small business analyst for the bureau. While in the position, Tatigian developed a small business mobile exhibit that traveled coast-to-coast, visiting all state capitals and cities with populations exceeding 400,000. For his organizational efforts on the exhibit, Tatigian received Congressional recognition.

In June 1979, Tatigian was appointed NAVSEA's associate director of the Small and Disadvantaged Business Utilization Office. The office was eventually renamed the Small Business Program Office, where he continued to serve as an advocate for small business.

In 2012, it was announced during a ceremony honoring Tatigian's 70 years of service that the Navy's Office of Business



WASHINGTON (Sept. 26, 2017) Sarkis Tatigian delivers remarks during a celebration of his 75 years of federal service at the Washington Navy Yard. Tatigian enlisted in the Navy in 1943 and currently serves as the associate director of small business programs at Naval Sea Systems Command (NAVSEA).

U.S. Navy photo by Mass Communication Specialist 2nd Class Jackie Hart

Opportunities Director's Award would be renamed the Sarkis Tatigian Small Business Award. The award recognizes outstanding performance by a field activity in creating an organizational climate resulting in the advancement of small business opportunity through exceptionally-managed small business programs and challenging initiatives and who has made significant contributions to the command and the Department of Navy small business program. Because of his contributions, Tatigian even won the award that bears his name.

In 2017, NAVSEA celebrated Tatigian's 75th anniversary of civil service. A unique service pin was specially made to mark the occasion as one celebrating that many years of service had never been given before to an employee.

Tatigian, upon his 75th anniversary, explained why he was driven to continue to come to work each day at NAVSEA.

"I was retirement-eligible in October 1973," said Tatigian. "But when you don't have something to wake up for, that's when



An F-16 Fighting Falcon from the 177th Fighter Wing, New Jersey Air National Guard, Atlantic City, sits in storage at the 309th Aerospace Maintenance and Regeneration Group, Davis-Monthan Air Force Base, Arizona, June 6, 2016. Landing gear from two F-16 aircraft that were in storage at AMARG are being used along with parts from other aircraft in the new NASA X-59 QueSST experimental sonic boom test aircraft.

U.S. Air Force photo by Alex R. Lloyd

you start to decline. And, if you love what you do and derive a sense of personal worthiness, it's not really work."

For more news from Naval Sea Systems Command, visit <http://www.navy.mil/local/navsea/>.

A QueSST for Speed and Parts: 309th AMARG's Role in Quiet Supersonic Technology Development

OGDEN AIR LOGISTICS COMPLEX (APRIL 7, 2020)

Alex R. Lloyd

HILL AIR FORCE BASE, Utah—Recall when traveling faster than the speed of sound was possible aboard the supersonic airliner called the *Concorde*, flying 3,459 miles from New York to London in around three hours.

Those days might not be gone forever if NASA, Lockheed Martin, and the 309th Aerospace Maintenance and Regeneration Group located at Davis-Monthan Air Force Base, Arizona, have anything to say about it.

What has changed in the past few years is the possibility to lessen or even eliminate the sonic boom that comes with flying supersonic, and NASA and Lockheed Martin are building an experimental aircraft known as the X-59 Quiet Supersonic Transport (QueSST) test aircraft to prove it.

"The X-59 is designed so that, as it flies faster than sound, any sonic booms that reach the ground are so quiet they can barely be heard, if at all. That's what's new here," said Craig Nickol, NASA's X-59 project manager.

To keep from designing all new components for a one-of-a-kind aircraft and to reduce costs as well as time to build it, NASA is reusing parts from military aircraft in long-term storage at the 309th AMARG, often referred to as the "The Boneyard."

Geographically separated, but part of the Ogden Air Logistics Complex at Hill Air Force Base, Utah, the 309th AMARG's true mission is greater than its often-referred-to nickname. In reality it's "America's Air Power Reservoir."

This reservoir is home for more than 3,000 aircraft from both Department of Defense organizations and other U. S. government agencies stored for both long and short terms.

AMARG's 577th Commodities and Reclamation Squadron's mission is to reclaim parts from aircraft in storage for use. In total, the unit has sourced and shipped 9,723 parts valued at more than \$683 million dollars from Oct. 1, 2018, to March 31, 2020.

Aircraft that come to the Ogden ALC for depot maintenance at Hill AFB also receive some of these parts as do aircraft performing critical missions around the world.

For the X-59 effort, repurposed parts provided by AMARG include landing gear from two Air Force F-16C, Block 25, Fighting Falcon fighter aircraft and cockpit canopies from two NASA T-38 Talon aircraft.

AMARG shipped the entire fuselage from both T-38 aircraft and the two F-16 aircraft by ground.

In order to prepare the aircraft for shipping, AMARG removed six engines, wings and flight control surfaces, constructed shipping decks and crates for all the components, removed and itemized all explosives from the aircraft, prepared aircraft records and finally, loaded them on semi-trucks.

"For 74 years, from post-World War II to present, the 309th Aerospace Maintenance and Regeneration Group has preserved the best of America's military aerospace assets for repurposing," said Col. Jennifer Barnard, 309th AMARG commander. "This current NASA project is a unique example of reutilizing valuable air power assets in the development of future aerospace technologies."

To learn more about the QueSST project and watch a short video on its ongoing construction, visit <https://www.nasa.gov/aero/nasa-experimental-supersonic-aircraft-x-59-quesst>.

Office of Naval Research Awards \$14 Million in Grants to 2020 Young Investigators

OFFICE OF NAVAL RESEARCH PUBLIC AFFAIRS (APRIL 8, 2020)

ARLINGTON, Va.—The Office of Naval Research (ONR) recognized awardees of the 2020 Young Investigator Program (YIP) April 7.

Twenty-six recipients will share \$14 million in funding to conduct challenging scientific research that will benefit the Navy and the U.S. Marine Corps.

"It's no secret that our nation is in the midst of a great power competition," said Chief of Naval Research Rear Adm. David

Hahn. "To maintain a military edge over our adversaries, it's critical that we attract the best and brightest scientists and engineers from across academia to address naval warfighting challenges. The Young Investigator Program does just that, and I'm honored to announce the recipients for 2020."

The ONR YIP is a highly competitive early-career award program in which academic achievement and potential for scientific breakthrough are key factors in the evaluation process. The final candidates were chosen from more than 275 applicants—all of whom are college and university faculty and obtained a Ph.D. within the past seven years.

Awardees represent 19 academic institutions nationwide, supporting naval-relevant research including autonomy, wireless communications, energetics, power and energy, machine learning, artificial intelligence, sensors, weather forecasting, bio-tissue repair, hypersonics, metamaterials, and nanomaterials.

The YIP awards support laboratory equipment, graduate student stipends and scholarships, and other expenses critical to the planned research. Typical grants range from \$510,000 to \$750,000 over a three-year period.

Established in 1985, the ONR YIP is one of the nation's oldest and most selective basic-research, early-career awards in science and technology. Its purpose is to fund tenure-track academic researchers, or equivalent, whose scientific pursuits show outstanding promise for supporting the Department of Defense, while also promoting their professional development.

View the list of 2020 Office of Naval Research Young Investigator awardees at <https://www.onr.navy.mil/Education-Outreach/Sponsored-Research/YIP/2020-young-investigators>.

For more news from Office of Naval Research, visit <http://www.navy.mil/local/onr/>.

Partnership Expansion Offers Unprecedented Support for Phase I SBIR Awardees

66TH AIR BASE GROUP PUBLIC AFFAIRS (APRIL 8, 2020)

Jessica Casserly

HANSCOM AIR FORCE BASE, Mass.—A recently signed contract between two Hanscom directorates, the Air Force Research Laboratory and MassChallenge, a network of zero-equity startup accelerators, offers unique support for innovative startups with the potential to solve national security challenges.

The two-year pilot project is designed to increase non-traditional participation in Small Business Innovation Research program opportunities. The Air Force and MassChallenge will select 10

startups from a highly competitive pool of 65 to participate in The U.S. Air Force Lab with MassChallenge, an initiative that will help de-risk and grow cutting edge technologies and startups that are addressing national security challenges.

More than 30 industry experts and established entrepreneurs selected by MassChallenge will virtually judge the competition, basing their final decisions on each startup's potential to innovate at speed and tackle challenges related to national security.

"When startups receive the right support at the right time, they can have a transformative impact on the world," said Siobhan Dullea, CEO of MassChallenge. "With MassChallenge's decade of experience connecting startups to the critical resources and tools they need to be successful, we are proud to deepen our partnership with the Air Force Research Lab, [Program Executive Officer] Digital, PEO for Command, Control, Communications, Intelligence and Networks [C3I&N], and the Griffiss Institute to help de-risk and grow the next generation of national security startups."

Once the virtual judging is completed, the selected cohort will move into an incubation phase in which they'll refine their products and business models. MassChallenge will provide this exclusive group of SBIR Phase I-awarded startups with essential, customized resources and connections, with the goal of helping them transition to their Phase II awards at a higher rate.

The partnership will also grow the Banshee program and provide training and engagement opportunities for Airmen and entrepreneurs.

Steve Wert, PEO Digital, said he's excited to take Hanscom's partnership with MassChallenge to the next level.

"The Phase I SBIR accelerator program will serve as an excellent experiment in deliberate startup development, targeting the companies that the Air Force has already awarded to work with program offices on valid warfighter problem sets," he said. "We will be able to focus on delivering novel technologies to the field, while the small businesses we work with benefit from the mentorship and instruction from this accelerator program to grow their commercial outreach, dual-use technology, and venture connection."

Hanscom directorates and MassChallenge have worked collaboratively since 2017 and the resulting opportunities have led to tangible mission enhancement for the Air Force.

"The MassChallenge program allows us to gain access to the latest technologies from innovative small businesses, who

are traditionally on the cutting edge of technology," said Maj. Gen. Michael Schmidt, PEO for C3I&N. "Understanding and maturing these capabilities now allows for them to be rapidly inserted into programs and platforms in the future. Specifically, areas such as artificial intelligence, machine to machine interfacing, and machine learning will be critical to enabling force multipliers for our warfighting customers."

This pilot project, an effort originating within the Digital Directorate, is contracted through the Griffiss Institute and funded by AFRL, the Cyber Resiliency Office for Weapons Systems (CROWS), and C3I&N.

Joe Bradley, director of CROWS and associate director of engineering and technical management at Hanscom, said this expenditure of funds allows CROWS to open its aperture and strengthen the defense innovation base.

"Our CROWS investment will allow us to reach non-traditional partners and leverage solutions to improve the cyber resilience of weapon systems," said Bradley. "The CROWS investment has already been used to evaluate products from two non-traditional companies that show promise to deliver improved resiliency at an Air Force and Department of Defense enterprise level across air, space, and cyberspace platforms, among others."

Charlie Benway, MITRE portfolio director and director of the Massachusetts Innovation Bridge, an organization designed to connect innovative state businesses and federal agencies to solve national challenges, also sees the partnership as a huge step in developing the defense innovation base and addressing the mission challenges of Hanscom's customers.

"We are in a global power competition and Hanscom Airmen are playing an important role," Benway said. "In order to achieve competitive advantage over peer adversaries in current and future competition and conflicts, the National Defense Strategy (NDS) emphasizes the need for delivering at the speed of relevance, driving innovation and strengthening partnerships. It is incredible to witness first-hand Hanscom leadership addressing NDS strategic objectives locally with creativity and agility."

To learn more about the U.S. Air Force Lab with MassChallenge partnership, visit <http://apply.masschallenge.org/en/usaf>.

2019 Nuclear Deterrence Operations, Nuclear & Missile Operations Awards Winners Announced

SECRETARY OF THE AIR FORCE PUBLIC AFFAIRS (APRIL 16, 2020)

WASHINGTON—Air Force officials recently named the winners of the 2019 Nuclear Deterrence Operations Award and the Nuclear & Missile Operations Award.

These awards recognize the outstanding accomplishments of Airmen contributing to nuclear deterrence operations and the missile operations career field respectively.

“The winners of the 2019 Nuclear Deterrence Operations Awards and the Nuclear & Missile Operations Awards have distinguished themselves amongst their peers while making a significant impact on nuclear deterrence operations,” said Lt. Gen. Richard Clark, deputy chief of staff, Strategic Deterrence and Nuclear Integration, Headquarters U.S. Air Force. “We are pleased to highlight their achievements. Congratulations to the winners as well as those personnel who were nominated.”

These outstanding nuclear professionals were selected from a diverse field within the Air Force’s major commands, unified combatant commands, and other agencies including the Air Force Reserve and Air National Guard.

Nuclear Deterrence Operations Award winners are:

- Airman of the Year: Senior Airman Benjamin S. Alfred, 90th Security Support Squadron, Francis E. Warren Air Force Base, Wyoming
- Noncommissioned Officer of the Year: Staff Sgt. Sarah L. Rohlk, 703rd Munitions Support Squadron, Volkel Air Base, The Netherlands
- Senior Noncommissioned Officer of the Year: Master Sgt. Joseph R. King, 709th Support Squadron, 709th Support Group, Air Force Technical Applications Center, Patrick AFB, Florida
- Company Grade Officer of the Year: Capt. Nathan M. Larson, Joint Nuclear Operations Center, Air Force Global Strike Command, Louisiana
- Field Grade Officer of the Year: Maj. Bryan C. Dukes, 91st Missile Maintenance Squadron, Minot AFB, North Dakota
- Reservist of the Year: Capt. Jennie S. Wood, 21st Surveillance Squadron, 709th Surveillance and Analysis Group, Air Force Technical Applications Center, Patrick AFB, Florida
- Category I Civilian of the Year: Mr. William H. McCord III, 490th Missile Squadron, Malmstrom AFB, Montana
- Category II Civilian of the Year: Melton Lavergne, 49th Test and Evaluation Squadron, 53rd Test and Evaluation Group, 53rd Wing, Barksdale AFB, Louisiana

- Category III Civilian of the Year: Benjamin J. Guenther, 625th Strategic Operations Squadron, Offutt AFB, Nebraska
- Professional Team: Glass Titan Mission Team and Staff, 45th Reconnaissance Squadron, 55th Wing, Offutt AFB, Nebraska (Maj. Justin T. Guy, Maj. Sonja A. Hosler, Capt. Jeffrey S. Corthell, Lt. Col. Sean V. Orme, Capt. Kyle J. Redfern, Capt. Rebecca C. Wadey, Capt. Mitchell T. Zeleznik, Tech. Sgt. Jonathan M. Lach, Staff Sgt. Justin L. Ransleben, Airman 1st Class Andrew G. Vandermissen, Staff Sgt. Adam A. Edwards, Senior Airman Neil E. Linehan, Staff Sgt. Roark L. Vaughan, Staff Sgt. Theodore J. Benscoter, Staff Sgt. Joshua J. Hepburn, Senior Airman Brian C. Riesch, Staff Sgt. Justin D. Turner, and Capt. Christopher R. Pitkins).

Nuclear & Missile Operations Award winners are:

- Operator of the Year: First Lt. Elizabeth R. Jordan, 742nd Missile Squadron, Minot AFB, North Dakota
- Company Grade Officer of the Year: Capt. Mary B. Boatright, 741st Missile Squadron, Minot AFB, North Dakota
- Field Grade Officer of the Year: Maj. Carlos N. Barrios, Air Force Nuclear Weapons Center, Air Force Materiel Command, Hill AFB, Utah

Since 2014, the Nuclear Operations Awards program has been administered and overseen by Deputy Chief of Staff, Strategic Deterrence and Nuclear Integration, Headquarters U.S. Air Force.

Innovation Directors Connect Hanscom to Leading-Edge Partners

66th Air Base Group Public Affairs (April 17, 2020)

Jessica Casserly

HANSCOM AIR FORCE BASE, Mass. – The directors of innovation for two Hanscom-based acquisition directorates are helping to support critical warfighter needs through key partnerships within Greater Boston’s innovation economy and beyond.

Capt. Amanda Rebhi, chief innovation officer for Digital, and Brian Carr, director of innovation for Command, Control, Communications, Intelligence and Networks, are both the first to hold formal positions as innovation focal points in their respective directorates.

“This position was created specifically for someone like me who can come in and focus purely on the innovation efforts,” Rebhi said. “Mr. Wert [Program Executive Officer for Digital]



Capt. Amanda Rebhi, Program Executive Office for Digital commander's action group chief and innovation director, participates in virtual judging for the U.S. Air Force Lab with MassChallenge from her home in Massachusetts April 8. The two-year pilot project is designed to increase non-traditional participation in Small Business Innovation Research program opportunities.

Courtesy photo

recognized the importance of being able to incorporate technologies across 14 divisions and to move fast.”

Rebhi categorizes her responsibilities into three “buckets.” The first is innovation at large, the second is training, and the third is partnerships and outreach. She sees these three elements working together to help create a shift in the acquisition culture.

“Training programs like Banshee or PEO Digital’s initiative LEARN Everything are really key to our personnel and program offices evolving,” she said.

In his role, Carr acts as a representative for the C3I&N PEO, Maj. Gen. Michael Schmidt, and serves as the key collaboration officer for internal and external stakeholders.

“My job is to manage the collaboration efforts across the directorate to leverage opportunities and synergies,” he said.

For both, managing their directorates’ innovation efforts involves staying up-to-date on cutting-edge technologies.

“My role is understanding what’s out there and making these technologies known to the right program office,” Carr said.

One key technology area Carr has been examining with startups like BlackLynx and Axellio is edge processing, which involves manipulating and aggregating data and reducing bandwidth to move basic computation to the physical system as much as possible.

Rebhi agreed that connecting startups with the right program is key.

“That’s really my position, helping people get in the door, finding them the appropriate office that they’d be able to work with, and then helping that program office or division work with the company more independently and in depth,” said Rebhi.

One startup Rebhi helped bring onboard is the General Radar Corp., which was recently selected for a Phase II Small Business Innovative Research program contract through AFW-ERX’s Virtual Pitch Bowl event held in March.

“While we started working with General Radar for what their technology brings to counter-small Unmanned Aircraft System air defense, their technology is now also assisting in remote patient monitoring in the fight against COVID-19, receiving the green light from the Food and Drug Administration in less than two days,” she said.

Much of an innovation director’s work depends on their ability to develop and sustain connections. With the COVID-19 response changing how daily operations are conducted, Rebhi and Carr are using teleconferences and Zoom calls to stay connected to external partners and keep collaborative projects moving forward while teleworking.

“As unfortunate as the current situation is, it’s also opening the door wide for innovative solutions that I believe will permanently and positively alter the way we conduct business in the Air Force,” she said.

One partnership that has thrived due to Rebhi and Carr’s efforts is The U.S. Air Force Lab with MassChallenge program. Both directorates have worked with MassChallenge, a network



From left: Brian Carr, director of innovation for Command, Control, Communications, Intelligence and Networks, Christian Melton, senior partnerships manager for MassChallenge Boston, Capt. Amanda Rebhi, chief innovation officer for Digital, Stacy Simon, Small Business lead for Digital, and Capt. Teresa Doskey, a contracting officer for Digital's Force Protection Division, pause for a photo during a partnership meeting at MassChallenge in Boston, Mass., Feb. 21. Much of Carr and Rebhi's work as innovation directors depends on building and sustaining connections with key partners like MassChallenge, a network of zero-equity startup accelerators.

U.S. Air Force photo by Todd Maki

of zero-equity startup accelerators, over the past three years to bring this and other opportunities to fruition.

"I'm really proud of the work that Hanscom is doing with Mass-Challenge," said Rebhi. "We are working with them on the first-ever accelerator specifically for Phase I SBIR companies, which will reap huge benefits in the future."

Collaborative efforts like this one require both external and internal teamwork, Carr said.

"Maj. Gen. Schmidt wants to keep a partnership going with all of the other PEOs at Hanscom," he said. "We want to get the right synergies where it makes sense."

Both Rebhi and Carr hope to weave innovation into the daily operations of their directorates.

"What I'd love to see is people really embrace innovation," said Rebhi. "I'd like to see them go out there and find a startup company that has a technology area that matches their effort and apply that to their program."

Startups are also encouraged to reach out if they have technologies or ideas they think might support the Hanscom mission.

"Look at the broad agency announcements and if you have a solution that you think might be of interest, just go for it," Rebhi said. "Put your name in the hat and more than likely you will get picked up through the AFWERX process and we'll be able to work with you."



Capt. Andrew “Dojo” Olson, F-35 Demonstration Team pilot and commander, performs a high-speed pass in an F-35A Lightning II during the Arctic Lightning Airshow July 13, 2019, at Eielson Air Force Base, Alaska. The F-35 Joint Program Office recently tested and successfully implemented a zinc-nickel plating alternative that will prevent corrosion on aircraft components and completely remove cadmium plating from F-35 aircraft production.

U.S. Air Force photo by Senior Airman Alexander Cook

Carr also encourages startups to connect with the Hanscom Small Business Office and to learn more about the SBIR process through AFWERX.

“Our main focus is getting capabilities to the end user as quickly as possible,” he said. “To do that we’re trying to insert innovation where it makes sense. The overarching goal is making sure that everyone knows there’s a central focal point and that we’re building a sustainable and repeatable process to bring new things into the directorates.”

F-35 Joint Program Office Honored with 2020 SecDef Environmental Award

SECRETARY OF THE AIR FORCE PUBLIC AFFAIRS (APRIL 22, 2020)

WASHINGTON—The F-35 Joint Program Office’s Environmental, Safety and Occupational Health Team was recognized as a 2020 Secretary of Defense Environmental Award winner

for the Environmental Excellence in Weapon System Acquisition in the large program category, April 22.

The Environmental, Safety and Occupational Health Team received the honor for its actions to eliminate hazards associated with the production, operation, and maintenance of the F-35 Lightning II.

One of the team’s most prominent accomplishments was its work in eliminating hazardous heavy metals traditionally employed in aircraft for protection against equipment wear and corrosion.

During the achievement period, the Environmental, Safety and Occupational Health Team tested and implemented a new zinc-nickel plating alternative that will completely remove cadmium plating from F-35 aircraft production and hexavalent chromium

plating from all F-35 external coatings. The team is also on track to eliminate all remaining hexavalent chromium uses, such as fuel tank and support equipment primers and coatings.

"I couldn't be more proud of this team's innovative approaches to eliminating environmental, safety, and occupational health hazards," said Mark Correll, deputy assistant secretary of the Air Force for Environment, Safety and Infrastructure. "Their accomplishments will have a positive and lasting impact on the safety of our Airmen, the community, and the environment."

Hazards are not limited to exposure to chemical compounds, the team was also recognized for its impressive acoustic data analysis that monitors community noise around installations to determine maintainer and cockpit pilot noise exposure levels. The analysis helped inform recommendations on hearing protection options for all current users of F-35 aircraft.

Other Environmental, Safety and Occupational Health Team actions included implementing the elimination of 21 tons of low volatile organic compound internal aircraft coating, as well as other regulated emissions, at a production facility in California.

Actions also included the implementation of a facility-wide lighting upgrade project at an F-35 assembly facility in Texas that resulted in brighter work lighting and significantly more efficient electricity use.

These efforts not only reduced environmental, safety, and occupational health exposures, but also streamlined the production process, significantly reduced associated labor hours and optimized mission capabilities.

The Secretary of Defense Environmental Awards honor installations, teams, and individuals for outstanding conservation achievements, innovative environmental practices, and partnerships that improve quality of life and promote efficiencies that support, without compromising, the Defense Department's mission success.

Office of Naval Research Global Launches \$750K 'Global-X' Challenge

OFFICE OF NAVAL RESEARCH GLOBAL PUBLIC AFFAIRS (APRIL 23, 2020)

ARLINGTON, Va.—The Office of Naval Research (ONR) Global seeks to foster relationships with the international science community and build long-lasting partnerships worldwide. To do so, the command has launched Global-X, a nine-month international science challenge worth up to \$750,000, to encourage groundbreaking research from all around the world.

ONR Global will competitively select and fund revolutionary international research projects in three challenge areas not addressed by its current basic research portfolio. Global-X is designed to stimulate new, high-risk, multidisciplinary research ideas with both military and commercial value, to solve present and future U.S. Navy and Marine Corps technology needs.

ONR Global is interested in receiving white papers and proposals on the following challenge topics:

- Tailored material and manufacturing
- Multifunctional maritime films for persistent and survivable platforms and warfighters
- Object detection and identification in any medium (air, water, sand, earth)

Researchers from academia and industry, encompassing all disciplines and countries, are invited to form multinational teams to address any challenge area. A special notice with specific details about Global-X can be found at <https://www.onr.navy.mil/work-with-us/funding-opportunities/special-notices>.

"The objective of Global-X is to accelerate revolutionary research, bridging the gap between the science community's academic work and warfighter needs," said ONR Global Executive Officer Capt. Matt Farr. "Implementing a multinational team challenge will enable ONR Global to engage the world's best researchers to create and demonstrate new capabilities that have never been done before. This will undoubtedly benefit all team members."

"I'm excited about our Global-X Challenge and its tremendous potential for sparking new ideas and collaborating in a way that has never been done before," said ONR Global Technical Director Dr. Rhett Jefferies. "ONR Global has worked with the brightest minds in the world for decades, and now we have the chance to help these experts connect with each other to explore what is possible in ways they may not have imagined within their own disciplines."

"We are confident that we will receive ambitious yet attainable cutting-edge ideas to potentially transfer to our fleet and the commercial market," Jefferies continued.

Significant Dates and Times

- Full Proposal Submission: July 13, 2020, by 11:59 p.m. EDT

- Notification of Selection: Full Proposals: July 31, 2020, by 5 p.m. EDT
- Grant Awards: Sept. 7, 2020, by 5 p.m. EDT

ONR Global sponsors scientific efforts outside of the U.S., working with scientists and partners worldwide to discover and advance naval capabilities.

For more news from Office of Naval Research, visit <http://www.navy.mil/local/onr/>.

AFRL Sensors Directorate Senior Security Research Engineer Wins Women in Engineering Award

AIR FORCE RESEARCH LABORATORY SENSORS DIRECTORATE
(APRIL 23, 2020)
Zach Tatem

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—An Air Force Research Laboratory Sensors Directorate senior security research engineer was selected by the Institute of Electrical and Electronics Engineers (IEEE) Dayton Section to receive the 2020 IEEE Dayton Section Women in Engineering (WIE) Award.

Felicia Harlow, who has been volunteering with the organization since 2007, was recognized for her contributions to IEEE at both the local and regional level. Some of her most notable achievements were founding the Women in Engineering affinity group in the Dayton Section of IEEE in 2015, as well as planning and organizing a STEM workshop for the 2019 WIE Forum USA East.

“This group is about empowering women,” said Harlow. “It’s about women recognizing their talents and maximizing their capabilities to further their careers in science and engineering.”

The IEEE is an organization that strives to advance technology. Within the IEEE, the Women in Engineering work to promote women in science, technology, engineering, and math (STEM) careers, and inspire young girls to pursue careers in these areas.

A successful engineer herself, Harlow has been with AFRL since 2005, and the Sensors Directorate since 2007. She was nominated for the award by Neeraj Pujara, AFRL Sensors Directorate Integration and Operations division chief.

“Felicia has always set a great example here,” said Pujara. “It’s good to know that our own AFRL employees are out there working to shape the future generation of scientists and engineers.”

Two other AFRL Sensors Directorate members were also recognized by the IEEE Dayton Section. Dr. Muralidhar Rangas-



Felicia Harlow, an Air Force Research Laboratory Sensors Directorate senior security research engineer, attends an Institute of Electrical and Electronics Engineers (IEEE) event. Harlow was awarded the 2020 IEEE Dayton Section Women in Engineering (WIE) Award.

Courtesy photo

wamy, Multispectral Sensing and Detection Division Technical Lead for Radar Sensing, received the Fritz Russ Award; and Christopher Bozada, Aerospace Component and Subsystems Technical Advisor, received the Harrel V. Noble Award.

Navy Strengthens Defense Industrial Base with New Small Business Funding Opportunity

OFFICE OF NAVAL RESEARCH PUBLIC AFFAIRS (APRIL 28, 2020)
Warren Duffie Jr.

ARLINGTON, Va.—To support the national response to the coronavirus (COVID-19) pandemic, the Department of the Navy (DoN) must leverage and sustain its research-and-development industrial base—and attract new small business partners.

The Navy and Marine Corps are doing so by harnessing the DoN’s agile Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs—both located at the Office of Naval Research (ONR). The programs announced today \$30 million in rapid-funding opportunities through a new Broad Agency Announcement (BAA), which is a request for scientific or research proposals. The BAA can be viewed at <https://www.navysbir.com/>.

“During this national emergency, the Naval Research Enterprise must engage all activities to ensure we accomplish our current workload, make sure vital naval partners survive current economic conditions, and bring in new partners,” said DoN SBIR/STTR Director Bob Smith. “I’m proud the DoN SBIR/STTR programs are taking bold steps to maintain the defense industrial base through accelerated funding awards.”

The new BAA, titled DoN SBIR FY20.4, will close on May 28. It seeks proposals from innovative small businesses and startups for high-impact, scalable technologies that address both naval requirements and the needs of the commercial market. Areas of interest to the Navy and Marine Corps include:

- Modernization and sustainment (maintenance and repair of military assets)
- Digital logistics (security, analysis, management and flow of digital information and data)
- Deployable manufacturability (rapid, on-demand manufacturing of deployable systems supporting diverse payloads and missions)
- Resilient communications (expanded communications capabilities for fast, coordinated response during a global crisis)

BAA FY20.4 is just one facet of a broader DoN SBIR/STTR effort to sustain the defense industrial base during the COVID-19 response, by awarding more than \$250 million in funding over the next 90 days.

SBIR provides the Navy and Marine Corps with innovative advances in technology created by small businesses—while STTR transitions products developed by both small businesses and research institutions.

Navy SBIR/STTR and NavalX

In addition to promoting BAAs like FY20.4, the DoN SBIR/STTR programs also look to strengthen new approaches, like serving as technology enablers for the Naval Expeditions (NavalX) Agility Office—created by James Geurts, assistant secretary of the Navy for Research, Development and Acquisition.

NavalX gives Sailors, Marines, and DoN Civilians tools to put good ideas into action. This enables naval organizations like ONR and SBIR/STTR to better connect warfighters with experts and small businesses.

SBIR/STTR also provides expertise at NavalX’s multiple Tech Bridge locations nationwide.

A partnership between ONR, NavalX, the Navy’s Technology Transfer Program Office, and all naval systems commands, Tech Bridges are regional innovation hubs where warfare centers, government, academia, and industry can team up and work together on technology research, evaluation, and commercialization—as well as economic and workforce development.

Learn more about the DoN SBIR/STTR programs and BAA FY20.4 at <https://www.navysbir.com/>.

Program Office for Tactical Radio Systems Puts Plan in Place to Avoid Depot Shortfalls

PROGRAM EXECUTIVE OFFICE TACTICAL AIRCRAFT PUBLIC AFFAIRS (APRIL 29, 2020)

NAVAL AIR SYSTEMS COMMAND, PATUXENT RIVER, Md.—With the fleet of Multifunctional Information Distribution System Joint Tactical Radio System (MIDS JTRS) terminals slated to grow from hundreds to over 6,000 by 2023, the MIDS Program Office (PMA-101) designed a strategy and initiated the plan to avert potential depot maintenance support shortfalls.

“The community of MIDS JTRS users is exploding with 1,000% growth expected in the next three years,” said Capt. Shaun Swartz, PMA-101 program manager. “As all U.S. services and the international Link-16 MIDS users try to meet the Crypto Modernization Mandate, we need to ensure we are postured to support and sustain this critical capability for our fleets.”

Without decisive action to bridge the MIDS JTRS repair capacity gap, the existing maintenance depot capacity is projected to be overwhelmed by the end of 2021 and mission readiness will be negatively impacted.

“When we looked at the dramatic increase in sustainment support required in the next few years, we knew we had to quickly assess all our options and successfully implement the needed changes to ensure uninterrupted warfighter readiness,” said Michael Perrone, MIDS JTRS Product Support Manager (PSM).

Integrated Process Team (IPT) members addressing the capacity gap include both Navy and Air Force professionals from their respective program offices, maintenance depots, supply support activities and contracting offices, and the two MIDS JTRS Original Equipment Manufacturers (OEMs), as well as Deloitte Consulting LLP, a firm engaged to provide defense



NAPLES, Italy (Jan. 16, 2019) Salvatore Spano, a local national employee of Naval Supply Systems Command Fleet Logistics Center Sigonella, Detachment Naples, manufactures a shipping container in the carpentry shop of the supply building aboard Naval Support Activity, Naples, Jan. 16. NSA Naples is an operational ashore base that enables U.S., allied, and partner nation forces to be where they are needed, when they are needed to ensure security and stability in Europe, Africa, and Southwest Asia.

U.S. Navy photo by Mass Communication Specialist 2nd Class Donovan K. Patubo

sustainment subject matter expertise, develop a business case analysis and depot implementation plan, and facilitate/guide IPT deliberations.

Beginning with a sustainment environment where all depot repairs were being performed exclusively by the OEMs, the IPT examined a broad spectrum of options to bridge the projected capacity gap from simply expanding the OEMs' capacity to the creation of an organic military service depot-level MIDS JTRS test/check, repair, and return capability. After eight months of in-depth quantitative and qualitative analysis of alternative Courses of Action (COA), the IPT tentatively settled on two. Key elements of both COAs include:

- The creation of a military Service MIDS JTRS depot maintenance capability, enabled by Public Private Partnerships (PPP) with one or both OEMs
- Tighter integration of Navy and Air Force sustainment planning, management, and sourcing activities
- The evolution from existing transactional arrangements with the two OEMs to long-term, outcome-based relationships within the next few years

While discussions are still ongoing, the key difference between the two COAs is whether contracts will be done separately by each Service or by a single Service contracting office.

Both COAs safeguard warfighter readiness, make investments in organic Service capabilities, and enhance government artisans' capabilities through the addition of highly technical and complex systems maintenance skills.

With production ramping up to fulfill the additional requirements of the warfighter, the OEMs are challenged with the competing requirements to deliver new terminals, retrofit existing terminals to the latest configurations, and repair failed equipment returning from the fleet. Adding a Service depot maintenance capability enabled by a PPP gives the OEMs the ability to leverage the government artisans, equipment, and facilities to meet the growing depot repair/retrofit demands while still attending to their production requirements.

"Working with our trusted OEMs in a Public Private Partnership will give us the organic depot maintenance capability needed to achieve the readiness levels required," Swartz said.

Another major milestone was met when the depot selection evaluation team unanimously recommended, and the IPT concurred, with the selection of Fleet Readiness Center South West (FRCSW) as the future Service MIDS JTRS maintenance depot in late February 2020. Planning meetings between FRCSW and the two OEMs have already commenced.

"FRCSW is excited to be part of the MIDS JTRS future sustainment strategy," said Tim Schupp, FRCSW Business Development, "We are looking forward to the opportunity to partner with the OEMs and the MPO in support of our nation's warfighters and those of our allies."

Looking ahead over the next few months, final analyses of the quantitative data associated with each of the depot expansion COAs will be completed, documentation of the selected strategy will be crafted, and an implementation plan will be developed. IPT members are scheduled to meet in late May to decide which of the two COAs will be recommended to the program office. In the near future, specifics of the PPP arrangements between FRCSW and the OEMs will be finalized, and initial workload will begin transitioning from the OEMs to FRCSW. The MIDS JTRS plan is to start small, achieve success, then scale as rapidly as positive returns allow.

Finally, while every weapon system and sub-system is unique and must be managed accordingly, the overarching process employed to address MIDS JTRS depot capacity challenges is broadly tailorable to most, if not all, defense sustainment improvement opportunities. The methodology, outcomes achieved, and lessons learned will have wide-ranging applicability to programs facing similar maintenance requirements.

More About MIDS JTRS

The MIDS Program Office mission is to develop, field, and support interoperable, affordable, and secure Link 16, Advanced Tactical Data Link (ATDL), as well as programmable networking technologies and capabilities for joint, coalition, and international warfighters. The MIDS JTRS terminal is a 4-channel Software-Defined Radio (SDR) designed to run the complex Link 16 waveform and up to three additional communication protocols, including the Airborne Networking Waveform (ANW). For the joint warfighting community, this SDR technology in today's dynamic C4I environment is a highly critical requirement. Concurrent multi-netting, multi-channel, and plug-n-play SDR capabilities are all part of delivering cutting-edge MIDS JTRS technology to the forward deployed warfighter.

For more news from Naval Air Systems Command, visit <http://www.navy.mil/local/navair/>.

DoD Invests \$3.6 Million for the Defense Established Program to Stimulate Competitive Research Competition Winners

DEPARTMENT OF DEFENSE NEWS (MAY 1, 2020)

The Department of Defense has selected six collaborative teams as winners of the Defense Established Program to Stimulate Competitive Research (DEPSCoR) competition. Each team will receive up to \$600,000 over a three-year period of performance to pursue science and engineering research in areas relevant to DoD initiatives supporting the National Defense Strategy.

DEPSCoR is a congressionally mandated, capacity-building program managed by the Directorate of Defense Research and Engineering for Research and Technology, or DDRE(R&T) within the Office of the Under Secretary of Defense for Research and Engineering. The program strengthens basic research infrastructure at institutions of higher education in under-utilized states and territories.

The competition was open to tenured and tenure-track faculty members with appointments in the 37 states and territories eligible to compete for DEPSCoR funds. It introduces potential researchers to the DoD's unique research challenges and its supportive research ecosystem.

"Every state has a vital role to play in America's research competitiveness, and every state has researchers capable of important contributions to the Department of Defense's scientific and technological advancement," said Dr. JihFen Lei, acting director of DDRE(R&T). "It is crucial that we build a

Department of Defense research community that leaves no state behind and takes advantage of each state's unique research strength."

For the fiscal year 2019 competition, the DoD received more than 200 white papers, from which subject matter experts in the military services selected the final six collaborative teams. Universities in Indiana, Iowa, Louisiana, Oklahoma, and Wisconsin lead the selected teams.

In addition to awards announced under this funding opportunity announcement, as part of the DEPSCoR initiative, the program also provided supplemental funds to increase the representation of DEPSCoR-eligible researchers within the DoD basic research enterprise. These funds were awarded to each military service's Young Investigator Program and Defense University Research Instrumentation Program as well as the Vannevar Bush Faculty Fellowship program, DoD's most prestigious single-investigator award.

View a list of the winning teams [here](#).

AMCOM Program Manager Excels, Meets Challenges Head On

ARMY NEWS SERVICE (MAY 4, 2020)

Miles Brown

REDSTONE ARSENAL, Ala.—To say Bettye Lee Long-Walden, known as Lee to her family and friends, is up for a good challenge would be an understatement. She has been tackling challenges large and small in support of the nation's defense for more than 25 years.

Long-Walden is the deputy program manager for Multi-user Engineering Change Proposal (ECP) Automated Review System (MEARS) in the U.S. Army Aviation and Missile Command office of the Chief Information Officer/G-6 directorate. Her team supports warfighter capabilities and Army readiness by increasing the speed and efficiency of the contract management and engineering change process for implementing work orders and deviations to weapon systems and products supported by AMCOM. All of this boils down to better support to Soldiers and a cost savings to the federal government.

"I enjoy working with our team on challenging tasks to provide capabilities to support the needs of our warfighters," said Long-Walden, who transitioned from working for a contractor to federal service back in 2010. "Our efforts decrease costs, reduce risks, increase readiness rates, and increase stock availability for Army aviation and missile systems. All of this results in an annual savings of approximately \$7.5 million for the Army."

Even before joining AMCOM as an Army civilian, Long-Walden's government contractor years were filled with challenges and opportunities. She embraced supporting the Department of Defense while advancing professionally.

"I was the training director for a contract with the U.S. Army Space and Missile Defense Command and quickly moved into software development, technical leadership positions, and program management," said Long-Walden. "Throughout the years as a government contractor, I also provided support to the Integrated Materiel Management Center, the U.S. Army Corps of Engineers, the Logistics Support Activity, and AMCOM."

All this experience dovetailed perfectly into her current position, supporting AMCOM's Software Engineering Services directorate. According to Timothy Mitchell, AMCOM's chief of command applications, she has excelled with every new challenge given to her.

"Ms. Long-Walden led a cross-functional integrated product team to implement Team Foundation Server [TFS] as the central, authoritative tool for application lifecycle management for AMCOM CIO/G-6 and AMCOM Logistics Center," Mitchell said. "The TFS implementation project exceeded everyone's expectations by successfully migrating 67 products from two existing tools into one comprehensive application lifecycle management tool. The team completed the conversion a month ahead of schedule, which yielded a large cost avoidance for the command."

The TFS implementation increases the efficiency of software development teams, reduces costs, and assists in reducing AMCOM's IT Portfolio, according to Mitchell. Implementation of TFS was recognized as an Army improvement initiative and received an advanced rating for application lifecycle management from Microsoft, which is recognized by both industry and government as a standard of excellence.

"Lee is a valued AMCOM CIO/G6 team member. Her experience, work ethic, and drive are the reasons for her success, and she is an invaluable asset to both AMCOM and the Army Materiel Command," Mitchell said.

Long-Walden received additional recognition for her TFS implementation efforts. She was awarded the Department of Army Achievement Medal for Civilian Service for exceptional service.

She views this recognition as one of the best highlights of her federal career. But she also loves all the job has to offer.

"As the deputy program manager, I get to see the big picture and work on a variety of tasks involving finance, accounting, contracting, and information technology," said Long-Walden. "I enjoy the challenge of leading major information technology projects that lead to increased efficiency, effectiveness, and cost savings for the Army."

Long-Walden's work ethic and success led to a once-in-a-lifetime opportunity—selection for an Enterprise Talent Management (ETM) shadow experience at Headquarters, Department of Army, Office of the Chief Information Officer/G-6 located at Ft. Belvoir, Virginia. She was one of only four Army civilians selected for this prestigious opportunity in FY20.

"Lee exemplifies the dedicated Army professional and is a life-long learner," said Shirley Perkey, AMCOM's chief information officer. "Her selection for the Army's shadowing leadership experience speaks volumes and is just another step in her professional progression."

The shadowing leadership experience offers an excellent opportunity for a select few up-and-coming future senior leaders to observe multiple Senior Executive Service, General Officer, and General Schedule-15 leaders as they tackled the most challenging problems facing the Army today.

"These experiences allowed me to see firsthand what it takes to truly excel as a civilian senior leader," explained Long-Walden, whose home town is Athens, Alabama. "I really enjoyed accompanying and observing senior leaders at the Pentagon. I watched how SES and GOs worked together as partners to accomplish the goals and objectives of the Army."

She also accomplished a major educational goal and received top honors for her accomplishment.

Through the Army's CP-34 Information Technology career program, Long-Walden competed and was selected for an Army Civilian Scholarship through the Academic Degree Training program to earn her advanced degree. She graduated from the University of Management and Technology in September 2017 with a Master of Science in Management and was inducted into the Delta Epsilon Tau International Honor Society for superior academic achievement. She was also selected as the 2019 Distance Education Accrediting Commission's outstanding graduate.

She attributes much of her success to those around her and the opportunities available through the Army.



Bettye Lee Long-Walden is the deputy program manager for Multi-user Engineering Change Proposal (ECP) Automated Review System (MEARS) in the U.S. Army Aviation and Missile Command office of the Chief Information Officer/G-6 directorate.

U.S. Army photo

"Most of all, I thank God for the opportunities and successes in my career," said Long-Walden. "I am especially grateful for the love and support over the years from my parents, husband, and daughter. Faith and family are cornerstones to my resiliency and success. The CP-34 career program and the Army offer so many rewarding and challenging opportunities and experiences. You just need to apply and then apply yourself and you will reap the rewards of your labors."

DoD Awards \$24 Million for the 2020 Class of the Vannevar Bush Faculty Fellowship

DEPARTMENT OF DEFENSE NEWS (MAY 12, 2020)

The Department of Defense has selected eight distinguished faculty scientists and engineers and provided \$24 million in fellowship funds as part of the 2020 Class of the Vannevar

Bush Faculty Fellows. Following is a complete list of this year’s winners:

2020 Class of Vannevar Bush Faculty Fellows		
Name	Institution	Research Topic
Laurent Bellaiche	University of Arkansas	Topology of Ferromagnetic Matter
Eric Vanden-Eijnden	Courant Institute, New York University	Mathematical Foundation and Scientific Applications of Machine Learning
Chang-Beom Eom	University of Wisconsin	Spin Manipulating Heterostructures with Epitaxial Antiperovskites
Ahmad Khalil	Boston University	Epigenetically Programmed Biological Materials
Konrad Lehnert	JILA, University of Colorado	Quantum Phononic Sciences
Elchanan Mossel	Massachusetts Institute of Technology	Information Flows on Networks
Jorge Rocca	Colorado State University	Ultra-high Field Nanophotonics
Rafael Yuste	Columbia University	Reengineering the Nervous System of a Cnidarian

For the fiscal year 2020 competition, the Department received more than 200 white papers, from which several panels of experts invited 35 full proposals for review, leading to the selection of the final eight fellows. Each fellow will receive up to \$3 million over the 5-year fellowship term to pursue cutting-edge fundamental research projects.

The Basic Research Office, part of the Directorate of Defense Research and Engineering for Research and Technology (DDRE(R&T)) within the Office of the Under Secretary of Defense for Research and Engineering, sponsors the Vannevar

Bush Faculty Fellowship. The Office of Naval Research manages the grants.

“The Vannevar Bush Faculty Fellowship program is a shining example of why the Department values exploratory basic research,” said Dr. JihFen Lei, acting director of DDRE(R&T). “Not only has this high-risk, ‘blue sky’ academic research resulted in extraordinary scientific discoveries in multiple disciplines, but it is also opening entirely new fields of research that will sustain the scientific leadership of the nation. The Vannevar Bush Faculty Fellows also represent a unique pool of scientific talent that the Department can rely upon for advice, as well as an exceptional resource for developing future scientists and engineers for the defense workforce.”

The highly competitive fellowship, named in honor of Dr. Vannevar Bush, the director of the Office of Scientific Research and Development after World War II, is the Department’s flagship single-investigator award for basic research. In line with Dr. Bush’s vision, the fellowship aims to advance transformative, university-based fundamental research.

The 2020 class will join a cadre of 56 current fellows who conduct basic research in areas of importance to DoD, ranging from materials science and cognitive neuroscience to quantum information sciences and applied mathematics. In addition to pursuing their research projects, fellows engage directly with the DoD enterprise to collaborate with defense laboratories and to share insights with Department leadership and the broader national security community.

For more information on the Vannevar Bush Faculty Fellowship, visit <https://basicresearch.defense.gov/Programs/Vannevar-Bush-Faculty-Fellowship/>.

The Office of the Under Secretary of Defense for Research and Engineering is responsible for research, development, and prototyping activities across DoD and fosters technological dominance across the DoD enterprise to ensure the advantage of the American warfighter. Learn more at <http://www.cto.mil/>.

Department of Defense Announces Winners of the Fiscal Year 19 Nunn-Perry Award, Recognizing Excellence in the DoD Mentor Protégé Program

DEPARTMENT OF DEFENSE NEWS (MAY 12, 2020)

The Department of Defense (DoD) announced the fiscal year 2019 Nunn-Perry Awards winners today, recognizing excellence in the DoD Mentor Protégé Program.

DoD Mentor Protégé Program participants deliver capabilities across major defense programs in support of the warfighter.

Recipients of the Nunn-Perry Award excel in protégé growth and development.

The DoD Mentor Protégé Program was established Nov. 5, 1990, in response to concerns raised by DoD prime contractors regarding their inability to meet Small Disadvantaged Business (SDB) subcontracting goals. At the time, many SDBs lacked the technical capabilities to meet DoD subcontract requirements.

Shannon Jackson, deputy director of the Office of Small Business Programs within the Office of Industrial Policy, congratulated the winners and discussed the important collaborative roles that mentors, protégés, and historically black colleges and universities (HBCUs) play in our nation's small business economy and the defense industrial base.

"The Department of Defense and the American economy succeed because of the innovations borne from small companies like those in the DoD Mentor Protégé Program," said Jackson. "Within the defense industrial base, these companies work to deliver cutting-edge technologies and services that challenge the status quo and have the capacity to shape the future of their respective industries. In order to create these capabilities to support the warfighter, their companies have to deliver more than technology or services."

The program looks forward to celebrating the accomplishments of the winners, listed below, at the 2020 Mentor Protégé Training Week. The award is named for the contributions of Senator Sam Nunn and former Secretary of Defense William Perry, who both played critical roles in the implementation of the DoD Mentor Protégé Program.

"The DoD Mentor Protégé Program helps innovators grow as companies to meet the growing and shifting demands of the warfighter and the Department. The Nunn-Perry Award pauses to highlight the companies that have navigated that challenging transition from capability to company above and beyond their peers. Congratulations to this year's award recipients," said Jackson.

Award Recipients:

- Air Force: IBM, Steel Point Solutions, Morgan State University
- Air Force: Lockheed Martin Aeronautics, Marvin Engineering, University of Texas at El Paso
- Army: System Studies & Simulation, R2C, J.F. Drake State Community & Technical College and Oakwood University

- DIA: Global Resource Solutions, Advanced Decision Vectors, A&M College of Business and Southern University
- MDA, Parsons Government Services, Mb Solutions, Alabama State University
- MDA, Raytheon Company, Kord Technologies, Bethune-Cookman University and Oakwood University

Naval Research Laboratory Researchers Create Electronic Diodes Beyond 5G Performance

U.S. NAVAL RESEARCH LABORATORY, CORPORATE COMMUNICATIONS PUBLIC AFFAIRS (MAY 12, 2020)

Victor Chen

WASHINGTON—David Storm, a research physicist, and Tyler Growden, an electrical engineer, both with the U.S. Naval Research Laboratory, developed a new gallium nitride-based electrical component called a resonant tunneling diode (RTD) with performance beyond the anticipated speed of 5G.

The fifth-generation network technology is now just starting to roll out across the United States.

Storm and Growden's electronic component diode research findings were published March 19, 2020, in the academic journal *Applied Physics Letters*.

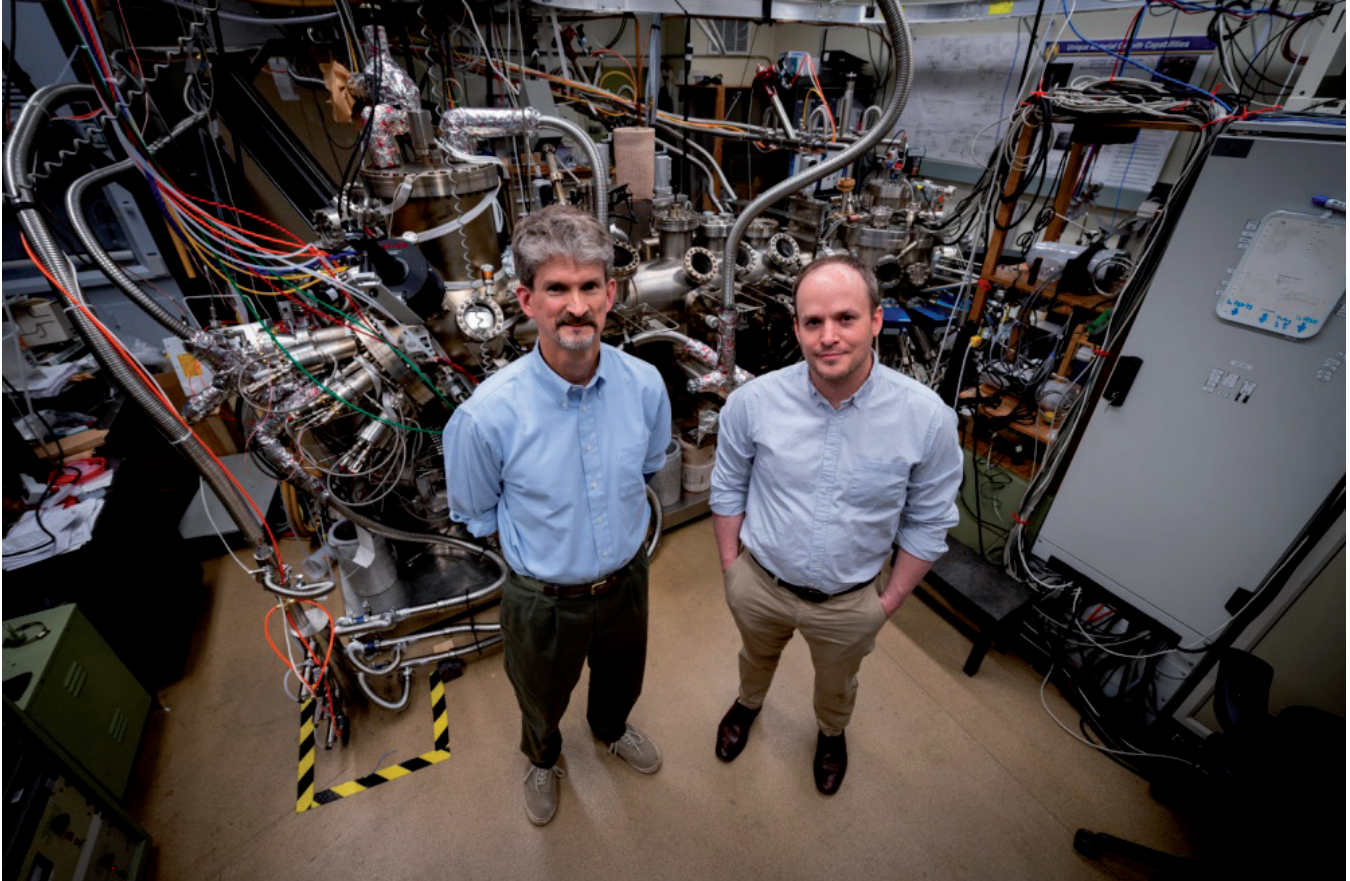
"Our work showed that gallium nitride-based RTDs are not inherently slow, as others suggested," Growden said. "They compare well in both frequency and output power to RTDs of different materials."

The diodes enable extremely fast transport of electrons to take advantage of a phenomenon called quantum tunneling. In this tunneling, electrons create current by moving through physical barriers, taking advantage of their ability to behave as both particles and waves.

Storm and Growden's design for gallium nitride-based diodes displayed record current outputs and switching speeds, enabling applications requiring electromagnetics in the millimeter-wave region and frequencies in terahertz. Such applications could include communications, networking, and sensing.

The team developed a repeatable process to increase the diodes yield to approximately 90%; previous typical yields range around 20%.

Storm said accomplishing a high yield of operational tunneling devices can be difficult because they require sharp interfaces



David Storm, a research physicist, and Tyler Growden, a National Research Council postdoctoral researcher, at the U.S. Naval Research Laboratory with their molecular beam epitaxy system that develops gallium nitride-based (GaN) semiconductors in Washington, D.C., March 10, 2020. Storm and Growden published their research on GaN semiconductor materials, which showed high yield and performance well suited for high-frequency and high-power electronic devices in *Applied Physics Letters*.

U.S. Naval Research Laboratory photo

at the atomic level and are very sensitive to many sources of scattering and leakage.

Sample preparation, uniform growth, and a controlled fabrication process at every step were the key elements to the diodes satisfactory results on a chip.

“Until now, gallium nitride was difficult to work with from a manufacturing perspective,” Storm said. “I hate to say it, but our high yield was as simple as falling off a log, and a lot of it was due to our design.”

Storm and Growden said they are committed to continue refining their RTD design to improve the current output without losing power potential. They performed their work along with colleagues at Ohio State University, Wright State University, as well as industry partners.

About the U.S. Naval Research Laboratory

NRL is a scientific and engineering command dedicated to research that drives innovative advances for the Navy and Marine Corps from the seafloor to space and in the information domain. NRL headquarters is located in Washington, D.C., with major field sites in Monterey, California; Key West, Florida; and Stennis Space Center, Mississippi, and employs approximately 2,500 civilian scientists, engineers, and support personnel.

Hill Airman Wins Lt. Gen. Leo Marquez Award

75TH AIR BASE WING PUBLIC AFFAIRS (MAY 12, 2020)

Todd Cromar

HILL AIR FORCE BASE, Utah—An Ogden Air Logistics Complex Airman was awarded the Lt. Gen. Leo Marquez Award for 2019.



Capt. Scott A. Jensen, Ogden Air Logistics Complex, pictured in front of a transporter erector at Hill Air Force Base, Utah, April 27, 2020. Jensen is the winner of the 2019 Lt. Gen. Leo Marquez Award that recognizes base-level military and civil service aircraft, munitions, and missile maintenance personnel for excellence. Jensen was selected for the award while attached to the 701st Munitions Support Squadron at Kleine Brogel Air Base, Belgium.

U.S. Air Force photo by Todd Cromar

The Lt. Gen. Leo Marquez Award is an Air Force-level award that recognizes base-level military and civil service aircraft, munitions, and missile maintenance personnel who have demonstrated the highest degree of sustained job performance, job knowledge, job efficiency, and results.

Capt. Scott A. Jensen was selected for the award while attached to the 701st Munitions Support Squadron at Kleine Brogel Air Base, Belgium. The squadron was responsible for partnering with the Belgian Air Force in support of the NATO deterrence mission.

"Nobody wins individual awards without a team, and this award is a win for all of my Airmen," Jensen said. "2019 was a very busy year for USAFE deterrence, and my unit in particular had a recordbreaking year. Together, we set high standards and goals for each other and knocked it out of the park."

Jensen is currently in the Logistics Career Broadening Program at the Ogden ALC.

In this program, officers are competitively selected by a team for deliberate development as future senior materiel leaders. Officers complete rotations in depot maintenance, supply chain management, and weapon system program offices, to gain experience in life cycle logistics, so they may become more effective leaders, upon return to the field.

After a Year of Successes, Air Force Continues to Advance S&T Strategy

AIR FORCE RESEARCH LABORATORY PUBLIC AFFAIRS (MAY 14, 2020)

WRIGHT-PATTERSON AIR FORCE BASE, Ohio—In the spring of 2019, the Air Force released the Air Force Science and Technology Strategy to secure continued technological advantage

over rapidly developing state competitors in 2030 and beyond through future technology research and converting new technologies into transformational warfighting concepts. Over the course of the past year, the Air Force has made big strides in implementing key parts of the strategy.

“The steps we are taking are motivated by the strategy’s vision of an Air Force that dominates time, space, and complexity in all operating domains, in order to meet the needs of warfighters today and provide unrivaled, advanced capabilities for decades into the future,” said Timothy Sakulich, AFRL’s executive lead for AF S&T strategy implementation. “Accomplishments over this past year have made huge strides in responding to the strategy’s call to action and laid critical groundwork to fully achieve the strategy’s intent going forward.”

AF Commissions First Vanguard Programs

To develop and deliver transformational strategic capabilities, the Air Force is assembling a deliberate portfolio of ideas, investments, and partnerships that will drive transformational warfighting solutions. In November, the Air Force announced the first three Vanguards, which are priority research initiatives to advance weapons systems and concepts with enterprise commitment. Then in February, the Air Force designated Program Executive Officers to develop and execute an acquisition strategy for each program. The three innovative programs—Golden Horde, Navigation Technology Satellite -3 (NTS-3), and Skyborg—push boundaries by integrating several technology components to deliver game-changing capabilities, covering multiple domains and encompassing multidisciplinary solutions.

New, Provisional TCO Established to Guide S&T Portfolio

The Air Force established a new Transformational Capabilities Office (TCO) under the Technology Executive Officer (TEO) to facilitate new, transformational S&T business processes, including experimentation and prototyping management of the Vanguards.

New approach for Technology Market Calls Increases Access to the Business S&T community through AF Explore

Air Force Explore, the unique call for ideas released in September 2019 to advance the S&T strategy, demonstrates a new, more effective way to introduce defense challenges to the national market and engage with potential business partners. In this new approach, AF Explore piloted several industry-favored practices such as brief idea submission papers, face-to-face meetings, and customizable contracting that saved both

time and money in comparison to traditional acquisition processes. Initial awards are expected to be announced between May and June of this year.

Internal Call for Disruptive Capabilities to Stimulate Applied Research

In January 2020, AFRL launched the “S&T Seedlings for Disruptive Capabilities” call to gather ideas from across the AFRL workforce. This internal opportunity gives Airmen the chance to receive up to \$5 million in annual funding to execute “high-risk/high-payoff ideas,” leverage external partnerships, and create remarkable new capabilities for the future force.

New Warfighter-Technologist Summit Unites AF Enterprise Priorities, Future Force Requirements

To ensure warfighters are continually equipped with the best technology, AFRL, MAJCOMs and AFWIC are partnering to launch WARTECH, an opportunity for future force planners and technical experts to join forces to address important technology challenges. This summer, the operational and acquisition communities will gather for the first WARTECH summit to prioritize advanced technology demonstration (6.3) programs and plan for funding requirements.

Budget Consolidation Facilitates Transformational, Multi-disciplinary S&T Portfolio

The Air Force has recommended restructure of its Science and Technology (S&T) Advanced Technology Development, Research Development, Test and Evaluation (RDT&E) Program Elements (PE) to allow for easier funding of multi-disciplinary technologies. Starting in FY21, the new PE structure for Air Force S&T RDT&E has the potential to provide the Air Force and Congress with increased transparency and better alignment of integrated technology solutions key to building the future force.

Modern Approaches Attract the Future Workforce

In order to continue to attract top talent, Air Force officials are implementing various initiatives to secure a more agile workforce. The Air Force is leveraging recruiters, employing modern recruiting platforms such as LinkedIn, and using special authorities to secure key expertise in critical technology areas.

“Service to Connect” Solutions Explored to Better Identify Novel Partnerships and Opportunities for Innovation

The Air Force is collaborating with experts from commercial industry to make it easier for potential partners to engage



In the spring of 2019, the Air Force released the Air Force Science and Technology Strategy to secure continued technological advantage over rapidly developing state competitors in 2030 and beyond through future technology research and converting new technologies into transformational warfighting concepts. Over the course of the past year, the Air Force has made big strides in implementing key parts of the strategy.

U.S. Air Force illustration by Patrick Londergan

and connect with experts inside the Air Force science and technology enterprise. Beta testing is scheduled to begin in summer 2020.

Increased number of Centers of Excellence Expands AF S&T Presence

To help develop the current and future S&T workforce, AFRL has partnered with several universities to form new Centers of Excellence (COEs) where students and faculty perform cutting-edge research in high-priority Air Force interest areas. These COEs strengthen in-house S&T capabilities, foster relationships with academia, and provide avenues to recruit new employees. Currently, AFRL funds nine COEs with two launched in 2019 and two expected to open in 2020.

Ongoing Modernization Efforts Ensure Full Implementation of the Strategy

The Air Force has recently launched several initiatives that will enable further successful implementation of the S&T strategy. Some of these efforts include expanded modeling and simulation capabilities; a coordinated effort to modernize digital capabilities and processes; and a focus on replacing legacy IT with data-driven business decision-making capabilities.

To ensure effectiveness, the Air Force submitted these strategy implementation approaches for an independent review comprised of experienced innovation and technology executives from government, industry, and academia, and built an Air Force Scientific Advisory Board Quick Look process to help shape future Vanguard selection and management.



Clear Scientific Senior Scientist Patrick Reust applies Decon Slurry to a vertical surface in the company's research laboratory.

Photo by Jack Bunja

Moving forward, the Air Force will continually draw on best practices from industry, academia, and other government leaders to secure the nation and ensure the success of our future force.

For more information on the Air Force Science & Technology Strategy, visit <http://www.AFRResearchLab.com>.

Technology Transfer to Industry Brings Chemical Agent Protection a Big Step Closer to the Warfighter

ARMY NEWS SERVICE (MAY 21, 2020)

Aberdeen Proving Ground, Md.—Technologies developed by the Combat Capabilities Development Command (CCDC) Chemical Biological Center are some of the most advanced in the world; however, they do not actually benefit the warfighter until they can be mass-produced by industry and placed into their hands.

That is why the Center is so proud of the Cooperative Research and Development Agreement (CRADA) it has signed with Clear Scientific, Inc., to commercialize a technology five years in the making that will give warfighters a chemical agent decontamination spray to use on vehicles exposed to agent. The 18-employee Cambridge, Mass., company was founded in 2019 and specializes in chemical biological defense technology.

“Over the last five years, we have developed a very effective, easy-to-use spray we call The Sprayable Decontaminant Slurry that Soldiers can use just as soon as their vehicle is exposed to chemical agent,” said Joseph Myers, a Center research chemist and leader of the research team that created it. “Over the last year, the slurry technology has been demonstrated to warfighters in both the European and Pacific theater.” The feedback from warfighters was very positive for the slurry, so the technology was deemed ready for commercialization.

But commercialization doesn't just happen. The Under Secretary of Defense for Research and Engineering administers a program called the Rapid Innovation Fund or RIF. Its purpose is to provide funding for small businesses allowing them to bring an emerging technology to the point where it is close to being ready for mass production and acquisition. Small businesses interested in participating have to compete for each grant by producing a three-page white paper and a quad chart explaining exactly how they will make the technology commercially ready.

"We have worked on CRADAs with the Chemical Biological Center before," said Michael White, director of research and development for Clear Scientific, Inc. "So we knew their scientists have a really deep expertise in this area. We knew that Joe's team had taken their formulation to a pretty advanced stage. We also knew that we liked working with them."

Clear Scientific has two years, starting from the award date of August 2019, to provide a deliverable to the U.S. Army Joint Program Manager for Protection (JPM P)—40 gallons of slurry plus spray applicators for further developmental testing in the field. Their focus will be on making sure that all of the slurry's ingredients can be readily sourced and lend themselves to mass production, while also ensuring the slurry and hardware can perform in the field.

If the JPM P field testing is successful, Myers estimates that it will take a further two years to produce the quantities necessary for full fielding. In the meantime, Myers research team will continue to work closely with White's research team.

"The Clear Scientific and CBC teams will continue to collaborate to fine tune the slurry formulation to make it an effective decontaminant and to make it easier to commercialize" said Myers. White describes his research team of Ph.D. chemists as very excited by this opportunity.

"They love being in the lab, making it, and watching it perform. But most important, they want to see it go into the field where it will protect Soldiers."

The Combat Capabilities Development Command (CCDC) Chemical Biological Center, formerly known as the U.S. Army Edgewood Chemical Biological Center, is the Army's principal research and development center for chemical and biological defense technology, engineering and field operations. The headquarters of the CCDC Chemical Biological Center is located at the Edgewood Area of Aberdeen Proving Ground, Maryland.

AFOSR Awards Grants to 42 Scientists, Engineers through Young Investigator Research Program

AIR FORCE OFFICE OF SCIENTIFIC RESEARCH (MAY 27, 2020)

ARLINGTON, Va.—The Air Force Office of Scientific Research, part of the Air Force Research Laboratory, today announced it will award approximately \$19.2 million in grants to 42 scientists and engineers from 31 research institutions and businesses who submitted winning research proposals through the Air Force's Young Investigator Research Program (YIP). Seven of the 42 YIPs were awarded to Defense Established Program to Stimulate Competitive Research (DEPSCoR) institutions—four funded by AFOSR and three funded by the Office of Under Secretary of Defense (OSD) Basic Research Office. The remaining 35 non-DEPSCoR institution YIPs were funded by AFOSR.

The YIP is open to United States citizens and/or permanent residents who are scientists and engineers at United States research institutions, who received Ph.D. or equivalent degrees in the last seven years and show exceptional ability and promise for conducting basic research of military interests.

The objective of this program is to foster creative basic research in science and engineering, enhance early career development of outstanding young investigators, and increase opportunities for the young investigators to recognize the Air Force mission and the related challenges in science and engineering.

This year, AFOSR received over 220 proposals in response to the AFOSR YIP funding opportunity announcement (FOA) solicitation, FOA-AFRL-AFOSR-2019-0003. Forty-two YIPs were awarded in these research areas: Aerospace Materials for Extreme Environments, Agile Science for Test and Evaluation, Atomic and Molecular Physics, Biophysics, Complex Networks, Computational Mathematics, Dynamic Data Driven Applications Systems, Dynamics Materials and Interactions, Dynamics and Control, Electromagnetics, Energy Combustion and Non-Equilibrium Thermodynamics, GHz-THz Electronics and Materials, High Speed Aerodynamics, Human Performance and Biosystems, Laser and Optical Physics, Low Density Materials, Mechanics of Multifunctional Materials and Microsystems, Molecular Dynamics and Theoretical Chemistry, Multi-Scale Structural Mechanics and Prognosis, Natural Materials and Systems, Optimization and Discrete Mathematics, Optoelectronics and Physics, Organic Materials Chemistry, Quantum Electronic Solids, Quantum Information Sciences, Science of Information, Computation and

Fusion, Space Power and Propulsion, Space Science, Trust and Influence, Ultrashort Pulse Laser-Matter Interactions, and Unsteady Aerodynamics and Turbulence Flows.

YIP recipients receive a three-year grant totaling \$450,000. View a list of the 42 YIP recipients and their anticipated re-

search areas at <https://www.afmc.af.mil/News/Article-Display/Article/2200137/afosr-awards-grants-to-42-scientists-engineers-through-young-investigator-resea/>.

For additional information on AFOSR YIP, e-mail Ellen M. Robinson at AFOSRYIP@us.af.mil.