AWARDS

FLC
Federal Laboratory Consortium
for Technology Transfer

2025 NATIONAL MEETING

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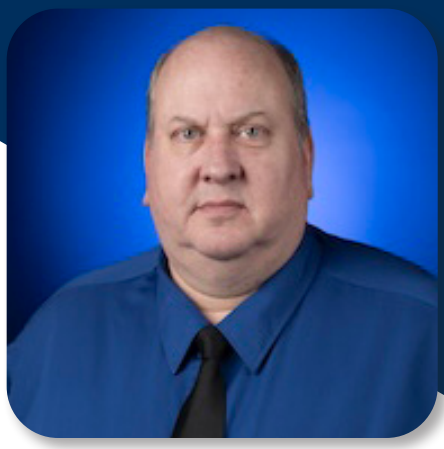

Welcome
to the Virtual 2025 FLC Awards Ceremony!

As Outgoing Chair of the FLC Awards Subcommittee — and a technology transfer professional myself — I remain in awe of the incredible talent in our industry. I have the privilege of seeing many of our award submissions up close during the judging process, giving me an extra glimpse into the fascinating work being done by so many people, at so many federal laboratories across the country. Believe me when I say that all of our award entrants are deserving of recognition in this field, in some way, shape, or form. The impact of our innovations is simply massive. At the end of the day, however, we do have to select just a few winners.

In 2025, we honor 27 FLC award winners (and two Honorable Mentions) from eight federal agencies. I am pleased to report that we saw a 20 percent increase in submissions from last year (106, versus 88 in 2024). The Awards Subcommittee appreciates your efforts to participate in this process and ensure that greatness is recognized in federal technology transfer.

Our pool of award recipients this year is deep and talented, reaching into every corner of industry and recognizing an array of projects benefitting the American people. From decreasing the cost and increasing the performance of batteries in the Pacific Northwest to improved storm observation on the East Coast, from exceptional individual award winners to unique and impactful collaborations — the 2025 FLC Award winners have it all.

By its very nature, federal technology transfer is a collective pursuit. We all strive to make the world a better place with our work, ultimately passing along our discoveries, inventions, and creations to market, and to the benefit of the general public. Here's to an extraordinary group of 2025 FLC Awardees!

Best regards,

Jesse Midgett, NASA Langley Research Center
Outgoing Chair, FLC Awards Subcommittee

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INDIVIDUAL AND SMALL TEAM AWARDS

REGIONAL TECHNOLOGY TRANSFER AWARDS

2025 Awards by the Numbers

AWARDS SUMMARY

11	106	27	2	8
Categories	Nominations	Winners	Honorable Mentions	Agencies Represented

WINNERS BY REGION

Far West

Mid-Atlantic

Mid-Continent

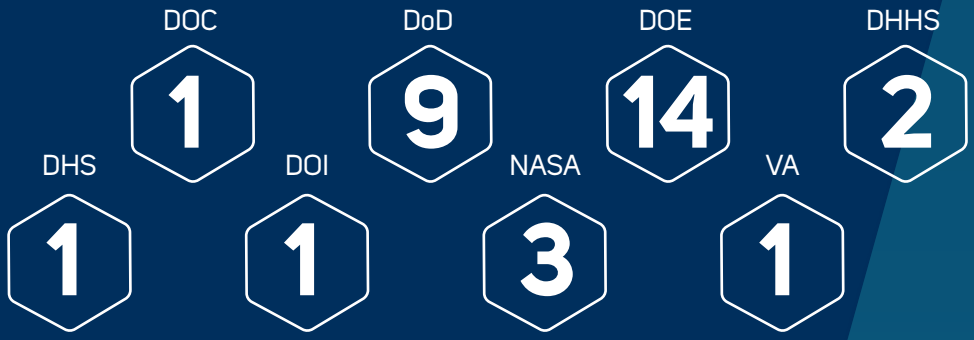
Midwest

Northeast

Southeast

**Some awardees include multiple agencies and regions, so the total will not match the number of winning nominations.*

WINNERS BY AGENCY



AWARDS

EXCELLENCE IN TECHNOLOGY TRANSFER

Honors outstanding work by federal labs in collaborating with industry, academia, or other labs to bring technologies from the lab to the marketplace.

EXCELLENCE IN TECHNOLOGY TRANSFER

TROPICS to Tomorrow.io: CubeSat Sounders for Precision Weather Forecasting

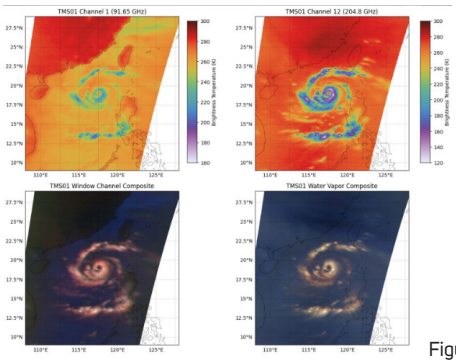


Figure 1.

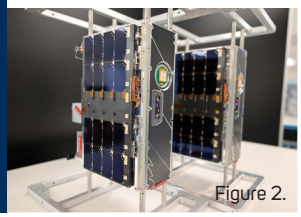


Figure 2.

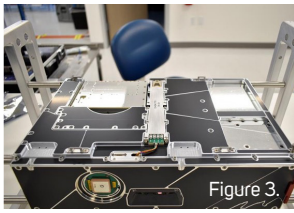


Figure 3.

THE PROBLEM: Hurricanes, cyclones, and other storm systems have caused thousands of deaths and billions of dollars in damage each year. Though weather satellites provide global coverage of storm systems, predictions are still plagued by great uncertainty. Timely and accurate hurricane forecasts could profoundly expedite preparation, evacuation, and survival; they are vitally important in daily life. To better understand and predict these complex storm systems, scientists need more frequent measurements.

THE SOLUTION: Among all hurricane-sensing technologies, space-based microwave sounders, which penetrate cloud cover and measure 3D temperature, humidity, and precipitation within a storm, provide the greatest improvement to forecasting models. Under the National Aeronautics and Space Administration (NASA) Time-Resolved Observations of Precipitation Structure and Storm Intensity with a Constellation of Smallsats (TROPICS) program, MIT Lincoln Laboratory (MIT LL) developed a small, lightweight microwave sounder. The TROPICS technology requires 25 times less power, 50 times less mass, and 112 times less volume than existing polar-orbiting spacecraft — while maintaining comparable performance. The significant savings allow more sounders to be sent into orbit. Constellations of these sensors can work in tandem to keep a near-constant watch over tropical storms, tracking high-rate data to dramatically improve hurricane forecasting.

THE TECH TRANSFER MECHANISM: In 2018, the MIT LL team demonstrated the first-ever microwave-sounding data from a rapid-to-launch commercial small satellite (CubeSats). MIT LL then won funding from NASA's Earth Venture-Instrument competition. By 2023, five satellites were launched to collect data on hurricane intensification, and soon after, MIT LL found a transition partner in Tomorrow.io that planned to fabricate, launch, and operate a larger constellation of CubeSats than TROPICS, thereby improving hurricane prediction accuracy.

THE TECH TRANSFER EXCELLENCE: Because the TROPICS technology resulted from 15 years of MIT LL investment and government grants, resulting in multiple IT owners, the team had to overcome significant licensing challenges in negotiating the Tomorrow.io Cooperative Research and Development Agreement (CRADA). MIT LL also developed in-depth training materials for seven core industry partners involved in production and standardization.

THE OUTCOMES: MIT LL's partnership with Tomorrow.io augments the original taxpayer-funded TROPICS mission and expands its impact by increasing the size of the sounder constellation. Tomorrow.io has been awarded a competitive National Oceanic and Atmospheric Administration contract to assess the quality, characteristics, and impacts of available commercial microwave sounder observations. The first four spacecraft are providing essential tropical cyclone measurements as of March 2025. Next, Tomorrow.io plans to provide unprecedented sub-hourly global atmospheric measurements of temperature, humidity, and precipitation to the commercial sector.

THE LAB:

MIT Lincoln Laboratory
Department of Defense

THE PARTNER:

Tomorrow.io

THE TEAM:

William Blackwell *MIT LL*
Tom Roy *MIT LL*
Steve Gillmer *MIT LL*
Rebecca Keenan *MIT LL*
Nick Zorn *MIT LL*
Mike DiLiberto *MIT LL*
Kai Lemay *Tomorrow.io*
Scott Williams *Tomorrow.io*
Emma Watson *Tomorrow.io*
Jan Wicha *Tomorrow.io*

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PHOTO CAPTIONS:

Figure 1: Initial atmospheric observations of Tomorrow.io's first two microwave sounder satellites, Tomorrow-S1 and Tomorrow-S2. These initial images show data from the sensor's window channels at the top and a composite of window, temperature, and water vapor channels on the bottom. Photo Credit: Tomorrow.io.

Figure 2: Tomorrow.io microwave sounders Tomorrow-S1 and Tomorrow-S2 6U CubeSats in storage prior to integration in their launch dispensers. Photo Credit: Tomorrow.io.

Figure 3: Tomorrow.io microwave sounder spacecraft in test at Blue Canyon Technologies. Photo Credit: Tomorrow.io.

EXCELLENCE IN TECHNOLOGY TRANSFER

Protocol-Free Encryption Device (PFED) Solves a Quantum-Sized Problem

THE PROBLEM: Online communication is always subject to potential attack from outside adversaries. Transmitted data must remain secure against those attacks under all conditions. Encryption obscures stored and transmitted data from potential threats, but it typically faces limitations when data is sent over untrusted networks. Using a National Security Agency (NSA)-patented cryptographic technology, the agency's Office of Research and Technology Applications (ORTA) partnered with Forward Edge-AI — a technology company that develops AI-based solutions in support of public safety, national security, and defense — to mitigate those concerns.

THE SOLUTION: NSA ORTA and Forward Edge-AI used Protocol-Free Encryption Device (PFED) technology to allow trusted, encrypted devices to share data over an untrusted network. PFED is a threat-resistant hardware that can be used for data transmission amongst multiple trusted devices. Previous options have been costly to maintain and upgrade, while still showing significant vulnerabilities. PFED prevents traditionally vulnerable software from ever touching untrusted data, thanks to the redundancy of two encryption layers; if a mistake occurs in one layer, it is protected by the second layer. A PFED-protected interface provides complete confidentiality and isolation, no matter the security levels of the device or networks.

THE TECH TRANSFER MECHANISM: Benjamin Harvey, a longtime partner of NSA ORTA, contacted his industry colleague, Eric Adolphe, CEO of Forward Edge-AI, about potentially licensing NSA technology for his own company's development. After reviewing NSA's portfolio of patents and selecting PFED, Adolphe suggested to NSA ORTA that Forward Edge-AI join the R&D efforts. Forward Edge-AI collaborated with students from Bowie State University (BSU), where Harvey teaches, to conduct R&D on the PFED technology during the spring 2022 semester under a Cooperative Research and Development Agreement (CRADA) with NSA and BSU.

THE TECH TRANSFER EXCELLENCE: NSA ORTA's concerted effort to establish R&D partnerships served as the gateway to this technology transfer effort. The program was a win for all parties involved: NSA de-risked and licensed one of its patented technologies, Forward Edge-AI commercialized federally-funded research to create economic impact, and industry partners participated in the R&D and made technological gains on their own innovations. The successful transfer and licensing of NSA's PFED technology fulfills the mission of the Department of Defense and NSA ORTA to use agency-developed technology to build the economy and increase our nation's security.

THE OUTCOMES: Among this technology's many benefits, it is low-maintenance and cost-effective, requires no external key management, keeps data transferred on public networks confidential, protects communication paths against network and system attacks, integrates easily into existing networks, improves security posture, and meets high assurance standards. As a result of Forward Edge-AI's pursuit of commercial partners, it was able to release Isidore Quantum™, which leverages autonomous AI software and a patented hardware architecture to meet the quantum-resistant security requirements of the space industry and other government industries. Compared to most current Internet Protocol security systems that are not quantum-resistant, Isidore Quantum™ provides extra defense at a smaller size and more affordable price. Lumen Technologies, which provided datasets for testing, has become an official reseller, while Microsoft planned to sell a version of the technology in its marketplace by 2025. Other licensees include DTECH Labs and the U.S. Army, and an e-commerce store has also been established for direct-to-consumer sales.

OFFICE OF RESEARCH & TECHNOLOGY APPLICATIONS
NATIONAL SECURITY AGENCY

THE LAB:

Office of Research and Technology Applications
National Security Agency

THE PARTNER:

Forward Edge-AI

THE TEAM:

Karen Presley *NSA ORTA*
Andrew White *NSA*
Zachary N. Smith *NSA*
Joshua Cline *NSA*
Dan A. DeVries *NSA*
William J. Layton *NSA*
Brendan S. Surrusco *NSA*
David F. Wiecek *NSA*
Benjamin Harvey *AI Squared*
Eric Adolphe *Forward Edge-AI*

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EXCELLENCE IN TECHNOLOGY TRANSFER

Next-Generation Sustainable Fuels Take Flight with Novel Bio-Fuel Catalyst

Figure 1.

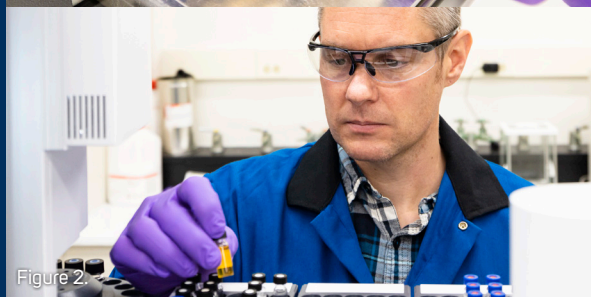

Figure 2.

THE PROBLEM: A long-standing challenge in aviation has been decreasing jets' fossil fuel usage and the carbon footprint. Sustainable aviation fuel (SAF), the industry standard for sustainable jet fuel, is costly and slow to produce. Oak Ridge National Laboratory (ORNL) researchers collaborated with the University of Maryland (UMD) to fix this problem by creating a way for bio-based ethanol to be used as an SAF. While ethanol is a sustainable gas, it is unsuitable for jet fuel and is typically converted to jet fuel by adding carbon atoms. ORNL's technology simplifies that process into a single step to streamline the pathway to SAF.

THE SOLUTION: The research team at ORNL removed hydrogen from the ethanol to produce a compound that simplifies how SAF is made by minimizing the required steps and making it easier to add carbon atoms. Using ethanol produced from sustainable feedstock sources enables increased production of SAF at a lower cost and reduces the industry's carbon footprint. This process also allows a focus on domestic and renewable ethanol use.

THE TECH TRANSFER MECHANISM: After discussing this opportunity with numerous companies — over 15 expressed licensing interest — ORNL entered into an inter-institutional agreement with UMD to lead the patenting and licensing of the invention. After exploring various licensing strategies, ORNL decided to pursue a non-exclusive licensing strategy to maximize its impact. Gevo, a leader in renewable chemicals and advanced biofuels, is the first company to secure a non-exclusive license and is collaborating with ORNL on a Department of Energy Technology Commercialization Fund Project to advance the technology to industrial-scale production.

THE TECH TRANSFER EXCELLENCE: ORNL and the UMD researchers' groundbreaking technology converts ethanol into SAF faster and more cheaply than existing solutions. The partnership journey was complex. After carefully considering market dynamics and potential technology impacts, ORNL strategically pivoted from exclusive to non-exclusive licensing to maximize the technology's impact on critical needs in the aviation sector. ORNL contacted more than 65 companies, referencing a broad licensing call on Sam.gov, the U.S. government's website for federal contract opportunities and awards. Among numerous interested companies, Gevo emerged as the perfect match. As an industry leader that advocates for low carbon-intensity agriculture, Gevo's mission aligns seamlessly with ORNL's technology. Gevo encourages sustainable agriculture to ensure a supply of corn feedstock that minimizes agricultural emissions and sequesters carbon in the soil. Gevo was awarded a grant from the U.S. Department of Agriculture Climate-Smart Commodities grant program to secure a supply of low-carbon-intensity ethanol, that may be converted to SAF. They shared a vision of accelerating SAF adoption, reducing aviation's carbon footprint and driving biofuel production innovation.

THE OUTCOMES: The successful technology transfer effort with Gevo has yielded significant outcomes, aligning perfectly with laboratory goals, advancing the DOE's mission, and accelerating the path to commercial SAF production. A rapid progression to a pilot is expected and underscores the efficiency of the transfer process and the technology's potential. The technology promises to significantly reduce capital and energy costs for converting ethanol to jet fuel, which could dramatically improve the economic viability of SAF production and stimulate economic growth in the renewable energy sector. Improving SAF production would directly contribute to reducing greenhouse gas emissions in the aviation sector.

OAK RIDGE National Laboratory

THE LAB:

Oak Ridge National Laboratory
Department of Energy

THE PARTNER:

Gevo

THE TEAM:

Jennifer Caldwell *ORNL*
Andrew Sutton *ORNL*
Timothy Theiss *ORNL*
Edna Gergel *ORNL*
Andrea Bowers *ORNL and UT Battelle*
Andrew J. Ingram *Gevo*

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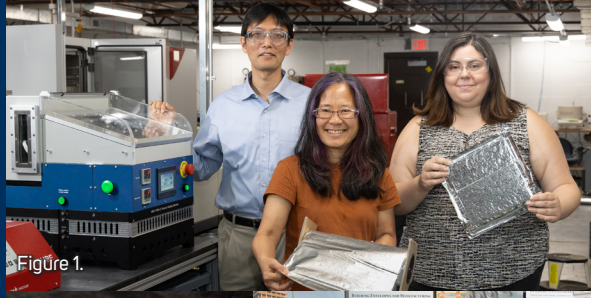
PHOTO CAPTIONS:

Figure 1: ORNL's technology addresses long-standing challenges in the aviation industry to decrease its fossil jet fuel carbon footprint. Photo Credit: Carlos Jones/ORNL, DOE.

Figure 2: ORNL's group leader, Andrew Sutton, stepped into a crucial role, bridging the gap between technical expertise and commercialization efforts. Photo Credit: Carlos Jones/ORNL, DOE.

EXCELLENCE IN TECHNOLOGY TRANSFER

Transforming Sustainable Construction with Self-Healing Barrier Film for Vacuum Insulation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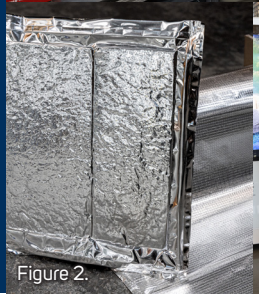
Figure 2.


Figure 3.

THE PROBLEM: A vacuum insulation panel (VIP) is a highly efficient thermal insulation material that is at least five times more effective at preventing heat transfer than typical building insulation materials. The material consists of a rigid, porous core encased in an impermeable barrier envelope from which ambient gases are removed, creating a vacuum. However, current VIPs are easily damaged and require careful handling, limiting their widespread use in construction.

THE SOLUTION: Oak Ridge National Laboratory (ORNL) sought to improve VIP technology to encourage broader use, better insulation, and reduced energy demands, which supports the decarbonization goals of the Department of Energy (DOE). Residential and commercial buildings account for about 40% of the nation's energy consumption. So ORNL developed a self-healing film that is applied to standard VIP cores to increase durability, ability to self-repair after punctures, shelf-life, and scalability. The film application is added to the existing manufacturing process and results in a high-performance insulation material that can be used in building construction. The film also allows for low thermal conductivity to improve energy efficiency, saving costs and facilitating long-term decarbonization goals. The technology is geared toward building insulation but has potential applications in the cold chain storage, automotive, food, pharmaceutical, and aerospace industries, as well as other building applications like pipe-wrapping and vibration reduction.

THE TECH TRANSFER MECHANISM: Flexcon was chosen as a partner for ORNL's self-healing barrier film for several reasons. Flexcon is an industry leader that can scale up production and accommodate manufacturing adjustments, and it has a dedicated pilot plant at its facility. A non-disclosure agreement (NDA) was established in 2019 and initial funding for the technology's proof of concept was granted by DOE's Building Technologies Office, allowing robust, advanced development that would be attractive to an industry partner. Flexcon signed a Cooperative Research and Development Agreement (CRADA) with ORNL in 2022. Later that year, patents were issued for the technology. In 2023, an exclusive R&D license was executed, securing Flexcon's access to the patent and intellectual property (IP) and allowing it to research beyond the scope of the CRADA.

THE TECH TRANSFER EXCELLENCE: The partnership began with an NDA to enable conversations. Winning a competitive Technology Commercialization Fund award from the DOE reinforced the technology's viability, secured funding for development, and provided Flexcon the confidence to initiate a formal partnership through a CRADA and, eventually, an exclusive R&D license. This progression over more than four years showcases sustained commitment from both parties, with considerable forethought given to protecting and advancing the technology. The innovative and uncommon use of the exclusive R&D field of use license secured Flexcon's access to the IP, allowing it to conduct research beyond the CRADA's scope. This is vital for capitalizing on the technology's potential and procuring additional IP and licensing opportunities.

THE OUTCOMES: ORNL's collaboration with a U.S.-based industry partner led to the development of an effective technology specifically tailored for commercial production in Flexcon's U.S. facility using readily available, long-lasting, cost-effective materials. On-site testing provided further validation, resulting in a de-risked technology ideally positioned for economic impact in the U.S. and adoption in market sectors beyond the building industry. Although the self-healing barrier film for VIPs is not available commercially yet, the potential impacts of the technology's widespread adoption in the building industry are compelling for DOE's decarbonization goals.

OAK RIDGE National Laboratory

THE LAB:

Oak Ridge National Laboratory
Department of Energy

THE PARTNER:

Flexcon

THE TEAM:

Tomonori Saito *ORNL*
Andreana Leskovjan *ORNL*
Andrea Bowers *ORNL*
Diana Hun *ORNL*
Natasha Ghezawi *University of Tennessee*
Michael Merwin *Flexcon*

Go to Honors Gallery

PHOTO CAPTIONS:

Figure 1: From left: Tomonori Saito, Diana Hun, and Natasha Ghezawi show samples of ORNL's self-healing barrier film technology for vacuum insulation panels. Photo Credit: Carlos Jones/ORNL, DOE.

Figure 2: The self-healing barrier film can be incorporated into vacuum insulation panels during building retrofits. Photo Credit: Carlos Jones/ORNL, DOE.

Figure 3: Robert Wagner, Associate Laboratory Director for the Energy Science and Technology Directorate; Hun, Building Envelope Materials Research Group Leader; Saito, Synthetic Polymer Chemist; Cynthia Jenks, Associate Laboratory Director for the Physical Sciences Directorate; Ghezawi, Inventor and Bredesen Center student; Yudi Sahoo, Senior Scientist at Flexcon, Sven Mumme, DOE Building Technologies Office Technology Manager; and Mike Merwin, Director of New Technology for Flexcon Holdings. Photo Credit: Carol Morgan/ORNL, DOE.

EXCELLENCE IN TECHNOLOGY TRANSFER

Technology Transfer of Detect-and-AvoID Alerting Logic for Unmanned Systems (DAIDALUS)

Figure 1.

DAIDALUS

Figure 2.

THE PROBLEM: Uncrewed aircraft have become ubiquitous over the past two decades. The capabilities of these aircraft have skyrocketed, making them able to perform missions that were unimaginable years ago. The Federal Aviation Administration has been working with standards development organizations such as RTCA (formerly the Radio Technical Commission for Aeronautics) and ASTM International (formerly the American Society for Testing and Materials) to draft rules for integrating these aircraft into the National Airspace System. One inherent challenge for remotely piloted aircraft is the federal mandate that a pilot must "see and avoid" and "remain well-clear" of other aircraft to avoid collisions. In response, RTCA published "DO-365 - Minimum Operational Performance Standards (MOPS) for Detect and Avoid (DAA) Systems." This document defines "well-clear" and outlines standards for a DAA system. To demonstrate such a system, the National Aeronautics and Space Administration (NASA) was requested to develop a reference implementation of DAA algorithms.

THE SOLUTION: The technology developed, Detect-and-AvoID Alerting Logic for Unmanned Systems (DAIDALUS), provides core algorithms for a DAA system, including detection, alerts, and maneuver guidance. DAIDALUS also has capabilities that account for measurement errors and improve sensor accuracy.

THE TECH TRANSFER MECHANISM: DAIDALUS was first developed during the RTCA-led development of the DO-365 standards document as a guide for implementing DAA systems. The technology's initial user base consisted of participants in the development of the standards document, including users who were doing experiments to determine the timing of alerts, how guidance should be displayed, and many other aspects. DAIDALUS was even used in the final safety analysis of the original version of DO-365. Because the whole aviation community needs to follow the same standards, the developers of DAIDALUS and NASA's technology transfer office opted to release DAIDALUS under a NASA Open Source Agreement. The software is hosted on Github.com, making it easily accessible to the aviation industry and researchers.

THE TECH TRANSFER EXCELLENCE: The technology transfer story was made possible by embracing the NASA open-source model. This software license allows NASA's partners to achieve amazing research, demonstration, and operationalization goals without the added burden of creating interagency agreements, determining licensing issues, or requiring the respective legal offices to get heavily involved. For a research organization, the NASA open-source license is a technology transfer tool that arguably allows for the widest transfer possible: The users in a recipient organization can immediately and directly experiment and use DAIDALUS, and they can ask technical questions to the development team who, in turn, use the feedback to improve the documentation and the code.

THE OUTCOMES: DAIDALUS provides significant advantages that have led to its wide use: flexible configuration, assured behavior, and open-source availability. The project aimed to identify ways to reduce technical barriers, which was achieved through the first transfer of DAIDALUS. The transfer allowed partner entities to research and experiment much faster than if they had to develop detect-and-avoid capabilities in-house. So far, Mosaic has integrated DAIDALUS with a system that uses Remote ID — a drone's ability to broadcast in-flight identification and location information — to prevent collisions between drones. UPS and Raytheon have integrated a version of DAIDALUS in their UPS Flight Forward system that uses drones to deliver packages. The Naval Air Systems Command has integrated the technology into its ground-based detect-and-avoid system and approved its use within military airspace.

THE LAB:

Langley Research Center
National Aeronautics and Space Administration

THE PARTNERS:

CAL Analytics
Adaptive Aerospace Group
General Atomics
MIT Lincoln Laboratory
Johns Hopkins University Applied Physics Lab
NASA Ames Research Center
Mosaic
Netherlands Research Lab
Joby
Boeing Research
UPS/Raytheon
Bihrle Applied Research
Naval Air Systems Command
Matternet
EVERIS
Honeywell
Airbus
Trusted Autonomous Systems Defence

THE TEAM:

Maria Consiglio *NASA Langley Research Center (LaRC)*
James Chamberlain *NASA LaRC*
Aaron Dutle *NASA LaRC*
César Muñoz *NASA LaRC*
Anthony Narkawicz *NASA LaRC*
Bonnie Lumanog *NASA LaRC*
Leslie Johnson *NASA LaRC*

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PHOTO CAPTIONS:

Figure 1: DAIDALUS provides guidance information that can be presented visually to a remote pilot, as in the display above.

Figure 2: The DAIDALUS logo.

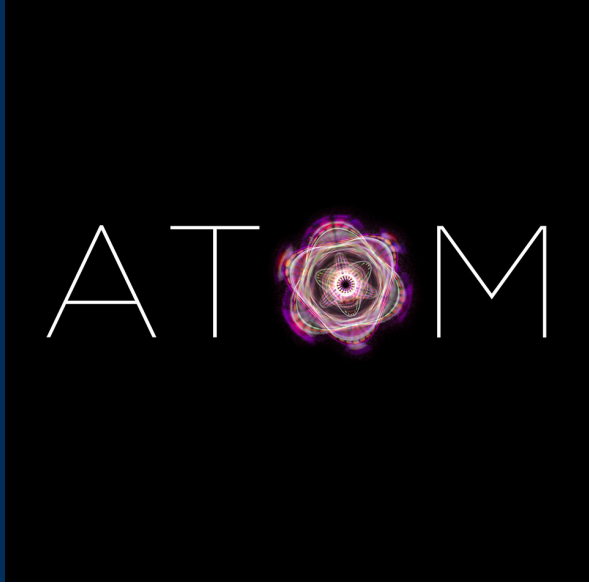
AWARDS

INTERAGENCY TRANS-DISCIPLINARY PARTNERSHIP

Recognizes agency and/or laboratory employees from at least two different agencies who have collaboratively accomplished outstanding work in transferring technology.

INTERAGENCY TRANS-DISCIPLINARY PARTNERSHIP AWARD

ATOM (Accelerating Therapeutics for Opportunities in Medicine)



THE PROBLEM: It typically takes 10 to 15 years and more than $1 billion for a drug discovery to reach clinical approval. The process involves complicated safety and efficacy checks, extensive laboratory testing, several clinical trials, and strict regulatory oversight from federal agencies. Though necessary, these steps extend the time and cost required to produce a commercial drug — ensuring only a small percentage of drugs actually get to market. Speeding up that timeline would improve drug discovery and benefit the general population.

THE SOLUTION: Led by Frederick National Laboratory (FNL) and Lawrence Livermore National Laboratory (LLNL), the Accelerating Therapeutics for Opportunities in Medicine (ATOM) project was designed to develop advanced machine learning tools to shorten the drug discovery timeline. The Department of Energy (DOE) and National Cancer Institute (NCI) signed a five-year Memorandum of Understanding in June 2021 to conduct collaborative research to advance precision oncology and scientific computing. The powerful partnership took a broad approach to cancer research to improve the efficiency and effectiveness of predictive oncology. Using predictive and generative AI software, models, and educational resources, the ATOM team has succeeded in accelerating drugs from discovery to market.

THE TECH TRANSFER MECHANISM: NCI is the nation's primary cancer research organization and the world's largest funder of cancer research. DOE national laboratories bring elite computing, modeling, simulation, machine learning, and AI expertise to the partnership. Within the two agencies, six national laboratories collaborated with two highly regarded research universities — The University of California, San Francisco (UCSF) and Texas A&M University — and some industry partners. All ATOM creations were developed to abide by FAIR (Findable, Accessible, Interoperable, Reusable) principles and and are open-access, available at computational.cancer.gov. This includes the ATOM Modeling PipeLine (AMPL), a software pipeline for building and sharing models to enhance in silico drug discovery with traceability and reproducibility.

THE OUTCOMES: Researchers have widely adopted ATOM tools for biomedical research. First, the national laboratories are using the technology in their collaborative efforts, such as Oak Ridge National Laboratory's Frontier supercomputer, where ATOM software is used to train models for international collaborations. At LLNL, AMPL is being used to build property prediction models to screen small-molecule compounds for drug-like properties. UCSF developed a unique student training program designed to equip the next generation of scientists with a multi-disciplinary background in traditional and cutting-edge approaches to drug discovery. FNL is also using the ATOM Modeling Pipeline for its RAS Initiative, which is aimed at combatting cancers with Ras (rat sarcoma) mutations.

The ATOM team has helped install ATOM tools at key computing centers in the United States, United Kingdom, Germany, and India, including the Food and Drug Administration, Zuse Institute Berlin HPC Center, and Microsoft Azure. As of October 2024, ATOM software had an average of 2,000 viewers and 200 clones per month. ATOM has released nine core tutorials to support new users, released a new version of the software, shared real-world use cases, and hosted an ATOM hackathon at the University of Delaware. In addition, the ATOM team has trained more than 200 college students on its technology.

Frederick National Laboratory for Cancer Research

Lawrence Livermore National Laboratory

THE LABS:

Frederick National Laboratory*
Department of Health and Human Services

Lawrence Livermore National Laboratory*
Department of Energy

Argonne National Laboratory
Department of Energy

Brookhaven National Laboratory
Department of Energy

Los Alamos National Laboratory
Department of Energy

Oak Ridge National Laboratory
Department of Energy

THE PARTNERS:

Flexcon
UCSF
Texas A&M University

THE TEAM:

Eric Stahlberg *FNL*
Justin Overhulse *FNL*
Naomi Ohashi *FNL*
Pinyi Lu *FNL*
Sean Black *FNL*
Kevin McLoughlin *LLNL*
Stewart He *LLNL*
Jessica Mauvais *LLNL*
Jim Brase *LLNL*
Amanda Paulson *UCSF*
Rebecca Lein *UCSF*

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PHOTO CAPTION:
ATOM banner.

*Notates project lead labs

AWARDS

STATE AND LOCAL ECONOMIC DEVELOPMENT

Recognizes successful initiatives that involve partnerships between state or local economic development groups and federal laboratories for economic benefit that have occurred during the past five fiscal years.

STATE AND LOCAL ECONOMIC DEVELOPMENT

Fossil Fuels to Fusion Energy: Charting a Carbon-Neutral Course


Figure 1.


Figure 2.


Figure 3.

THE PROBLEM: Traditional sources of power — think coal, gas, and oil — are under the microscope for contributing to climate change. Federal laboratories are looking to modern alternatives to power generation for innovative solutions to the issue — and hoping to generate positive contributions to the economy along the way. Oak Ridge National Laboratory (ORNL), Tennessee Valley Authority (TVA), and the Tennessee Department of Economic and Community Development (TNECD) intend to do both, using a decommissioned coal plant in eastern Tennessee and partnering with a major investor in the fusion energy space.

THE SOLUTION: ORNL, TVA, and TNECD secured an investment of at least $223 million from Tennessee-based Type One Energy Group to fund a significant initiative for fusion energy development at TVA's decommissioned Bull Run Fossil Plant outside of Knoxville, Tennessee. Type One will build Infinity One, a stellarator fusion prototype and research facility to advance development of carbon-free power generation and bolster economic growth in the region. The project not only repurposes a retired coal plant but also positions the area as a hub for cutting-edge energy development, creating new economic opportunities.

THE TECH TRANSFER MECHANISM: Type One is a leader in fusion energy, drawn to the region largely because of ORNL, a world-leading innovator in nuclear energy. ORNL leverages its unique facilities to accelerate next-generation technology deployment, making it a key factor in Type One's decision to commit to eastern Tennessee. The initial collaboration among ORNL, TNECD, and TVA played a major role in attracting the company. In May 2023, the Department of Energy announced $46 million for its Milestone-Based Fusion Development Program. Type One was one of eight companies awarded funds to advance designs for fusion power plants. This award set in motion engagement between Type One, ORNL, TVA, and TNECD. In August 2023, Type One signed a Memorandum of Understanding with ORNL and TVA, outlining goals to develop and commercialize fusion energy technologies.

The process moved quickly, thanks to established communication channels among the organizations. This team leveraged one another's strengths, creating a compelling value proposition that led to a multi-million-dollar investment, significant jobs, and a future where Tennessee is synonymous with fusion energy. The innovative project demonstrated significant collaborative efforts in integrated expertise, streamlined communication, long-term relationship building, and process flexibility. The deep integration, trust, and vision of a national laboratory, a major utility, and a state economic development agency were key to attracting Type One to the region. The speed at which the project progressed — eight months from initial discussions to announcement — speaks to the effectiveness of the collaborative approach.

THE IMPACT: Beyond Type One's nearly quarter-billion-dollar investment in the region, the project is expected to create 330 high-tech, high-paying jobs. This influx will drive upskilling of the local workforce and lead to partnerships with local educational institutions for specialized training programs. The long-term vision is to create a regional ecosystem for advanced energy technologies — and the initiative has already had a ripple effect, sparking interest from other fusion companies. The project also strengthens ties between industry and research institutions like ORNL and TVA, attracting research funding and commercial activity to further boost the local economy.

OAK RIDGE National Laboratory

THE LAB:

Oak Ridge National Laboratory
Department of Energy

THE PARTNERS:

Tennessee Valley Authority
Tennessee Department of Economic and Community Development
Type One

THE TEAM:

Jesse Smith *ORNL*
Meryl Harris *TVA*
Andrew Campbell *TVA*
Derrick Collins *TVA*
Callie Cook *TNECD*

Go to Honors Gallery

PHOTO CAPTIONS:

Figure 1: Bull Run Fossil Plant in 2010. Photo Credit: Tennessee Valley Authority.

Figure 2: Type One CEO Christofer Mowry in front of the University of Wisconsin-Madison's Helically Symmetric Experiment, a precursor to the company's optimized technology. Photo Credit: Type One.

Figure 3: An early artistic rendering of a future Type One stellarator device. Photo Credit: Type One.

AWARDS

IMPACT AWARD

Honors FLC member laboratories whose technology transfer efforts have made a tangible lasting impact on the populace or marketplace ranging from a local to global scale.

IMPACT AWARD

Rapid Drug Analysis and Research (RaDAR) Program

Figure 1.

RaDAR
Rapid Drug Analysis & Research

Figure 2.

THE PROBLEM: Keeping on top of the U.S. drug overdose crisis presents formidable challenges, especially because the components of street drugs continuously shift and vary. Local and state health authorities must stay up to date on new additives and cutting agents in the nation's drug supply to prepare for the consequences of new drug components and inform people who use them. Rapid analysis and reporting of those changing components is vital to addressing present challenges — but that analysis has been hindered by backlogs, limited geographical information, and the 10 to 30 minutes required to identify chemical compounds in a sample.

THE SOLUTION: For more than eight years, researchers from the Materials Measurement Science Division (MMSD) of the National Institute of Standards and Technology (NIST) Material Measurement Laboratory have been developing tests to rapidly identify trace compounds collected from drug paraphernalia. A team from the MMSD's Surface and Trace Chemical Analysis Group created the Rapid Drug Analysis and Research (RaDAR) Program. Begun as a pilot in October 2022, RaDAR gives near real-time information on the composition of street drugs. Its analytical arm, Direct Analysis in Real Time Mass Spectrometry (DART-MS), analyzes and identifies trace compounds from drug paraphernalia and packaging. This method cuts the identification of chemical compounds in a sample from a minimum of 10 minutes to a maximum of one minute. This allows RaDAR to analyze samples and report results on the same day it is received, significantly speeding up the timeline. The high sensitivity of DART-MS means collaborators in the field need only apply a cotton swab to the outside of the paraphernalia to be tested. If a package is to be tested, RaDAR Program participants do not even have to open the package. They mail the swab to RaDAR and receive the report via email.

THE TECH TRANSFER MECHANISM: The entities participating in RaDAR have different organizational structures and are based in different states. So, one size does not fit all when it comes to Material Transfer Agreements. Staff from NIST's Technology Partnerships Office, NIST's Office for the Chief Counsel, and the MMSD's Surface and Trace Chemical Analysis Group collaborated to identify and refine the appropriate interlaboratory agreement templates for the individual RaDAR participants.

THE IMPACT: RaDAR provides comprehensive drug testing data to 13 states or territories across the U.S.: California, Delaware, Indiana, Louisiana, Maryland, Minnesota, Nevada, New York, Pennsylvania, Puerto Rico, Tennessee, Washington, and West Virginia. Thanks to RaDAR, those 13 all have individual or collaborative successes in analyzing and identifying trace compounds on drug paraphernalia. In total, more than 10,000 samples have been analyzed since RaDAR began in October 2022, and over 6,500 samples were analyzed in fiscal year 2024 alone. Although RaDAR analyses cannot be used in criminal investigations, they provide public health partners with data that will result in harm reduction.

NIST

THE LAB:

National Institute of Standards and Technology
Department of Commerce

THE TEAM:

Edward Sisco *NIST*
Elizabeth Robinson *NIST*
Meghan Appley *NIST*
Elise Pyfrom *NIST*
Cecile Pham *NIST*

Go to Honors Gallery

PHOTO CAPTIONS:

Figure 1: From left: Edward Cisco, Cecile Pham, Elizabeth Robinson, Elise Pyfrom, and Meghan Appley.

Figure 2: RaDAR logo.

IMPACT AWARD

FIRO: Agile Reservoir Management Saves Millions Through Smart Forecasting


Figure 1.

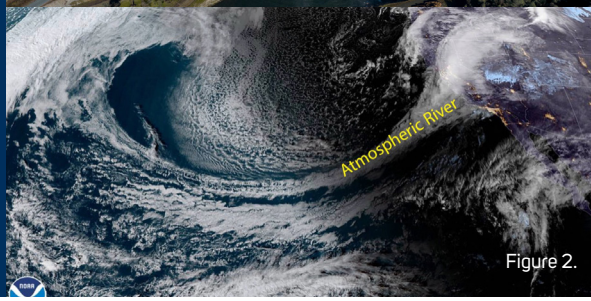

Figure 2.

THE PROBLEM: In an era of increasing water scarcity and unpredictable weather patterns, the U.S. Army Corps of Engineers (USACE) needs improved data that reflects real-time weather conditions and forecasts to more efficiently manage the 400-plus dams it operates across the country. The challenge is exacerbated by growing competition for limited water resources, financial constraints for new dam construction, and increasing complex weather patterns.

THE SOLUTION: The U.S. Army Engineer Research and Development Center (ERDC) Coastal and Hydraulics Laboratory has pioneered Forecast-Informed Reservoir Operations (FIRO), a revolutionary water management strategy that harnesses cutting-edge weather and streamflow forecasts to optimize reservoir efficiency. Instead of maintaining a fixed water level, FIRO introduces a flexible "FIRO space" in a reservoir, that allows operators to adjust water levels based on forecasted conditions — retaining more water for supply when forecasts show dry conditions and releasing more water before a large storm. FIRO boosts water supply reliability, enhances flood risk management, improves environmental flow management, increases infrastructure efficiency, and adapts better to weather extremes.

THE TECH TRANSFER MECHANISM: The FIRO team employed innovative means to bridge research and operational implementation. They represent a unique collaboration among federal agencies (USACE, National Oceanic and Atmospheric Administration, U.S. Bureau of Reclamation), academic institutions, and local water agencies. Once Cooperative Research and Development Agreements (CRADA) were signed and pilots were conducted, USACE districts began incorporating FIRO principles into official water control manuals, codifying the new approach. Along the path to implementation, the FIRO team conducted significant research, screening, testing, and updating to build stakeholder confidence and show real-world impact.

THE IMPACT: USACE is now evaluating FIRO's applicability for its more than 400 dams. Some systems, like the 14-dam system in Oregon's Willamette Valley, are exploring FIRO for complex, multi-reservoir operations. In Northern California, FIRO implementation at Lake Mendocino and Lake Sonoma produced impressive water conservation results valued at $29 million in 2024 for 58,000 homes. In Southern California, FIRO implementation at Prado Dam conserved $6.1 million worth of water for 12,200 homes in 2024. These successes showcase the technology's ability to adapt to different types of dams and climates. FIRO represents a significant advancement that optimizes the balance between flood control, water supply, and environmental needs, addressing the complex challenges of modern water management.

CHL COASTAL & HYDRAULICS LABORATORY

ERDC ENGINEER RESEARCH & DEVELOPMENT CENTER

THE LAB:

Coastal & Hydraulics Laboratory, U.S. Army Engineer Research and Development Center
Department of Defense

THE PARTNERS:

Bureau of Reclamation
National Oceanic and Atmospheric Administration

THE TEAM:

Cary Talbot *ERDC*
Elissa Yeates *ERDC*
Joe Forbis *ERDC*
Eric Fox *ERDC*

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PHOTO CAPTIONS:

Figure 1: Lake Oroville in California is one of the USACE dams piloting the FIRO technology to improve accuracy and efficiency in water management. Photo Credit: California Department of Water Resources/Lake Oroville Spillway.

Figure 2: The data returned from the dams piloting FIRO, identified in this image, will have a direct impact on the total 419 USACE-operated dams with water control manuals. Photo Credit: USACE.

IMPACT AWARD

New Alloy Reduces Steel and Petrochemical Industries' Energy Consumption and Emissions

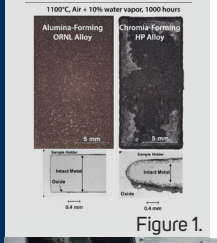

Figure 1.

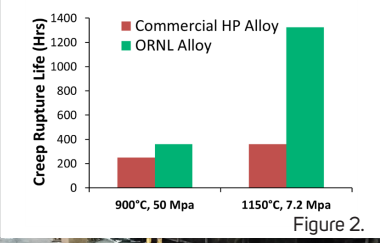

Figure 2.


Figure 3.


Figure 4.

THE PROBLEM: Conventional alloys used in power generation degrade over time due to corrosion-causing water vapor, combustion, and sulfur atmospheres at high temperatures. The layer of chromia that protects the underlying alloy grows quickly, leading to cracking or chipping that further damage the material. The repeated chipping and increase in oxidation reduce the material's thickness, load-bearing capacity, and lifetime. To compensate, operating temperatures must be decreased to maintain the component's durability, but this reduces efficiency and increases emissions.

THE SOLUTION: Oak Ridge National Laboratory (ORNL) has created a cast alumina-forming stainless-steel alloy to address these shortcomings of traditional alloys used in power generation, steel, industrial manufacturing, and chemical and petrochemical industries. Compared to traditional alloys, ORNL's alumina scale is more stable, slows chromia growth, and reduces oxidation — which can help components last 300% longer, increasing productivity, energy savings, and more. Its castability allows production close in size and shape to the finished product, reducing production time, cost, and waste. The new alloy also maintains stability and strength at high temperatures.

THE TECH TRANSFER MECHANISM: ORNL's inventors received commercialization funding in 2014 through an ORNL Technology Innovation Program project to gather data on the ORNL-patented alloy. This attracted the interest of two U.S.-based commercial players: Duraloy Technologies, a foundry, and Cleveland-Cliffs, North America's largest producer of flat-rolled steel. The interest from Duraloy and Cleveland-Cliffs helped ORNL secure an Advanced Research Projects Agency-Energy grant for $3.9 million. Cleveland-Cliffs ran large-scale tests of the prototype in 2018 and validated component performance. Duraloy licensed the technology in 2019. The collaborative efforts among ORNL and its partners took the alloy from foundational discovery to disruptive market penetration in a short time.

THE IMPACT: High demand for components produced with the new alloy has led to a 20% increase in jobs at Duraloy's plant outside of Pittsburgh, Pennsylvania. Industrial components made from this alloy have shown a remarkable 300% increase in longevity and a significant reduction in maintenance costs. Just in the steel industry, represented by Cleveland-Cliffs, the enhanced process efficiency achieved with longer running equipment and components has increased the production period and significantly cut costs. The ability to operate at higher temperatures improves manufacturing efficiency and reduces emissions, enhancing energy security. The alloy's long-term economic benefits also include reduced reliance on foreign suppliers for critical components and lower operating costs that ultimately translate to savings for customers. Finally, the company has established partnerships with local trade schools, including involvement with advisory and scholarship committees and paid internships for college students in need.

OAK RIDGE National Laboratory

THE LAB:

Oak Ridge National Laboratory
Department of Energy

THE PARTNERS:

Duraloy Technologies
Cleveland-Cliffs

THE TEAM:

Govindarajan Muralidharan *ORNL*
Alex DeTrana *ORNL*
Michael Brady *ORNL*
Yukinori Yamamoto *ORNL*
Nestor Franco *ORNL (former)*
Roman Pankiw *Duraloy*
Ryan Richter *Duraloy*
Tanya Ros-Yanez *Cleveland-Cliffs*
Stan Fauske *Cleveland-Cliffs*

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PHOTO CAPTIONS:

Figure 1: ORNL's cast alumina-forming alloy shows insignificant metal loss, while conventional chromia-forming HP-alloy shows significant metal loss, after 1,000 hours in 100-hour cycles at 1,100°C in air and a 10% water vapor environment. Photo Credit: ORNL, DOE.

Figure 2: ORNL's alumina-forming alloy shows creep properties better than conventional chromia-forming HP-alloys. Photo Credit: ORNL, DOE.

Figure 3: The prototype roll installed in Cleveland-Cliffs' Coatesville, Pennsylvania plant was temporarily removed for inspection after five months of service. The surface condition confirmed the superior oxidation resistance of the new alumina-forming alloy. Photo Credit: Cleveland-Cliffs.

Figure 4: Large diameter furnace rolls manufactured by Duraloy for the newly commissioned Cleveland-Cliffs steel plate treatment furnace at Coatesville, Pennsylvania. Photo Credit: Duraloy Technologies.

IMPACT AWARD

FEDS Delivers Cutting-Edge Energy Efficiency Tools

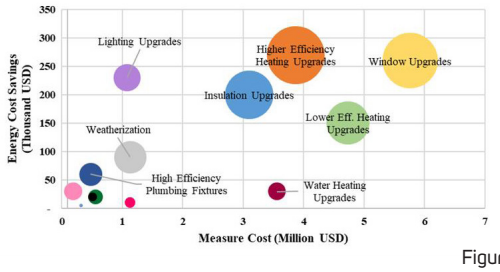

Figure 1.

Figure 2.

THE PROBLEM: Buildings account for about 40% of U.S. energy use and 75% of the nation's electricity every year, making them a key target for energy reduction. To support the Department of Energy's goal of increasing energy efficiency and decreasing consumption, Pacific Northwest National Laboratory's (PNNL) Facility Energy Decision System (FEDS) is helping create a more resilient and renewable energy future for vulnerable communities in New England, the Midwest, and the Pacific Northwest.

THE SOLUTION: FEDS is a highly customizable Windows-based software tool developed to track and improve energy usage at federal sites. The software enables building management professionals to analyze energy use in a single building, group of buildings, or an entire campus, then identify the most cost-effective pathways for reducing energy consumption while meeting local or federal sustainability goals. FEDS considers factors such as building characteristics, occupancy, local climate data, energy prices, and more. With this data, FEDS can identify and prioritize energy efficiency measures based on cost and savings, compare savings across multiple sites, forecast the impact of potential changes, and support plans for addressing energy and sustainability goals. FEDS offers tools that provide guidelines to advance electrification and decarbonization, which will help agencies and building owners evaluate how best to shift to lower-carbon energy use.

THE TECH TRANSFER MECHANISM: The tech transfer story began in 2010 with an exclusive licensing agreement with one industry partner. By 2019, the PNNL team had renegotiated that agreement by opening licensing to achieve broader adoption. One key to FEDS' success is PNNL's uncommon approach to licensing. The core FEDS team streamlined the typically time-consuming commercialization process by offering standardized licensing terms for multiple user categories; graduated licensing for commercial, nonprofit, or municipal use; a new website offering free trials and training resources; and continuous software updates based on user feedback. New users can go from visiting the FEDS website to implementing the software in a matter of days, expanding the software's reach.

THE IMPACT: Today, FEDS has about 500 users, including educational institutions, civic government, federal agencies, and more. For 30 years, FEDS has been a go-to tool for supporting energy efficiency legislation and related goals. Since 1975, data show that the federal government has reduced building energy consumption by 49%, saving about $50 billion — an achievement supported by FEDS' widespread adoption. In Islesboro, Maine, FEDS models showed a potential to reduce the island's total energy usage by over 50%, with a 29% savings on electricity cost and nearly 5% savings in fuel oil consumption.

Pacific Northwest NATIONAL LABORATORY

THE LAB:

Pacific Northwest National Laboratory
Department of Energy

THE TEAM:

Robert Dahowski *PNNL*
David Long *PNNL*
Sara Hunt *PNNL*

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PHOTO CAPTIONS:

Figure 1: Impact and cost of energy efficiency measures identified for Islesboro, Maine, buildings. Bubble size indicates total energy savings from each measure. Photo Credit: Energy Transitions Initiative Partnership Project (ETIPP) Islesboro Final Report.

Figure 2: Facility Energy Decision System (FEDS) Logo.

IMPACT AWARD

United States Wind Turbine Database Critical to Decision-Making and Economic Growth

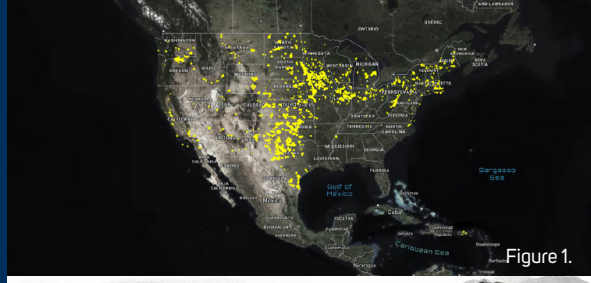
Figure 1.


Figure 2.

THE PROBLEM: U.S. wind development interacts with a number of other land and airspace uses, which include radar for air defense, weather, and general aviation, as well as aspects in hosting communities such as property values, local jobs and income, and resident use and enjoyment of property and home. Many of the fundamental decisions related to wind energy cannot be made without information on how many, where, and what type of wind turbines are currently installed.

THE SOLUTION: The U.S. Wind Turbine Database (USWTDB) provides essential information to researchers and decision-makers in a free, open-source manner. The USWTDB is updated quarterly with information from the Federal Aviation Administration about flight obstacle data, the American Clean Power Association's (ACP) private wind turbine database, satellite imagery, and online searches, making it the most comprehensive, accurate, and regularly updated wind energy database in the world. With this information, the USWTDB allows verification of exact locations and specifications of turbines. Since 2016, the United States Geological Survey (USGS), Lawrence Berkeley National Laboratory (LBNL), and the ACP have collaborated to develop, update, and disseminate the database.

THE TECH TRANSFER MECHANISM: The Cooperative Research and Development Agreement (CRADA) between USGS, LBNL, and ACP has been operational since 2016 and led by team members who developed two of the first publicly available turbine databases a decade ago. Team members interact regularly and make collective decisions on all aspects of the USWTDB via a group email. The USWTDB implements three primary strategies for tech transfer: the Findable, Accessible, Interoperable, and Reusable (FAIR) Principles, a user-friendly web application, and connection to other data sources.

THE IMPACT: The USWTDB is the most current, accurate, and publicly available renewable energy dataset in the world. With 74,511 turbines currently in the database — and 99% of those having a visually verified location — the technology is critical to making decisions about wind energy and generating economic growth in the United States. The USWTDB has been updated 24 times and remains a popular tool for users (with about 17.5 million unique website visits since 2018). The data produced by USWTDB and the research it enables lead to new markets and jobs in the renewable energy sector and help make the resource more affordable.

The USWTDB is a crucial tool with numerous users in several different sectors. For instance, regional grid operators use the technology to determine turbine locations within their jurisdictions and then use weather forecasts to predict the turbines' electricity generation. The USWTDB supports work at the Department of Defense, North American Aerospace Defense Command, and the U.S. Fish and Wildlife Services, and for global academics studying everything from economics to wildlife to sociology.

USGS science for a changing world

BERKELEY LAB

THE LAB:

U.S. Geological Survey
Department of the Interior
(Collaborating with **Lawrence Berkeley National Laboratory,** Department of Energy)

THE PARTNER:

American Clean Power Association

THE TEAM:

Jay Diffendorfer *USGS*
Louisa Kramer *USGS*
Chris Garrity *USGS*
Ben Hoen *LBNL*
Joe Rand *LBNL*
John Hensley *American Clean Power*

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PHOTO CAPTIONS:

Figure 1: Main page of the U.S. wind turbine database, showing summary information on turbines and wind facilities.

Figure 2: Zoomed and tilted image of wind turbines near Palm Springs, California, as seen in the web application. Cabazon, California with summary information in the pop-up window.

IMPACT AWARD

Pozelimab: First FDA-Approved Drug for an NIH-Identified Ultra-Rare Genetic Disease

Figure 1.

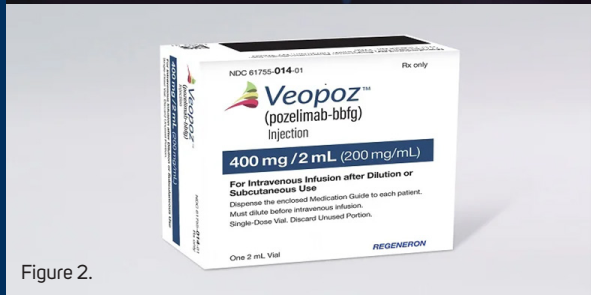

Figure 2.

THE PROBLEM: In 2016, researchers at the National Institute of Allergy and Infectious Diseases (NIAID) were the first to identify an extremely rare genetic disorder leading to a deficiency in the complement protein CD55, which normally helps control the body's defense response to infections, injuries, or other threats. People with CHAPLE (which stands for complement hyperactivation, angiopathic thrombosis and protein-losing enteropathy) disease have two defective copies of the CD55 gene, and the defense mechanisms in the body attack its own healthy tissues instead of invaders, leading to an entirely new cascade of life-threatening health problems.

THE SOLUTION: The NIAID team observed promising test results using eculizumab, a Food and Drug Administration (FDA)-approved treatment for a different genetic disease in the same spectrum. Then, the NIAID team used those results to develop a treatment for patients with CHAPLE disease. In 2020, NIAID entered a Cooperative Research and Development Agreement (CRADA) with Regeneron to study the safety and efficacy of Regeneron's proprietary compound pozelimab in a Phase II/III trial in people with CHAPLE. In August 2023, Veopoz (pozelimab-bbfg) became the first FDA-approved treatment for CHAPLE disease.

THE TECH TRANSFER MECHANISM: After the initial discovery, NIAID researchers filed a patent application in 2017 for a method of diagnosing and treating CHAPLE disease. They collaborated to investigate the off-label use of eculizumab in 16 people with CHAPLE disease and, when positive test results were becoming clear, they initiated a CRADA to develop the technology. The diligent, meticulous work of the technology transfer team was instrumental in the success of the smooth and timely execution of the extensively negotiated CRADA, its numerous revisions, and three subsequent amendments. In 2020, funding was secured under the CRADA to conduct a multi-site, 110-week Phase II/III trial examining the Regeneron compound in a patient with CHAPLE disease at the NIH Clinical Center. After the trial was successfully completed, Regeneron filed a biologics license application with the FDA, which was accepted for priority review, given the significance of its anticipated impact on patient care.

THE IMPACT: Most people diagnosed with CHAPLE disease are children who face severely debilitating symptoms and life-threatening complications that begin in infancy. In one case, a 15-year-old from Bolivia suffered severe gastrointestinal pain, nausea and vomiting, malnourishment, and frequent lung infections. Team members at the NIH Clinical Center coordinated his travel to the United States for the trial, and he is now symptom-free, enjoying a life of normal eating and activities for the first time. In broader terms, pozelimab's discovery and development could be a model for future discoveries that could offer hope to the 25 to 30 million Americans who suffer from rare diseases.

NIH National Institute of Allergy and Infectious Diseases

THE LAB:

National Institute of Allergy and Infectious Diseases, National Institutes of Health
Department of Health and Human Services

THE PARTNER:

Regeneron

THE TEAM:

Yogikala Prabhu *NIAID*
Cecilia Pazman *NIAID*
Cosimo Fuda *NIAID*
Richard Williams *NIAID*
Michael Lenardo *NIAID*
Heather Moorman *NIAID*
Mary Magliocco *NIAID*
Sarah Weber *NIAID*
Ahmet Ozen *NIAID*
Ivan Fuss *NIAID*

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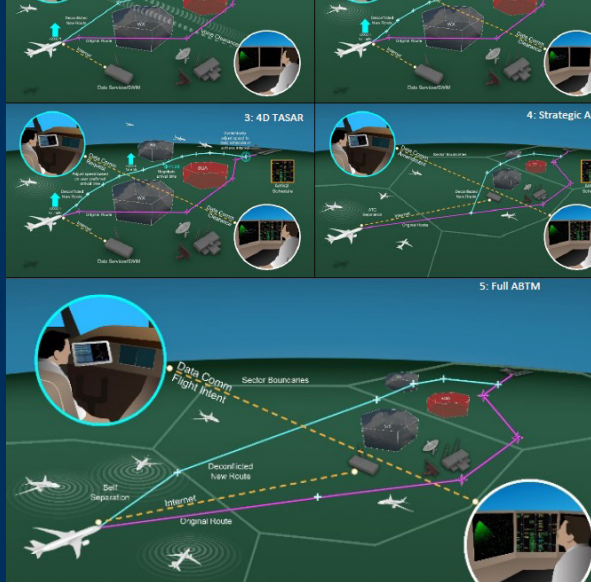
PHOTO CAPTIONS:

Figure 1: Artistic rendering of DNA strands. Photo Credit: Microsoft Stock Library.

Figure 2: Veopoz® product packaging. Photo Credit: Regeneron Pharmaceuticals.

IMPACT AWARD

NASA Langley's Traffic Aware Planner Saves Costs and Reduces Emissions



THE PROBLEM: Currently, when a flight operator wants to change their flight path or altitude to improve flight time, fuel efficiency, or some other flight attribute, the operator must first check with air traffic control (ATC). That is because pilots have limited awareness of weather hazards, airspace restrictions, or airplane traffic in areas far away from their flight path, so ATC can help ensure the conditions are safe. However, when pilots' requests are denied and they are unable to make flight improvements, it adds unnecessary workload increase for pilots, who have to come up with a new request and repeat the process, and ATC, who has to analyze and decide on a response, all while a flight continues on a less efficient route.

THE SOLUTION: NASA's Langley Research Center (LaRC) developed the Traffic Aware Planner (TAP) software to implement the Traffic Aware Strategic Aircrew Requests (TASAR) patented system. TASAR features a cockpit automation system that identifies optimal flight path improvements and displays them to the pilot. These wind-optimized flight trajectory changes are pre-checked for conflicts, making it easier for pilots to request modifications due to changing flight conditions. TASAR suggests flight path and altitude improvements that are more likely to be approved by ATC and reduce work time for both sides.

THE TECH TRANSFER MECHANISM: The TAP technology emerged from research on aircraft operational autonomy and enabling automation technology for cockpit-based trajectory management. It was developed for commercial release to bring NASA's advanced airborne trajectory management technology to the aviation community for near-term adoption while laying the groundwork for increasingly autonomous operations in the future. TAP won the 2016 NASA Software of the Year award, which helped it gain significant attention from the aviation community. Before merging, Alaska Airlines and Virgin America both signed Space Act Agreements with NASA to test TAP. By involving industry in the process early, the LaRC team reduced the handoff effort needed to transfer it.

THE IMPACT: TAP technology is currently licensed to APiJET, Basic Commerce & Industries, Delta Air Lines, and General Electric. Other partners include the Air Line Pilots Association, the Federal Aviation Administration, GE, the National Air Traffic Controllers Association, the National Oceanic and Atmospheric Administration, and Boeing. One major U.S. airline realized a 1.5% fuel savings equivalent to 240,000 tons of reduction in CO_2 emissions, over $70 million in fuel cost savings, and 15,967 hours of flight time saved. With TASAR, about 6% to 8% of requests to ATC would reasonably be expected to be rejected, compared with about 23% of requests on flights without TASAR, according to a simulation. Another analysis estimated an annual potential savings of about $800 million and 6.7 billion pounds of CO_2 if the top 10 domestic airline operations used the APiJET solution.

THE LAB:

Langley Research Center
National Aeronautics and Space Administration

THE TEAM:

David Wing *NASA LaRC*
Kelly Burke *NASA LaRC*
Kimberly Middleton *NASA LaRC*
Jesse Midgett *NASA LaRC*
Mark Ballin *NASA LaRC*
Matthew Underwood *NASA LaRC*
Matthew Osenga *NASA LaRC*

Go to Honors Gallery

PHOTO CAPTION:

Roadmap from TASAR to full airborne trajectory management.

AWARDS

TECHNOLOGY TRANSFER INNOVATION

Recognizes federal laboratories that successfully implemented innovative or unconventional technology transfer approaches that resulted in a significant increase in technology transfer activities within the last five years.

TECHNOLOGY TRANSFER INNOVATION AWARD

ARISE: Uncovering the Wealth in Different Perspectives

THE PROBLEM: Federal R&D funding is spread among thousands of laboratories, universities, and other entities, but gaps remain that limit agencies' access to top experts, impacting U.S. competitiveness on the world stage. With so many organizations deserving federal sponsorship, the National Security Agency (NSA) Office of Research and Technology Applications (ORTA) set out to plug those gaps and ensure that R&D funding was reaching every corner of the country, specifically at universities.

THE SOLUTION: NSA ORTA developed ARISE (Advancing Research, Innovating Solutions through Engagement) to promote research opportunities to student populations. Universities were allowed, through ARISE, to engage directly with the NSA on unclassified projects that support mission goals. This arrangement is mutually beneficial: the NSA gets to tap into new resources, and the universities and their students get to work directly with a federal agency on unclassified national security problems. The ARISE program includes a recent expansion called Hacking for Intelligence, in which participants work on unclassified mission problems, analyze NSA-patented technology, and gain insight and hands-on training. This cohort also allowed ARISE to bring in third-party industry partners like AI Squared and Microsoft for essential collaborations.

THE IMPACT: Typical government-sponsored R&D programs with universities require paperwork, funding, and time to establish, often leading to delays in project initiation and execution. ARISE effectively aligns the goals of NSA, universities, and industry partners by streamlining processes and fostering a culture of creative collaboration. Additionally, it achieves these results without incurring extra costs, allowing for faster progress and greater impact for everyone involved. Exposing students to careers in technology and cybersecurity at an agency also strengthens the STEM pipeline, inspiring the next generation of professionals in these critical fields.

One success is NSA's Laboratory of Analytic Sciences partnership with Fayetteville State University in North Carolina on a project using cycle generative adversarial networks to create photorealistic variations of rare objects, enhancing object detection for NSA analysts. Other universities partnered with NSA on projects like detecting adversary use of deepfakes and social media manipulation techniques, using an NSA-created reverse-engineering tool to improve vehicle cybersecurity, and using virtual reality to help NSA linguists become proficient in hard-to-learn languages. Not only can these projects eventually be put to use for public benefit, but the collaborations have also already led to more than 20 internships or job offers to participating students.

OFFICE OF RESEARCH & TECHNOLOGY APPLICATIONS
NATIONAL SECURITY AGENCY

THE LAB:

Office of Research and Technology Applications
National Security Agency

THE TEAM:

Karen Presley *NSA ORTA*
Lydia Hierl *NSA ORTA*
Cortny Dailey *NSA ORTA*
Linda Burger *NSA ORTA (former)*
Brandie Vassor *NSA ORTA*

Go to Honors Gallery

PHOTO CAPTION:

ARISE logo.

TECHNOLOGY TRANSFER INNOVATION AWARD

Empowering Researchers, Engaging Entrepreneurs: ORNL's Safari Program Drives Innovation

THE PROBLEM: Ultimately, the goal of any technology transfer is to benefit American consumers. To that end, industry partners are essential to bringing that technology to the public — but they can be difficult to find. That is why Oak Ridge National Laboratory (ORNL) launched the Safari Program, supported by the Department of Energy's (DOE) Office of Technology Transitions.

THE SOLUTION: The Safari Program pairs seasoned entrepreneurs with laboratories to create new ventures that will provide economic impact and create U.S. jobs. By tapping into regional networks, the ORNL team identified and recruited 24 entrepreneurs who were aligned with the program's goals and lab capabilities. They became champions for ORNL within their ecosystems and networks, expanding the Safari pool of potential partners. By targeting seasoned entrepreneurs, the program ensures that labs get venture leadership, a keen market understanding, and experience in early-stage technology commercialization.

When ORNL realized that the entrepreneurs were more inclined to use virtual tools than schedule in-person visits, they adapted the program to provide each entrepreneur with curated, market-ready information shared virtually by a corresponding innovator. Safari administrators adopted a researcher coaching program to pitch innovations to entrepreneurs and investors via virtual platforms. ORNL also collaborated with Angelique Adams Media Solutions to develop an eight-week Safari coaching workshop focused on transforming highly technical presentations into concise, compelling pitches, developing the entrepreneurial mindset of ORNL researchers, and empowering them to promote their technologies.

THE IMPACT: For ORNL, the Safari program accomplishes several things at once. It makes ORNL researchers into better communicators and spokespeople for their technologies, developing long-term relationships, and facilitating new connections and collaborations across many disciplines. By March 2025, the initiative had led to three new technology licenses, with more coming (nine NDAs have been signed with entrepreneurs). The network of 24 engaged entrepreneurs is connected to ORNL technologies and will be a valuable asset for years to come. Other DOE laboratories have expressed interest in replicating Safari to drive more effective engagements and commercial outcomes. Finally, ORNL's Safari Program has raised the lab's public profile, accelerated commercialization to more quickly provide economic and societal benefits, and increased economic development and job creation.

OAK RIDGE National Laboratory

THE LAB:

Oak Ridge National Laboratory
Department of Energy

THE TEAM:

Jennifer Caldwell
ORNL
Susan Ochs
ORNL — UT Battelle
Angelique Adams
Angelique Adams Media Solutions

Go to Honors Gallery

PHOTO CAPTION:

From left: Jennifer Caldwell, Susan Ochs, and Angelique Adams. Photo Credit: ORNL/DOE.

TECHNOLOGY TRANSFER INNOVATION AWARD

Visual Intellectual Property Search: An Automated, Comprehensive Database of Innovation

THE PROBLEM: The Department of Energy (DOE) invests hundreds of millions of dollars in research each year to solve problems that affect the entire nation. This research yields a wealth of intellectual property (IP), including patents and software, that could be used to advance industry and benefit the American public. But these groundbreaking innovations have been dispersed across many repositories, making them so difficult to find that many have never been adopted and deployed.

THE SOLUTION: Enter Visual Intellectual Property Search (VIPS), a search tool for patents filed and software created across all the DOE national laboratories. VIPS, which was developed by Pacific Northwest National Laboratory (PNNL) and launched in 2024, gives users a visually appealing, interactive, up-to-date, easy-to-use tool. Every week, it automatically collects the U.S. Patent and Trademark Office's patent data, the DOE Office of Scientific and Technical Information's software content, and GitHub's open-source software.

Through VIPS, tech scouts, entrepreneurs, researchers, faculty members, and business leaders can easily find a comprehensive list of national lab innovations available for licensing or immediate use. Using keywords or visual filters, the tool's users can discover available offerings, narrow the results by clicking on categories, read abstracts that describe the potential application of the IP, and compare offerings to find the right breakthrough for their needs. The tool also offers easy access to commercialization experts to discuss licensing opportunities and direct links to open-source software that can be used for free. In consultation with Tradespace, Inc., VIPS developed a novel taxonomy that provides richer data and greater search discoverability. The tool updates itself weekly to stay current, providing a pathway for streamlined commercialization and automated reporting.

THE IMPACT: By March 2025, VIPS contained information on nearly 14,000 patents and more than 6,000 pieces of open-source and proprietary copyrighted software — all conveniently accessible in one place. During the initial communication campaign, VIPS attracted between 500 and 1,800 users per day. Usage has continued at 50 to 100 unique users per day ever since. For example, in one recent two-week period, users reviewed information on more than 350 patents and copyrights, followed links to 14 of the 21 DOE laboratories and federal sites, accessed open-source software repositories more than 30 times, and initiated eight emails to ask about licensing. VIPS helps its target audience access DOE innovations more easily and eliminates the time-consuming process of manually gathering information and populating search engines. VIPS greatly enhances the visibility of DOE and its national labs and encourages collaboration among labs, industry, and academia.

Pacific Northwest
NATIONAL LABORATORY

THE LAB:

Pacific Northwest National Laboratory
Department of Energy

THE PARTNERS:

Office of Scientific & Technical Information, DOE
Tradespace

THE TEAM:

Scott Dowson *PNNL*
Kannan Krishnaswami *PNNL*
Alex Kendall *PNNL*
Danielle Briseno *PNNL*
Beryn Straub-Waldenberg *PNNL*
Jon Grundy *PNNL*
Robin Cosbey *PNNL*
Hunter Anderson *PNNL*
Mary Beth West *Office of Scientific & Technical Information, DOE*
Alec Sorensen *Tradespace*

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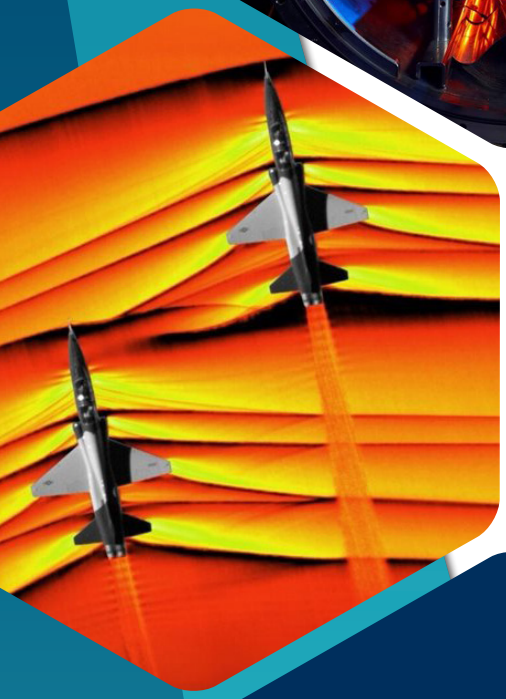
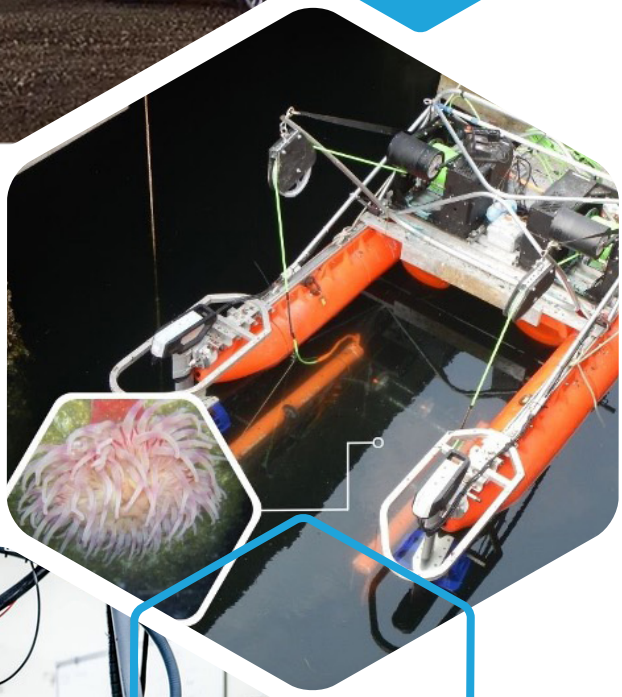
PHOTO CAPTION:

Visual Intellectual Property Search (VIPS) is an automated, self-sustaining, cost-free way to search for intellectual property available for licensing from over 20 Department of Energy (DOE) national laboratories and federal sites. It is the first comprehensive database designed for industry engagement to allow access to all the innovation funded by DOE — patents and both open-source and proprietary software — with the goal of technology transfer.





AWARDS

INDIVIDUAL AND SMALL TEAM AWARDS

ROOKIE OF THE YEAR

Recognizes the efforts of an individual FLC laboratory technology transfer professional who has demonstrated outstanding work in the field of technology transfer and is new to technology transfer, with three years (or less) experience in a federal technology transfer position.

OUTSTANDING RESEARCHER/ SMALL RESEARCH TEAM

Recognizes outstanding individual researchers or small research teams involved in technology transfer activities who have provided leadership and noteworthy support to the technology transfer process, furthering their agency's mission and, thus, that of the FLC.

OUTSTANDING TECHNOLOGY TRANSFER PROFESSIONAL

Recognizes the efforts of an FLC laboratory technology transfer professional who has demonstrated outstanding work in transferring a technology in a manner significantly over and above what was called for in the normal course of their work.

LABORATORY DIRECTOR OF THE YEAR

The FLC National Advisory Council honors Laboratory Directors who have provided exemplary leadership in promoting, supporting, and executing the technology transfer mission of their organization. The Award's intent is to recognize the critical importance of top-down leadership and support to the overall success of a laboratory's technology transfer mission while the nominee has led this laboratory.

HAROLD METCALF SERVICE AWARD

Recognizes an FLC member laboratory employee who has provided sustained significant service to the FLC as an organization.

ROOKIE OF THE YEAR

Melissa Keen

Advancing Innovation Through Leadership, Communication, and Outreach

Melissa Keen has rapidly emerged as a leader in technology transfer. Since joining the Office of Research and Technology Transfer (ORTT) at the U.S. Army Engineer Research and Development Center (ERDC) in August 2021, she has already earned three awards: a Civilian Service Achievement Medal for outstanding performance as a Technology Transfer Officer, an ERDC award for Outstanding Innovation in Research and Development for the Submersible Matting System (SUBMAT), and an ERDC Award of Excellence for tremendous leadership, dedication, and contributions to the Research and Development 2024 (RD24) workshop.

Keen's command of contractual language and organizational strategy was essential for streamlining the invention disclosure processes and intellectual property (IP) management. She launched several ERDC "firsts," including pursuing new agreement types and advertising technologies on Sam.gov. She also holds key leadership and communication roles at ERDC and was invited to join the Emerging Leaders Group (ELG) in 2022. The significance of Keen's contributions to technology transfer advancement is reflected in her impressive and wide-ranging achievements supporting ERDC's seven laboratories.

Among other accomplishments, Keen developed ERDC's first fillable invention disclosure form via PDF, increased provisional patent application use, and created an improved patent licensing workflow. She has been instrumental in simplifying and strengthening ERDC's technology transfer process. In doing so, Keen has proven excellent and effective at timely and varied negotiations. Her standout achievements include completing an urgent agreement with the Federal Emergency Management Agency (FEMA) within one day for disaster-relief facility use, negotiating and executing a SUBMAT exclusive license, and finalizing a high-priority Cooperative Research and Development Agreement (CRADA) within just five weeks, rather than multiple months.

As an ELG and Strategic Communications Group member, Keen is uniquely positioned to enhance ERDC's presence in the technology community and promote better communication across the institution for coordinated technology transfer success. In these roles, Keen has helped plan several industry events, served on panels, facilitated roadshows for ERDC labs, compiled Ignite — the ORTT quarterly technology transfer newsletter — and mentored new employees.

In 2024, SUBMAT received the U.S. Army Corps of Engineers' prominent Innovation of the Year Award. Once the technical team with industry partner Nearshore Logistics determined they should engage with ORTT to protect its new IP, Keen volunteered to guide the inventors through the technology transfer and IP protection process. In the past three years, Keen has processed more than 70 agreements and amendments to facilitate ERDC partnerships and has received and managed one-third of the total invention disclosures submitted by ERDC innovators since 2022.

The impact of Keen's extraordinary service is profound. She excels at interdepartmental and interagency collaboration, delivering numerous benefits and successes to ERDC. She has become an exemplary mentor to interns and other employees and an ace planner for ERDC's highest-profile events. Keen's exceptional leadership, communication, and mastery of technology transfer mechanisms help bolster ERDC as a technology powerhouse.

ERDC
ENGINEER RESEARCH & DEVELOPMENT CENTER

THE LAB:

Office of Research and Technology Transfer, U.S. Army Engineer Research and Development Center
Department of Defense

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The impact of Keen's extraordinary service is profound. She excels at interdepartmental and interagency collaboration, delivering numerous benefits and successes to ERDC.

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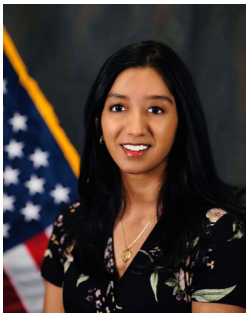

Bhoomija Hariprasad

VA | U.S. Department of Veterans Affairs

VA Technology Transfer Program
Department of Veterans Affairs

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Bhoomija Hariprasad began her work as a technology transfer specialist in the Department of Veterans Affairs (VA) Technology Transfer Program in 2023. She manages the IP portfolio and technology transfer agreements for all VA medical centers in Texas, including four major hospitals in Houston, San Antonio, Temple, and Dallas, and recently expanded to cover VA centers in Puerto Rico. Her background in biomedical engineering provided a strong foundation for her work managing these processes, including invention disclosure analyses, IP management and licensing, and technology transfer agreements for biomedical and healthcare technology.

During her first year in the VA, Hariprasad created a working group focused on improving the visibility of the technology transfer program throughout the VA, securing leadership buy-in and recruiting seven members within a month. Today, Hariprasad leads the group, showcasing researchers who have had their inventions commercialized to benefit veterans and the general population. When she discovered an education gap in tech transfer law, Hariprasad helped launch quarterly webinars to teach VA employees about patent prosecution.

Hariprasad introduced the idea of using videos to market VA technologies available for technology transfer. Her format is now used across the entire VA. Her creativity in marketing technology transfer's success within the VA and with the public is masterful. For instance, she interviewed Mark Stibich and Sarah Simmons of Xenex, the exclusive licensees of the VA's TrackMate technology, on a video podcast. This partnership previously received an FLC Excellence in Technology Transfer Award, and Hariprasad seized the opportunity for a podcast during routine outreach at the product launch. She has taken great initiative and shown incredible work ethic and confidence in her short time at the VA.

Jason Foster

NASA

Johnson Space Center
National Aeronautics and Space Administration

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Jason Foster joined the NASA Johnson Space Center (JSC) Technology Transfer Office (TTO) in July 2022 and quickly established himself as a vital team member. He immediately took on a key role in supporting innovators with New Technology Reports (NTRs), demonstrating strong leadership in project management and process improvement initiatives. His impressive attention to detail and ability to learn quickly made him indispensable to the TTO. In a short time, Foster has taken on significant responsibilities and leadership roles, including Intellectual Property (IP) Manager, Licensing Specialist, and Lead NTR Specialist. His exemplary work ethic and commitment to strengthening collaboration with innovators, legal teams, commercial companies, and colleagues have elevated the TTO's impact.

In fiscal year 2024 (FY24), Foster contributed to 158 NTRs — the highest number disclosed by federal employees at any NASA center. Foster's thorough and diligent work ensures only well-vetted NTRs advance, optimizing the use of resources and strengthening JSC's IP portfolio. He also independently negotiates license agreements with commercial entities, contributing to a steady increase in executed licenses at NASA JSC. In FY24, he helped achieve 41 executed licenses — the highest recorded number of executed licenses in JSC's history.

Most notably, Foster pioneered a new tool and process for tracking leads to increase the capture of invention disclosures. During FY24, he led a team of seven to aggressively target and increase new technology reports. Through his leadership and encouragement, the team secured over 120 previously undisclosed NTRs in the final three months of the fiscal year. By implementing new decision-making tools and onboarding new team members, Foster has already had a transformative and long-lasting influence on the NASA JSC TTO's processes and culture.

OUTSTANDING RESEARCHER/ SMALL RESEARCH TEAM AWARD

Jake Gentle

Developing and Steering Commercialization Processes for Key Technologies

Jake Gentle is a Senior Program Manager and Supervisor for Idaho National Laboratory (INL). As a formally trained Power Systems Engineer, Gentle is INL's Laboratory Relationship Manager to the U.S. Department of Energy's (DOE) Office of Electricity's Grid Systems & Components programs and the Wind Energy Technologies Office. He leads teams through the development and commercialization of technologies, providing technical oversight and coordinating innovative, state-of-the-art solutions for the following DOE offices: the Office of Energy Efficiency and Renewable Energy, the Office of Electricity, and the Cybersecurity, Energy Security, and Emergency Response Office. He also assists several electric power industry partners. Gentle currently serves as the Smart Electric Power Alliance Cybersecurity Working Group Co-Chair and is an RE+ Core Education Committee member for 2025.

In these roles, Gentle has helped develop and lead the commercialization of five technologies that enable a fundamental shift to modern, digitally connected electric grids that must withstand cyberattacks, variable generation and load, and extreme natural disasters. In 2009, Gentle led a research team that created the General Line Ampacity State Solver (GLASS), a grid-enhancing technology that allows utilities to use 10 to 40% above their current transmission-line capacity. Now, GLASS is a key component used during extreme power demand events, such as hurricanes and wildfires, helping route power where it's needed most.

Since developing GLASS, Gentle has contributed to the commercialization of four additional technologies that combine software and hardware to increase grid resiliency and security. One of those technologies is Master State-awareness Estimator (MSE), a methodology that processes and reports the real-time status of a power system and can prevent cyberattacks in a transmission and distribution grid. MSE integrates distributed state estimation and communications-traffic analysis for high-confidence, independent analyses of substations. By differentiating cyberattacks from benign anomalies, his technology represents a significant step forward in supervising and protecting the electric grid.

Individually, the technologies Gentle helped develop each represent a significant advancement in modernizing electric grids. Together, they signal a fundamental shift to more secure, digitally connected electric grids. The commercialization processes for these technologies included early-stage R&D, Energy I-Corps, a Cooperative Research and Development Agreement (CRADA), and the Technology Commercialization Fund. To develop industry and government standards, the development teams worked with the Institute of Electrical and Electronics Engineers and its international counterpart Le Conseil international des grands réseaux électriques (CIGRE).

As Gentle himself puts it, "These five technologies are all working toward one solution: helping make our power grid and critical infrastructure more reliable and resilient to cyberattacks and natural hazards." From the beginning, Gentle and his fellow researchers engaged not just with industry, academia, state and local governments, and other federal laboratories, but also with national and international regulators, engineering standards organizations, and trade associations.

Idaho National Laboratory

THE LAB:

Idaho National Laboratory
Department of Energy

Individually, the technologies Gentle helped develop each represent a significant advancement in modernizing electric grids. Together, they signal a fundamental shift to more secure, digitally connected electric grids.

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OUTSTANDING RESEARCHER/ SMALL RESEARCH TEAM AWARD

Christina Wildfire

Driving New Technologies, Spurring New Business

Christina Wildfire, PhD, is an expert in microwave (mWave) technology and helped establish this capability in the National Energy Technology Laboratory (NETL) at the Department of Energy (DOE). This area of research is on the next frontier of science and holds the promise of disruptive innovation. Wildfire leads the Center for Microwave Chemistry, now identified as one of NETL's key lab initiatives. She understands that impactful research requires collaboration with industry stakeholders who will benefit from research that pushes the boundaries of current scientific capabilities. She has initiated 17 technology transfer partnership agreements, drove the development of new technology that led to two startups, and is currently an Oppenheimer Science & Energy Leadership Program Fellow appointee, as well as a Presidential Early Career Award for Scientists and Engineers winner.

Wildfire has been a researcher at NETL since 2016 through the DOE Oak Ridge Institute for Science and Education. She has a deep understanding of both her research and the lab's capabilities. For example, during an ARPA-E Summit, Wildfire met with Baker Hughes to discuss their areas of interest and technological needs and then connected them with multiple research teams at NETL. Her breadth of knowledge and keen sense of partnership opportunities, mechanisms, and processes enhance and expand NETL's technology transfer activities.

Wildfire has improved the DOE's return on investment metrics by implementing structured processes and models, such as those found in translational research. For instance, she translated early-stage research into the development, demonstration, and deployment of mWave technology. She led a technical presentation on mWave technology for distributed hydrogen, which led to Cecilia Energy contacting NETL about a specific application. This outreach resulted in a Cooperative Research and Development Agreement (CRADA) to leverage NETL's capabilities in the Reaction Analysis and Chemical Transformation facility and the Joule supercomputer to study and understand the economic viability of using mWave to convert waste plastics into hydrogen and carbon nanotubes. These products will provide sustainable energy and carbon materials for advanced manufacturing, and the CRADA has already spurred the filing of intellectual property (IP) and international patent applications in 56 countries and Taiwan.

By participating in DOE's Energy I-Corps, Wildfire has strengthened her skill and resolve to not only pursue new discoveries but also ensure that they are adopted to deliver affordable and practical energy solutions. A partnership among West Virginia University, NETL, and Malachite Technologies led to the development of a process using microwaves to lower the processing temperature and pressure for ammonia synthesis. The group has worked through significant challenges, including scaling up microwave reactors. The startup Viaduct Technologies emerged from the initial IP developed from this collaboration and licensed the technology. Within months of incorporation, Viaduct was awarded $315,000 to further develop its clean energy technology. Wildfire also leads the NETL team that was awarded $1.4 million to develop new technology for recovering and reusing plastics to create new polymer products.

NATIONAL ENERGY TECHNOLOGY LABORATORY

THE LAB:

National Energy Technology Laboratory
Department of Energy

> [Wildfire's] breadth of knowledge and keen sense of partnership opportunities, mechanisms, and processes enhance and expand NETL's technology transfer activities.

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OUTSTANDING RESEARCHER/ SMALL RESEARCH TEAM AWARD

Hongyou Fan
A Champion for Technology Transfer

Hongyou Fan, PhD, is a researcher, manager, and educator whose 25-year career is marked by exceptional leadership in technology transfer activities. His inventions have won multiple R&D 100 awards and have been licensed and commercialized by industry. His technology transfer efforts have been lauded by the FLC, as well as by state and national legislators. He has supported numerous Department of Energy (DOE) and Sandia National Laboratories (SNL) technology transfer initiatives, including Energy I-Corps, to foster innovation and an entrepreneurial mindset on his teams.

As a National Lab Professor, Fan mentors students and actively supports local STEM programs, helping to develop the next generation of scientists and engineers. He has shared his research through numerous publications and international presentations for professional organizations like the Materials Research Society and American Chemical Society, which have also recognized his contributions in addressing key technical challenges across industry, academia, and national labs. Through all the different facets of his work at SNL and various technology transfer organizations, Fan continues to create valuable technology advances benefiting U.S. national security and industry.

In his current roles as Department Manager of Geochemistry, Sandia Manager of the Basic Energy Sciences Geoscience Program at the DOE, and Manager of the Sandia Office of Fossil Energy and Carbon Management Critical Minerals Program, Fan actively promotes technology transfer and encourages his teams to participate. In 2024, as part of Energy I-Corps, two of Fan's team members completed almost 100 customer discovery interviews across industry, academia, and government for their "Chat GPT for Materials Design" technology. These insights are shaping the technology's commercialization strategy.

Fan's groundbreaking contributions to technology transfer have earned him six FLC Awards, including three in the past five years. His development of porphyrin nanoparticle disinfectants to combat COVID-19 and other pathogens led to the technology's commercialization by Lunano and earned the 2024 FLC Mid-Continent Regional Technology Transfer Award. His leadership in translating scientific discoveries into market-ready technologies is further evidenced by eight R&D 100 Awards for himself and his teams, 21 patents, three pending patents, and hundreds of publications for his work in materials manufacturing, nanoelectronics, and critical materials supply chains.

In 2019, the New Mexico Legislature recognized Fan as a serial innovator. In June 2024, he briefed New Mexico State Representative Meredith Dixon on SNL's critical minerals technology and commercialization. Through that, he sought assistance from the state to overcome obstacles in technology transfer, such as cost-sharing and gaining support from tribal communities to bolster New Mexico's energy sector. Fan's dedication to transferring innovative technologies from the lab to practical applications has produced significant societal impact.

Sandia National Laboratories

National Nuclear Security Administration

THE LAB:

Sandia National Laboratories,
National Nuclear Security Administration
Department of Energy

> Through all the different facets of his work at SNL and various technology transfer organizations, Fan continues to create valuable technology advances benefiting U.S. national security and industry.

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OUTSTANDING TECHNOLOGY TRANSFER PROFESSIONAL

Eric Rosenberg

The Architect of U.S. Cyber Command Laboratory's T2 Efforts

Since 2021, Eric Rosenberg has served as the lead technology transfer (T2) counsel for the U.S. Cyber Command (USCYBERCOM) T2 Program. In 2018, prior to arriving at USCYBERCOM, Rosenberg served as the Chief of Cyber Intellectual Property Law to the Air Force Service Cyber Component laboratories at 67th Cyberspace Wing (67 CW) and 688th Cyberspace Wing (688 CW). Over the past five years, Rosenberg has negotiated, drafted, and written legal reviews for 60 Cooperative Research and Development Agreements (CRADAs) worth over $134 million, three patent license agreements that have already generated more than $30,000 of their expected $145,000 per year in royalties, and 13 Educational Partnership Agreements. Furthermore, he successfully spearheaded efforts to designate 67 CW and USCYBERCOM as federal laboratories in 2019 and 2023, respectively.

Rosenberg authored the United States Cyber Command Instruction 5535.01, United States Cyber Command Technology Transfer (September 15, 2023), which established T2 policy at USCYBERCOM. He authored a laboratory designation memorandum and the supporting 16-page legal review, which examined whether USCYBERCOM qualified as a laboratory for T2 purposes and the legality of a warfighting Combatant Command like USCYBERCOM being designated as a laboratory.

Additionally, Rosenberg has headed up the development and proliferation of the Department of Defense's (DoD's) Critical Infrastructure (CI) CRADAs. These agreements allow federal laboratories and CRADA partners to pool their resources to collaboratively research and develop improved cyberspace tactics, techniques, and procedures for critical infrastructure networks, especially Operational Technology-Industrial Control System environments.

Rosenberg has participated in all aspects of the CI CRADA negotiation, drafting, planning, and execution, often leading negotiations with potential partners. He regularly participates in DoD and public events on T2, particularly about CI CRADAs. Most notably, Rosenberg has developed the legal theory behind CI CRADAs, which currently serves as the only legal mechanism in the U.S. government that allows for activities that could incidentally harden a partner's network. To date, USCYBERCOM and its Air Force Cyber Component have 10 CI CRADAs in place.

Rosenberg's efforts have gained the attention and support of Congress. The Senate Armed Services Committee, as part of its Fiscal Year 2025 National Defense Authorization Act (FY25 NDAA) Report, recognized the value of USCYBERCOM's CI CRADAs in Guam and called for them to improve Guam's cybersecurity posture as part of a broader Guam Cybersecurity Strategy. Additionally, Rosenberg penned the legislative proposal that became FY25 NDAA Section 1705, which fixed an oversight by amending 15 U.S.C. § 3710a to enable federal laboratories to enter into CRADAs with territorial governments, such as the Government of Guam.

Another example of Rosenberg's prowess is his licensing of 67 CW's Whiddler patents to two small businesses. Whiddler is a multi-threaded, multi-process cluster-capable application that performs static file analysis to predict the probability of a file being malicious. The Whiddler technology transfer created significant economic value. One of the partners expected an increase up to $25 million in annual revenue as a result of the license and an increase to its workforce by up to 10% as it scales up in accordance with its business commercialization plan.

THE LAB:

U.S. Cyber Command Laboratory
Department of Defense

> Over the last five years, Rosenberg has negotiated, drafted, and written legal reviews for 60 CRADAs worth over $134 million, three patent license agreements that have already generated more than $30,000 of their expected $145,000 per year in royalties, and 13 Educational Partnership Agreements.

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LABORATORY DIRECTOR OF THE YEAR

Angela D. Lewis

Raising the Bar for Innovation

Under the strong leadership of Technical Director Angela D. Lewis, PhD, Naval Surface Warfare Center, Crane Division (NSWC Crane) has grown an expanding intellectual property (IP) portfolio with significant commercial potential, while parallel growth of NSWC's T2 program further reflects her influence. Lewis has helped foster relationships with hundreds of organizations across industry, academia, non-profits, and state and local government. She has also hosted meetings on T2 philosophy and best practices with colleagues from the National Aeronautics and Space Administration (NASA) Glenn Research Center, the U.S. Coast Guard's Research and Development Center, the Naval Undersea Warfare Center Keyport Division, Portsmouth Naval Shipyard, and the U.S. Patent and Trademark Office.

Lewis raised the status of innovation ecosystem engagement to one of the lab's five foundational principles, highlighting its importance to NSWC Crane's overall success. One of her passions is workforce development. During her leadership, the innovation ecosystem spawned NSWC Crane's learning management system to help its teams learn more about the importance of the innovation ecosystem and the need for T2 partners. Lewis has also championed the creation of Crane Division University, which offers programming for adult learners.

Internally, Lewis is a champion for all things T2 at NSWC Crane. She encourages employees to participate in professional associations linked to the lab's technology developments and pursuit of commercialization — both to enhance their own knowledge and to expand the lab's connections within those networks. She also encourages staff to engage with the FLC and Office of Under Secretary of Defense Programs, resulting in several employee achievements, including multiple FLC Award recipients, over the past three years.

Lewis was a key driving force behind the formation of the Indiana Research Consortium — combining the resources of the University of Notre Dame, Purdue University, and Indiana University. The universities signed a Memorandum of Agreement to engage with NSWC Crane through the consortium and collaborate on research initiatives through a multiparty Cooperative Research and Development Agreement (CRADA) focused on microelectronics, hypersonic vehicles, energetic materials, cyber physical systems, and workforce development. Lewis also secured commitments from consortium institutions to support warfighters by engaging with NSWC Crane. Thanks to Lewis' efforts, Indiana University will invest $111 million to advance its leadership in microelectronics and nanotechnology. Purdue University will establish a permanent presence near NSWC Crane for collaboration on research related to national security with an initial investment of $2 million, and eventually growing to $40 million.

Since Lewis transitioned to the role of Technical Director, 339 active technology transfer agreements have been signed, a 41% increase during her tenure. In fiscal year 2024, 112 agreements were signed, a year-over-year increase of 47%. One of her most lasting achievements has been establishing and guiding Silent Swarm, a series of annual experimentation events sponsored by the Department of Defense Office of the Under Secretary of Defense for Research and Engineering and the Integrated Sensing and Cyber office. Silent Swarm began in 2022 and focuses on maturing and advancing technologies that are employed on small unmanned systems across multiple domains. From a return-on-investment perspective, feedback from both government and industry has been positive. NSWC Crane has reached extraordinary achievements in T2 because of Lewis' guidance and leadership.

NAVSEA
WARFARE CENTERS
CRANE

THE LAB:

Naval Surface Warfare Center
Crane Division
Department of Defense

NSWC Crane has reached extraordinary achievements in T2 because of Lewis' guidance and leadership.

Go to
Honors Gallery

HAROLD METCALF SERVICE AWARD

Linda Burger

Strategic, Efficient, and Organized Leadership

Linda Burger's contributions to the FLC began in 2016 when she first served as a Member at Large. She recognized the value of FLC Business and made the National Security Agency's (NSA) Office of Research and Technology Applications (ORTA) become an early adopter. From 2019 to 2020, Burger served as the Co-Chair of the FLC Education & Training Committee (later renamed the Educate Committee). In that role, she led efforts to increase training opportunities available to the FLC community in a more streamlined and beneficial manner. She envisioned and championed Technology Transfer Career Paths, a basis for charting novice-to-expert training tracks for T2 professionals, and advocated for standardized course content development, enabling consistent delivery by multiple instructors. These initiatives provided the foundation for the FLC to scale its training activities to provide greater impact.

As Vice Chair of the FLC Executive Board from 2020 to 2021, Burger helped navigate the FLC through its first virtual national meeting, which had more than 800 attendees, a record for any FLC event. She was elected as Chair in 2021. In that leadership role, Burger instituted two kinds of goals to complement the FLC's strategic plan. The first type was SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) goals. The FLC Board adopted and exceeded SMART goals to increase event registrations by 30%. Second, she led the Executive Board through the development of two Big Hairy Audacious Goals (BHAG) to stretch the organization. The first BHAG focused on interagency peer learning, mentoring, and information sharing, and resulted in the FLC Mentoring program. The second highlighted increasing engagement with labs that needed more direct consideration. Burger's time as Chair ensured that the FLC maximized its efforts to inform, lead, and train its members and further the organization's mission. She also served on several committees while leading the FLC Executive Board, including the Program and Professional Development Subcommittee and the Executive Committee. Today, Burger continues her involvement with the FLC as Chair Emerita.

Under Burger's leadership, NSA ORTA won multiple awards from the FLC, including three Excellence in Technology Transfer awards. Also, NSA technologies were profiled in the FLC Planner eight times from 2017 to 2024. In 2020, ORTA received the highest accolade for Department of Defense T2, the George F. Linsteadt Award for Excellence in Technology Transfer. These recognitions earned NSA ORTA greater visibility as an organization with significant T2 expertise.

Expanding partnership opportunities was also an important thread in Burger's FLC career. In her early years, she connected the Hawaii T2 community with the FLC, creating a new footprint there for the organization. She emphasized engagement with smaller laboratories, consulting on their T2 efforts. She also assisted other intelligence community elements to build and grow their tech transfer programs to activate T2 at their respective agencies. Burger's service to the FLC ensured that the organization moved strategically and efficiently as an organization, while remaining an invaluable and relevant resource to the T2 community.

OFFICE OF RESEARCH & TECHNOLOGY APPLICATIONS
NATIONAL SECURITY AGENCY

THE LAB:

Office of Research and Technology Applications
National Security Agency (Former)

> Burger's time as Chair ensured that the FLC maximized its efforts to inform, lead, and train its members and further the organization's mission.

Go to Honors Gallery

Laboratory Director of the Year & Harold Metcalf Service Award

Honorees from the last 10 years

Recipients of the prestigious Laboratory Director of the Year and Harold Metcalf Service Awards exemplify bold leadership, strategic vision, and outstanding service. Their contributions to the technology transfer industry have shaped federal innovation and created exceptional impact. Here, we honor the legacy of our last decade of winners in each category, celebrating the path of progress, knowledge, and discovery they have forged.

LAB DIRECTORS OF THE YEAR

Willie May, PhD (2016)
National Institute of Standards and Technology, DOC

Captain Jeffrey T. Elder (2017)
Naval Surface Warfare Center, Crane Division, DoD

Philip Perconti, PhD (2018)
Army Research Laboratory, DoD

Larry Clark, PhD (2019)
National Wildlife Research Center, USDA

Paul Kearns, PhD (2020)
Argonne National Laboratory, DOE

Walter Copan, PhD (2021)
National Institute of Standards and Technology, DOC

David Pittman, PhD (2021)
Engineer Research and Development Center, DoD

Brian J. Anderson, PhD (2021)
National Energy Technology Laboratory, DOE

Bartley P. Durst (2022)
Geotechnical and Structures Laboratory, DoD

Eric Moore, PhD (2023)
Command Chemical Biological Center, DoD

Martin Keller, PhD (2024)
National Renewable Energy Laboratory, DOE

Angela D. Lewis, PhD (2025)
Naval Surface Warfare Center, Crane Division, DoD

HAROLD METCALF SERVICE AWARDEES

Sarah Bauer (2016)
National Institutes of Health, Office of Science Policy, HHS

Mojdeh Bahar, JD, MA, CLP (2018)
Agricultural Research Service, USDA

Robert Griesbach, PhD (2020)
Agricultural Research Service, USDA

John Dement (2022)
Naval Surface Warfare Center, Crane Division, DoD

John Eisemann (2023)
National Wildlife Research Center, USDA

Jenna Dix (2024)
Naval Surface Warfare Center, Crane Division, DoD

Linda Burger (2025)
National Security Agency, Office of Research and Technology Applications, DoD

There were no recipients of the Harold Metcalf Service Award in 2017, 2019, and 2021.


2.5x



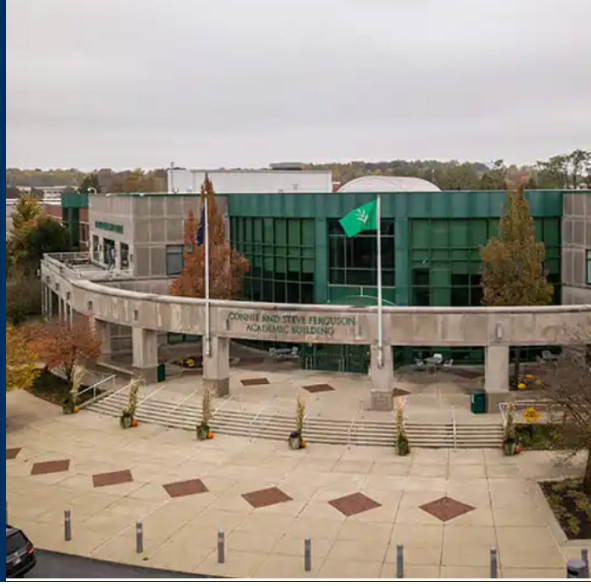
AWARDS

REGIONAL TECHNOLOGY TRANSFER

The FLC has six regions across the country. The Regional Technology Transfer Award recognizes FLC member labs who have performed outstanding regional technology transfer activities in a specific region (i.e., the region where the lab is located or where the tech transfer efforts impacted a specific region).

REGIONAL TECHNOLOGY TRANSFER: MIDWEST

Technology Transfer for Beginners



THE PROBLEM: Defense subcontractor numbers are in decline nationally and small business contracts specifically are down 70%. In south-central Indiana, very few of the 575 manufacturing or service businesses that align with the efforts of the Strategic Defense Accelerator (SDA) – an ongoing effort by several regional entities to expand the number of small businesses in the defense and manufacturing sectors — have any defense business, due to limited resources and training to meet defense contracting requirements. To drive growth, create jobs, and strengthen the region's defense and manufacturing industries, a new partnership had to be formed.

THE SOLUTION: The Naval Surface Warfare Center, Crane Division (NSWC Crane) Technology Transfer Office collaborated with the Gayle & Bill Cook Center for Entrepreneurship at the Ivy Tech Community College Bloomington campus to help small businesses in five rural counties build capacity, capability, and a better understanding of how to conduct business with the Department of Defense (DoD). Because most T2 training material available is oriented toward the practitioner, NSWC Crane's role in the collaboration focused on developing T2 curriculum designed for the user. As part of this effort, NSWC Crane's T2 Office developed a free "T2 for Beginners" course for the Ivy Tech learning management system.

THE TECH TRANSFER MECHANISM: Over the past few years, NSWC Crane's T2 Office prioritized strategically engaging with the local economic development ecosystem in the Indiana Uplands area, building strong relationships that have led to pitch competitions, a startup accelerator, and greater engagement with entrepreneurs. At the same time, regional partners have sought to engage NSWC Crane to stimulate economic growth and increase Crane's connection with the region's defense industrial base. These connections led to NSWC Crane's participation in the Indiana SDA Defense Procurement Accelerator.

THE OUTCOMES: Since the launch of T2 for Beginners in April 2024, 62 students have enrolled in the program. This effort has created opportunities for small businesses and entrepreneurs to learn about technology transfer at their own pace from anywhere. It raises awareness and opens doors for them to integrate T2 mechanisms into their business strategies, allowing them to work with the DoD on its technical challenges for the warfighter. By growing their knowledge, these businesses are better able to leverage the tools and expertise available in a federal lab.

NAVSEA
WARFARE CENTERS
CRANE

THE LAB:

Naval Surface Warfare Center, Crane Division
Department of Defense

THE PARTNER:

Ivy Tech Community College Bloomington

THE TEAM:

Maria Duran *NSWC Crane*

Amanda McCullough *NSWC Crane*

Steve Bryant *Gayle & Bill Cook Center for Entrepreneurship, Ivy Tech Community College Bloomington*

Go to Honors Gallery

PHOTO CAPTION:

Ivy Tech Community College Bloomington Campus.

REGIONAL TECHNOLOGY TRANSFER:
NORTHEAST

Maritime Domain Awareness Technology Transition Testbed — Operational Demonstration COQUI

Figure 1.


Figure 2.

THE PROBLEM: Drugs, human trafficking, and related violence from maritime trafficking affect millions of people — not only in the Caribbean, but also the mainland U.S., including the 95,000 miles of coastline. When engaging with a suspicious vessel, enforcement personnel often have limited information regarding weapons or bad actors on board, putting agents at risk. Coast Guard operations rely on Maritime Domain Awareness (MDA) data, but gathering it traditionally consumes vast resources that could be preserved for higher-priority missions. A reduction in personnel risk and increase in MDA intelligence was necessary.

THE SOLUTION: The Coast Guard Research and Development Center (RDC) devised a rapid technology transfer testbed, integrating remote sensing, networking, and data transport technologies to enhance future MDA capabilities. Through a month-long Operational Demonstration COQUI, researchers deployed these technologies alongside Coast Guard operators in real operating environments. To improve actional MDA and enhance border security for Coast Guard and Customs and Border Protection (CBP) maritime operations, the RDC deployed two uncrewed surface vessels and two uncrewed aircraft systems throughout Mona Passage — a 3,200-square-mile region between Puerto Rico and the Dominican Republic known for frequent trafficking activity. Using advanced cameras and sensors, the RDC uncrewed systems provided unprecedented visuals and access to high-risk areas, significantly improving MDA capabilities. These systems relayed critical intelligence to the Coast Guard and CBP command centers, enhancing operational decision-making and response efforts.

THE TECH TRANSFER MECHANISM: Developing the rapid technology transfer testbed was a multi-year effort and required expertise and collaboration across virtually all research branches, including Aviation, Surface, IT & Networks, Rapid Response Technology, and Environments & Waterways. The technology transfer effort is ongoing, as RDC and its Caribbean-based Coast Guard and CBP partners are developing another phase of regional deployments. The successful transition of RDC technology during COQUI was so widely regarded that regional teams have redesigned aspects of upcoming, large-scale enforcement operations to better incorporate the technology.

THE OUTCOMES: The innovative research conducted by the RDC team will contribute to improving the Coast Guard's MDA capabilities as an element of border security, while addressing major enforcement mission needs and balancing cost, risk, and overall feasibility. The month-long deployment demonstrated how improved technology enables Coast Guard and CBP units to conserve and reallocate substantial operational resources. Overall, significantly less illicit activity was recorded in Mona Passage during RDC's demonstration. CBP also reported that the technology disrupted smuggling efforts so effectively that agents could intervene with greater confidence, leading to several arrests.

THE LAB:

U.S. Coast Guard Research and Development Center
Department of Homeland Security

THE TEAM:

Shelly Wyman *RDC*
Paul Harvey *RDC*
Sean Lester *RDC*
SK3 Luis Rodriguez Rivera *RDC*
LCDR Ryan Cassidy *RDC*
Mike Coleman *RDC*
LTJG Madison Pugh *RDC*
ENS Octavio Estrada *RDC*
DJ Hastings *RDC*
Scott Fields *RDC*
Marie Whalen *RDC*
Evan Gross *RDC*
Derek Meier *RDC*
LTJG George Wismar *RDC*
LT Jordan Frederick *RDC*
James Spilsbury *RDC*
Steve Dunn *RDC*
Patrick Ryan *RDC*
Jay Carey *RDC*

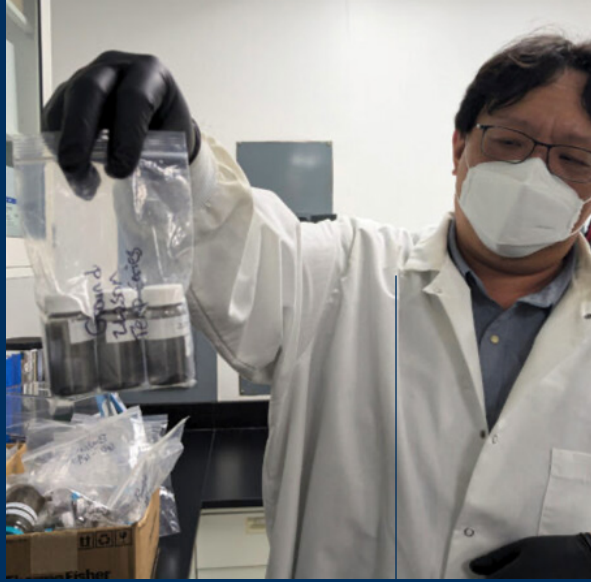
Go to
Honors Gallery

PHOTO CAPTIONS:

Figure 1: A 26-foot RDC uncrewed surface vessel navigates shallow coastline waters with the Customs and Border Protection Caribbean Air and Marine Operations Center (CAMOC) partially visible on shore.
Figure 2: The RDC's 29-foot optionally crewed vessel picks up speed to investigate a target offshore with hopes to outpace incoming wet weather.

REGIONAL TECHNOLOGY TRANSFER:
FAR WEST

Harnessing Silicon for Low-Cost, High-Performing Batteries



THE PROBLEM: The United States faces the challenges of balancing rising electricity demand with energy system decarbonization. In the Pacific Northwest, these challenges, combined with ambitious state emissions reduction targets, have driven the growth of a regional clean energy industry and a wave of startup companies. While new technologies exist to tackle this issue, the size and cost of such innovations have, until recently, been prohibitive.

THE SOLUTION: Pacific Northwest National Laboratory (PNNL) is a key player in the regional clean energy ecosystem and a leader in battery technology development, working to accelerate adoption of innovations that spur regional economic growth and energy decarbonization. Partnering with Seattle-based startup Ecellix, PNNL commercialized a novel material that sharply increases storage capacity in next-generation lithium batteries. PNNL-developed silicon anodes boost battery capacity by 60%, cut weight by 50%, and overcome the production cost issues that previously hindered commercialization. PNNL developed an organic-solvent-assisted etching process to form micron-sized porous silicon that withstands expansion during battery operation. Researchers also pioneered a wet chemical process to coat carbon on porous silicon and created new electrolytes to boost cycle and storage life.

THE TECH TRANSFER MECHANISM: Through collaborations with Washington State University, veteran-owned startup Ecellix saw the strong performance of PNNL's silicon anode material and approached the lab about a partnership. Early discussions exploring that partnership occurred under a non-disclosure agreement in March 2023. That led to an option agreement in May 2023 for an exclusive license and a non-commercial, research-use license. In March 2024, the partners signed a commercial exclusive license agreement.

THE OUTCOMES: By 2031, about 40% of global lithium-ion battery revenues are expected to come from cells containing silicon anodes. With the anode making up 18% of the price of a lithium-ion cell, revenues for silicon anode materials are projected at $36 billion, growing 67% annually. Capturing just 1% of this projected market would equate to $360 million in revenues annually. Additionally, Ecellix's new plant is contributing to the re-emergence of U.S.-based battery manufacturing after years of offshoring.

Pacific Northwest
NATIONAL LABORATORY

THE LAB:

Pacific Northwest National Laboratory
Department of Energy

THE PARTNER:

Ecellix

THE TEAM:

Ji-Guang (Jason) Zhang *PNNL*
Allen Tuan *PNNL*
Ju-Myung Kim *PNNL*
Jerry Schwartz *Ecellix*
Jason Schwartz *Ecellix*
George Cintra *Excellix*

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Honors Gallery

PHOTO CAPTION:

Ecellix engineer Younghwan Cha holds up samples of eCell, the high-performing silicon anode product developed using technology transferred from PNNL. Photo Credit: GeekWire Photo/Lisa Stiffler.

2026 FLC AWARDS CALENDAR

Who Will Be the Next History Makers? **You Tell Us.**

Thanks to all who submitted, judged, and participated in the 2025 FLC Awards. We name and celebrate awardees not only to honor those raising the bar in federal tech transfer, but also to learn from their ingenuity, be inspired by their persistence, and remember that greatness is among us.

Take notice of the history-makers around you — on your team, in your meetings, and among your collaborators. **Submissions for the 2026 FLC Awards open in July 2025,** but you can start now by reflecting on, and gathering information about your team's standout achievements.

THE AWARDS CATEGORIES WILL INCLUDE:

Excellence in Technology Transfer

Interagency Trans-Disciplinary Partnership

State and Local Economic Development

Impact

Technology Transfer Innovation

Rookie of the Year

Laboratory Director of the Year

Outstanding Researcher/Small Research Team

Outstanding Technology Transfer Professional

Harold Metcalf Service Award

Regional Technology Transfer

Make sure you're subscribed to the FLC's mailing list for Awards announcements, updates, and information. Contact **info@federallabs.org** for more.

2026 FLC Awards Program Timeline

July 2025
Call for submissions opens

October 2025
Submissions deadline and judging period

Winter 2025 – 26
Winners are notified and announced

Spring 2026
Awardees honored at the FLC National Meeting

FLC: Promoting, Educating, and Facilitating T2 for You

PROMOTE YOUR WORK

FLC Awards:

Want to see yourself or your team in this publication next year? Apply for the 2026 FLC Awards! The Call for Submissions will open in early July and close in October 2025.

Planner:

Display your T2 work in full color for all to see.

Labs in Action:

Submit your T2 successes at any stage of action. Priority for Labs in Action features will be given to those technologies that have reached commercialization, but it is not a requirement. Submissions accepted on a rolling basis.

LabTech in Your Life:

Jump into the virtual representation of our members' T2 excellence and see real-world applications of those technologies in different everyday settings. Submit your technology for consideration.

FLC Digest:

Have good news that you want to share with your peers? Industry events to promote? Open positions? Let us know so we can include them in our bi-weekly Digest newsletter.

The Transfer Files:

Be the next guest on FLC's podcast! Discuss your work, industry knowledge, and the future (or past!) of T2 on The Transfer Files.

T2 Stars:

There are a lot of shining stars in our T2 universe. Nominate a colleague for a spotlight in our recurring T2 Stars feature.

Learn more about the offerings listed below by scanning here or visiting **federallabs.org**

GAIN AND SHARPEN T2 SKILLS

FLC Learning Center:
Expand your T2 skills and track your training with our online database of tools consisting of four categories and designed for beginner, intermediate, and advanced professional levels.

FLC National Meeting:
Learn and connect at the preeminent annual conference for federal T2, featuring a full day of training courses, two days of insightful sessions, and keynotes, social receptions, and networking opportunities.

T2 Resources:
Deepen your knowledge of T2 terminology, policies, mechanisms, and more by utilizing our digital publications.

Webinars:
Take in FLC and industry webinars to expand your knowledge base on a range of diverse topics, from IP to marketing to partnering with VCs.

Careers:
Explore job lists curated specifically for T2.

CONNECT WITH T2 PARTNERS

FLC Business:
Highlight your lab's resources in this searchable database and promote technology available for licensing to businesses.

Industry and Tech Events:
Find potential partners within a tech or industry sector.

Engagement Opportunities:
Virtually showcase what your lab has to offer with Lab Showcases, Member Connect webinars, and more.

Partnering Events:
Connect with a broader community at events hosted by our strategic industry partners.

Tech Transfer Services:
Capitalize on the FLEX program, agreement matrix, intent to license notices, and more.

Awards Judges

The FLC expresses its gratitude to the members of the Awards Subcommittee and other volunteer judges for their tireless efforts in making the 2025 Awards program a success. Judges recuse themselves from judging submissions in which they participated.

Jesse Midgett
Langley Research Center, NASA
(Outgoing Awards Subcommittee Chair)

Derek Parks
National Oceanic and Atmospheric Administration, DOC (retired)
(Former Promote Committee Chair)

Whitney Hastings
National Institutes of Health, HHS
(FLC Chair)

Dick Paul
FLC National Advisory Council

Michelle Applebaum
Agricultural Research Service, USDA

Michelle Atchison
University of Texas at San Antonio

Bilal Bomani
Glenn Research Center, NASA

Annie Bullock-Yoder
Naval Surface Warfare Center, Crane Division, DoD

Kathleen Carroll
National Institutes of Health, HHS

José Colucci-Ríos
National Institute of Standards and Technology, DOC

Vince Contreras
Agricultural Research Service, USDA

Maria Duran
Naval Surface Warfare Center, Crane Division, DoD

Suzanne Frisbie
National Institutes of Health, HHS

Bhoomija Hariprasad
Department of Veterans Affairs

John Henri
Agricultural Research Service, USDA

Sarah Hibbs-Shipp
National Wildlife Research Center, USDA

Lydia Hierl
National Security Agency, DoD

Amanda Jelsema
Sandia National Laboratories, DOE

Eric Juarez
National Institutes of Health, HHS

Tara Kirby
National Institutes of Health, HHS

Anton Koros
Federal Aviation Administration, DOT

Lena Little
Langley Research Center, NASA

Mary Livingston
Ames Research Center, NASA

Heidi Medford
Pacific Northwest National Laboratory, DOE

Kristine R. Moes
Department of Veterans Affairs

Jackie Kerby Moore
Sandia National Laboratories, DOE (retired)

Andy Myers
Kansas City National Security Campus, DOE

Will Rarich
Princeton Plasma Physics Laboratory, DOE

Maria Restrepo-Hartwig
Agricultural Research Service, USDA

Sachit Revankar
Agricultural Research Service, USDA

Lisa Roberts
Johnson Space Center, NASA

Eric Rosenberg
U.S. Cyber Command Laboratory, DoD

Meghan Sheehan
Environmental Protection Agency

Karen Surabian
National Institutes of Health, HHS

Heather Wilson
Environmental Protection Agency

Paige Zimerman
Department of Veterans Affairs

David Zimmerman
Princeton Plasma Physics Laboratory, DOE

FLC

Federal Laboratory Consortium
for Technology Transfer

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#NM2025

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