2024 DETAILED PROGRAM

2024 Program Agenda

MONDAY DECEMBER 2, 2024

12:00 PM — Lone Star Ballroom Lobby

Registration

TUESDAY DECEMBER 3, 2024

8:00 AM — Lone Star Ballroom E

Defense TechConnect, SBIR/STTR, Resilience Week, and SBIR/STTR Keynotes

Presentation of Colors and National Anthem
Army ROTC Color Guard, University of Texas at Austin

Welcome and Opening Remarks
Jennifer Rocha, Strategic Partnerships, TechConnect Division, ATI

Accelerating Innovation For National Security
John Jansen, CEO, ATI
Naval Surface Warfare Center Overview and Areas of Interest
Jenna Nix, Director of Engagment, Naval Surface Warfare Center, Crane Division, Naval Sea Systems Command
Naval Surface Warfare Center Overview and Areas of Interest
Lisa Good, Chief of the Contracting Office, Department Head, Naval Surface Warfare Center, Crane Division, Naval Sea Systems Command
Microelectronics Manufacturing PRISM Summit Welcome Remarks
David Daniel, Chair of the Texas Semiconductor Innovation Consortium Executive Committee, Office of the Governor of Texas
Resilience Week Welcome Remarks
Ollie Gagnon, Chief Homeland Security Advisor, Idaho National Laboratory
Resilience Week Keynote
Robert Russell, Regional Director (A) for Region 6, Cybersecurity and Infrastructure Security Agency (CISA)
Accelerating Innovation through America's Seed Fund
Erick Page-Littleford, Director, Small Business Innovation Research and Technology Transfer Office, U.S. Small Business Administration
Welcome Remarks from AFC Austin
Major General Michael "Mac" McCurry, Chief of Staff, Army Futures Command

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10:00 AM Lone Star Lobby ↑

Coffee Break

10:15 AM Lone Star A ↑

Resilience Week: Communication Pathways and Education Tools for an Evolving Grid

This panel will explore current and future communications landscape for the power grid, focusing on two key programs for DOE's Office of Electricity: Secure Pathways for Resilient Communication (SPaRC) and the Center for Alternate Synchronization and Timing (CAST). SPaRC addresses communications challenges in the evolving grid, including secure communication pathways, data communication requirements, and the roles of latency, bandwidth, and throughput. CAST focuses on designing and testing a secure, non-GPS terrestrial synchronization architecture for the power grid and other critical infrastructures, providing precision timing services, and developing educational tools.

Brad Nelson, Project Manager, Smart Grid, Critical Infrastructure Protection, Idaho National Laboratory
Carter Christopher, Head of the Human Dynamics R&D, Oak Ridge National Laboratory
Angie Kelic, Distinguished Staff Member, Sandia National Laboratories
Steve Bukowski, Senior Technology Leader, Idaho National Laboratory

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10:15 AM Lone Star B ↑

Resilience Week: Novel Approaches to Infrastructure Risk Management and Resilience

This session will discuss three novel approaches to risk management and resilience. Participants will leave with a nuanced understanding of the complex risks facing critical infrastructure and equipped with a suite of strategic tools and knowledge to bolster infrastructure risk management, resilience, and security.

Ryan Donaghy, Acting Deputy Assistant Director for Stakeholder Engagement, Cybersecurity and Infrastructure Security Agency (CISA)
John Eddy, Principal Member, Sandia National Laboratories
Gabriel Weaver, Senior Critical Infrastructure Analyst, Idaho National Laboratory

Brian Pierre, Manager, Electric Power Systems Research Department, Sandia National Laboratories

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11:30 AM Lone Star A

Resilience Week: Cybersecurity Vulnerabilities and Connected Vehicles

Modern vehicles are increasingly software-defined; that is, increasingly sensored, automated, and connected in ways that present significant cybersecurity, privacy, and resilience challenges across all missions. EVs are not only wirelessly connected, but also connect physically to charging infrastructure and often energy systems within facilities. Vehicles are also ubiquitous: every organization has a vehicle fleet and individual employees, contractors, and visitors bring their own devices onto federal facilities. National policies (e.g., the Bipartisan Infrastructure Law, Inflation Reduction Act, and E.O. 14057, Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability) are driving electrification of federal vehicle fleets and installation of electrical vehicle (EV) charging infrastructure. However, the PRC is the dominant global producer of EVs, batteries, and related components. Technical vulnerabilities and supply chain risks from this new critical infrastructure are not well understood. This panel will discuss current R&D efforts and operational coordination across several federal mission partners to address cyber threats and vulnerabilities associated with connected vehicles and EVs.

Cheri Caddy, Senior Technical Advisor for Cybersecurity, U.S. Department of Energy
Sandy Kline, Director Facility Related Control Systems, Office of the Secretary of Defense(EI&E)/Construction
Casey Mills, Assistant Chief, United States Border Patrol Intelligence Divsion

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11:30 AM Lone Star B

Resilience Week: Cyber-physical Resilience Considerations for Distributed Energy Technologies

The power grid, once viewed as a standalone physical entity, has undergone a profound transformation in recent years, evolving into a complex cyber-physical system through its integration with advanced digital technologies and communication networks. The increasing presence of Distributed Energy Resources (DER) (e.g., solar, battery storage, wind and electric vehicles) in the modernizing electric grid requires a revolutionary change in data management and utilization, while also demanding long-term cyber-physical security and resilience measures tailored to DER that are critical for ensuring a clean energy future. Artificial Intelligence (AI) and Machine Learning (ML) and advanced controls can play a crucial role in addressing these challenges by providing high-fidelity cyber-physical data insights, and predictive capabilities to ensure a secure, efficient, and sustainable integration of DERs into the grid. This panel will discuss the state of the art in cyber physical security at the grid edge.

Marissa Morales-Rodriguez, Systems Integration Technology Manager, SETO, U.S. Department of Energy
Kerri Stewart, Chief Strategy Officer, Miller Electric Company
Jairo Giraldo, Research Assistant Professor, University of Utah
Birk Jones, Researcher, Sandia National Laboratories

12:15 PM

Lunch (on own)

1:30 PM Room 301

OELS and Resilience Week: Innovation Spotlights: Operational Energy

The OELS Pitch Sessions are designed to accelerate private-sector and defense-sourced technology solutions aligned with warfighter and national security problem-

sets. DOD and Industry feedback provided to presenters on: solution fit, strengths of technology, challenges of implementation/adoption, positioning guidance, and potential collaboration opportunities.

Review Panelists
James Caley, Director of Operational Energy, Deputy Assistant Secretary of the Navy, Energy, U.S. Navy
Earl Armstrong, Naval Operational Energy Office, Tech Advisor, U.S. Navy
Michael Mazzocco (Session Chair), President and CEO, Alytic/US Navy
Cayle Bradley, Technology-to-Market Advisor, Advanced Research Projects Agency – Energy (ARPA-E)
Kevin Mish, Senior Program Manager, Abbott On Call, Inc.

1:30 PM Lone Star E ↑

Resilience Week: Driving Forces Behind the Digital Energy Transformation

The growth of renewable energy technologies that require geographic distribution, smart energy technologies that make energy usage more efficient, and the advances in software that make use of large amounts of data to enable new grid functionalities are transforming the electric energy system from a largely analog, centralized system, to a digital distributed and virtually orchestrated environment. This transformation is being driven by challenges in increasing demand, aging infrastructure, and the urgent need to reduce the impact of that delivery on the environment and climate globally. Digital transformation represents a strategic response to these challenges, offering opportunities to enhance energy delivery reliability, resilience and cost. However, the features included in this digital environment could increase our cyber management without adequate risk assessment and mitigation and proactive planning efforts. Cyber risks are exacerbated by growing adversarial interest in targeting critical infrastructure, including energy infrastructure, and

intensifying natural hazards. This session will focus on enhancing resilience and reliability of power systems over the course of the digital energy transition. Discussions will include focus on mitigations for systems already in the field, increasing cyber resilience as upgrades and additions are made, and design choices for more secure systems currently being planned.

Megan Culler, Power Engineer/Researcher, Idaho National Laboratory
Scott Hinson, Chief Technology Officer, Pecan Street
Shari Gribbin, Managing Partner, CNK Solutions
Karan Patel, Managing Director - Energy Solutions and Clean Energy, Rappahannock Electric Cooperative

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2:00 PM — Griffin Hall, Rooms 201, 202, 203, and 204 ↑

Defense TechConnect, SBIR/STTR Agency Tabletops, and Smart Cities Connect Expo Hall Opens

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2:00 PM — Rooms 201 and 202 ↑

SBIR/STTR: Agency Tabletops

2:00 PM — Rooms 203 and 204 ↑

Defense TechConnect: Spotlight Showcase Tabletops

2:30 PM — Room 301 ↑

OELS and Resilience Week: Innovation Spotlights: AI/Data/Cyber I

The OELS Pitch Sessions are designed to accelerate private-sector and defense-sourced technology solutions aligned with warfighter and national security problem-sets. DOD and Industry feedback provided to presenters on: solution fit, strengths of technology, challenges of implementation/adoption, positioning guidance, and potential collaboration opportunities.

3:00 PM Lone Star E

Resilience Week: The Future of Distributed Wind: Integration, Challenges, and Opportunities

The panel session on "The Future of Distributed Wind" will provide a comprehensive exploration of distributed wind energy, focusing on its application, evolution from past and present technologies to cutting-edge developments like airborne wind systems, as well as its critical integration with other energy sources. Experts will dissect the significance of wind as a renewable resource and underscore the necessity for coupling it with alternative energy sources and storage solutions to ensure a reliable and resilient power supply. The discussion will emphasize the geographical importance of wind energy, acknowledging areas where wind is a particularly viable option. The panel will address the various risks and issues that have hindered distributed wind's progress, including supply chain challenges, siting conflicts such as NIMBYism, environmental concerns, and the nuances of wind resource availability. Economic hurdles, especially in the context of rural United States, will be examined alongside opportunities presented by new funding mechanisms. This session aims to provide a roadmap for overcoming barriers and harnessing the full potential of distributed wind energy.

Brent Houchens, Principal Mechanical Engineer, Sandia National Laboratories
Kurt Myers, Project Manager, Staff Engineer, Idaho National Laboratory
Alice Orrell, Consultant, DOE WETO

Rob Creighton, CEO, Windlift

3:30 PM — Room 301 ↑

OELS and Resilience Week: Innovation Spotlights: AI/Data/Cyber II

The OELS Pitch Sessions are designed to accelerate private-sector and defense-sourced technology solutions aligned with warfighter and national security problem-sets. DOD and Industry feedback provided to presenters on: solution fit, strengths of technology, challenges of implementation/adoption, positioning guidance, and potential collaboration opportunities.

Ross Roley (Session Chair), Energy and Cyber Innovation Lead, Battelle in Support of U.S. Indo Pacific Command (USINDOPACOM)
Daryl Haegley, Technical Director, Control Systems Cyber Resiliency, U.S. Air and Space Force
Aleksandra Scalco, Engineer, Naval Information Warfare Center(NIWC)
Rich Scalco, NIWC Senior Cyber Engineer & MOSAICS CyberSHIELD Technical Manager, Naval Information Warfare Center(NIWC)
Earl Armstrong, Naval Operational Energy Office, Tech Advisor, U.S. Navy
Michael Mazzocco (Session Chair), President and CEO, Alytic/US Navy
Kevin Mish, Senior Program Manager, Abbott On Call, Inc.
R.D. Childers, Senior Manufacturing Engineer, R.D. Childers LLC
Sidney Garman, Commercial Engagement Analyst, Army Applications Laboratory (AAL)

4:00 PM — Griffin Hall, Rooms 201, 202, 203, and 204 ↑

Defense TechConnect, OELS, Fall Smart Cities Connect, SBIR/STTR, and Spotlight Showcase Expo Social and Poster Session I

4:00 PM — Rooms 201 and 202

SBIR/STTR: Agency Tabletops Reception

4:00 PM — Rooms 203 and 204

Defense TechConnect: Spotlight Showcase Tabletops Reception

WEDNESDAY DECEMBER 4, 2024

Welcome and Opening Remarks
Jennifer Rocha, Strategic Partnerships, TechConnect Division, ATI

Emerging National Energy Challenges for a New Administration
Honorable Lucian Niemeyer, CEO, Building Cyber Security

Cyberspace as the 5th Domain of Conflict
John Garstka, Director for Cyber Warfare, Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S)), U.S. Department of Defense

Oversight, advocacy, and policy for the Department of Defense (DoD) S&T enterprise
Aprille Ericcson, Assistant Secretary of Defense for Science and Technology (ASD(S&T)), U.S. Department of Defense

DOD Innovation Gamechangers Keynote Panel
Moderator: Jennifer Rocha, Strategic Partnerships, TechConnect Division, ATI
Erick Page-Littleford, Director, Small Business Innovation Research and Technology Transfer Office, U.S. Small Business Administration

Joe Bryan, President, Muswell Orange
Jack Ryan, Senior Program Manager, Energy Portfolio, DIU
Veronika Stelmakh, Co-Founder and CEO, Mesodyne, Inc.

10:00 AM Lone Star Lobby ↑

Coffee Break

10:15 AM Lone Star A ↑

Resilience Week: Critical Function Assurance: A Consequence-based Approach to Operating through Compromise

State-sponsored actors are "targeting American civilian critical infrastructure, pre-positioning to cause real-world harm to American citizens and communities in the event of conflict." Critical infrastructure owners and operators are being challenged to operate through digital compromise in the face of an evolving cyber threat landscape. In this session, we discuss practical applications of critical functional assurance with the objective to demonstrate approaches that organizations can use to optimize security strategies, focus resources and protect their most critical assets from cyber-enabled sabotage

Jared Smith, Program Manager, Idaho National Laboratory
Brian Kaiser, Special Agent, FBI Cyber Division
Jackie Morrison, Chief Cyber Security Officer, Alyeska Pipeline Service Company

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10:15 AM Lone Star B ↑

Resilience Week: Mind the Resilience Gaps

Energy resilience is increasingly recognized as a crucial factor in ensuring the stability and security of modern societies, yet current resilience assessments often

overlook critical dimensions. This panel session will delve into the gaps present in contemporary energy resilience assessments, exploring how these shortcomings impact our ability to prepare for and respond to energy disruptions. Experts from diverse fields will discuss the limitations in existing assessment frameworks, such as insufficient consideration of interdependencies between energy systems and other critical infrastructure, underestimation of emerging threats like wildfires or cyberattacks, and the need for more inclusive and adaptive metrics. The session aims to highlight the implications of these gaps for infrastructure planning and community preparedness. Attendees will gain insights into innovative approaches and strategies to address these deficiencies and enhance the robustness of energy resilience assessments, ultimately contributing to more secure and resilient energy systems in the face of evolving challenges.

Ryan Burg, Group Manager, Resilient Systems Design and Engineering, National Renewable Energy Laboratory (NREL)
Jenn Kallay, Principal Associate, Synapse Energy Economics
Ronny Sandoval, Managing Principal, Regulatory Assistance Project
Doug Lewin, Founder, Stoic Energy Consulting
Christopher Jones, Engineer, Con Edison

11:30 AM Lone Star
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Defense TechConnect and OELS: Smart Cities–Smart Bases Innovation Challenge I

Presented by TechConnect, Advanced Technology International (ATI), and the RISE Consortium, the Smart Cities - Smart Bases Innovation Challenge delivers cutting-edge, dual-use technology pitches to address the overlapping technical, environmental, and security challenges facing both smart cities and smart bases.

Welcome and Opening Remarks

Jennifer Rocha (Welcome Remarks), Strategic Partnerships, TechConnect Division, ATI

Jack Ryan, Senior Program Manager, Energy Portfolio, DIU

11:30 AM Lone Star A

Resilience Week: Building a Secure and Resilient Manufacturing Supply Chain across Sectors

Purpose: Experts from research institutes and the manufacturing industry will discuss the challenges and opportunities of a diverse, small and medium-sized manufacturers-dominated manufacturing supply chain, needed strategies and innovations to create secure building blocks throughout the digital life cycle of engineering design and modern manufacturing operations, and how to accelerate security technology deployment and explore its impact on a capital-investment-intensive sector with energy consumption and environmental emissions challenges. . Supply chain resilience and the democratization of manufacturing through advanced technologies is driving an industry ecosystem in the U.S. where 98% of companies are Small and Medium (sized) Manufacturers (SMMs). Currently accelerating investments in new manufacturing capacity provide both new threats and opportunities if security innovations can be aligned in a timely fashion. This panel will discuss these and related areas of questions: • the challenges and opportunities of a diverse and SMM-dominated manufacturing supply chain, • the needed national strategies and technology innovations to create “secure building blocks” that extend across the digital life cycle of engineering design and modern manufacturing operations, • How to accelerate security technology deployment and explore its impact on a capital-investment-intensive sector with energy consumption and environmental emissions challenges. Overview: In past decades, the digitization of the business world has led to tremendous efficiency gains and made it far easier

to conduct business in a variety of sectors in a distributed fashion. In manufacturing, digital designs, automated operations, and product innovations are creating a new “digital thread” between consumers, small and medium manufacturers (SMMs), large manufacturers, and original equipment manufacturers (OEMs). These digital thread ecosystems create opportunities to increase our global competitiveness, democratize manufacturing, and revitalize American innovation and supply chain resilience. However, with this exponential increase in connectivity, there is an exponential increase in exploitable security flaws, leaving manufacturers vulnerable to severe consequences if their operational technology (OT) boundary detection systems fail. Currently, these digital threads are a patchwork of architectures, protocols, and information sharing with incomplete or unenforceable security that creates additional complexity and expenses for many manufacturers. Consistent with Manufacturing USA strategic guidance, industry assessments, and threat estimations by the Cyberspace Solarium Commission, Defense Science Board, and National Intelligence community, the current state of cybersecurity is not sustainable. The technology push for the integration of information technology (IT) and OT is not sufficient to secure manufacturing systems within complex supply chains that exchange both digital designs and a variety of subcomponents across sectors. There are simply not enough resources to safeguard software, hardware, networks, and systems that were never designed to be secure end-to-end. New approaches are needed and being developed by national consortiums and industry leaders. The Cybersecurity Manufacturing Innovation Institute’s (CyManII) vision for the future of robust, resilient, and decarbonized advanced manufacturing extends beyond the current aggregation of insecure technologies to new systems that use flexible and verifiably secure architectures that will exponentially increase our Nation’s ability to adapt to the fiercest cyber-attacks.

Wayne Austad, Chief Technology Officer, Idaho National Laboratory
Matt Luallen, Lead Research Scientist for Education Translation, University of Illinois Urbana-Champaign
Krystel Castillo, ORISE Fellow, DOE Office of Energy Efficiency and Renewable Energy/AMMTO

10:30 AM Lone Star C

MOSAICS Industry Day 2024: Unity of Effort

A non-proprietary, vendor agnostic reference framework and architecture

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11:30 AM Lone Star B

Resilience Week: The Future of Transmission Expansion For National Defense

The U.S. transmission grid we rely on to deliver electricity nationwide to power communities, businesses, and military installations is increasingly vulnerable to threats and needs massive expansion to meet future resilient power needs. This panel will convene experts from public policy, national laboratories, the Department of Energy, and the Department of Defense to unpack the imperative for transformative transmission expansion. The discussion will cover leading innovations and industry practices accelerating transmission development and resilience and identify next steps for aligning transmission grid investment with the needs of the Department of Defense (DoD), installations, and their surrounding communities. Panelists will reference the methodology and results behind two influential transmission reports, both released in 2024: “Transmission Expansion For National Defense” and the “National Transmission Planning Study.”

Michael Wu, Executive Director, RISE Consortium

Konstantinos Oikonomou, Electrical Engineer, Pacific Northwest National Laboratory
Rebecca Isacowitz, Deputy Assistant Secretary, Defense for Energy Resilience & Optimization

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12:15 PM

Lunch (on own)

12:00 PM Lone Star D

SBIR/STTR: Ask Me Anything Lunch – SBA (Lunch Not Provided)

Erick Page-Littleford, Director, Small Business Innovation Research and Technology Transfer Office, U.S. Small Business Administration

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1:30 PM Room 302

Defense TechConnect, OELS, and Resilience Week: Innovation Spotlights: AI/Data/Cyber III

Innovators

1:35 PM Smarthelp: your AI-powered personal assistant, *Kinetic Vision*, Ohio

1:42 PM AgilityHealth® - Measure. Grow. Accelerate at Every Level, *Agile Transformation, Inc. d/b/a AgilityHealth*, Nebraska

1:49 PM Innoslate, *SPEC Innovations*, Virginia

1:56 PM Imandra Automated Reasoning for SysML v2, *Imandra*, Texas

2:03 PM Advanced Virtual Environment with Real Time Visualizations (AVERTV), *Karagozian and Case, Inc.*, California

2:10 PM Machine Learning Approach to Analysis of Metallurgical Property Data in HSLA Steels, *Integrated Solutions for Systems (IS4S)*, Florida

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1:30 PM Lone Star F

Defense TechConnect, OELS, and Resilience Week: Smart Cities–Smart Bases Innovation Challenge II

Presented by TechConnect, Advanced Technology International (ATI), and the RISE Consortium, the Smart Cities - Smart Bases Innovation Challenge delivers cutting-edge, dual-use technology pitches to address the overlapping technical, environmental, and security challenges facing both smart cities and smart bases.

Innovators

1:33 PM Metropolitan Technologies

1:41 PM CipherSonic Labs, Inc.

1:49 PM AYON LLC

1:57 PM GTC Analytics

1:30 PM Lone Star Ballroom E ↑

Resilience Week: DOD Joint MOSAICS (J-MOSAICS): DOD Approaches to Meeting Zero Trust for Defense Critical Infrastructure (DCI) Part One

Initiatives are currently underway within the Department of Defense to synchronize the Joint More Situational Awareness for ICS (J-MOSAICS) framework with government standards and the Department's Zero Trust Strategy. The Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSDA&S), with assistance from the DOD Chief Information Office (CIO) Zero Trust Portfolio Management Office, has recognized that J-MOSAICS is a vendor-neutral, non-proprietary framework that, when effectively implemented, has the potential to mitigate cyber vulnerabilities in critical defense infrastructure and offer a viable pathway to enable Zero Trust for Operational Technology. Hear from the J-MOSACIS Lead who will put into perspective the importance of cyber securing OT infrastructure and what is needed to move J-MOSAICS into operational practice.

Aleksandra Scalco, Engineer, Naval Information Warfare Center (NIWC)

1:30 PM Lone Star Ballroom E

Resilience Week: DOD Joint MOSAICS (J-MOSAICS): DOD Approaches to Meeting Zero Trust for Defense Critical Infrastructure (DCI) Part Two

The Chief Information Officer (CIO) of the Department of Defense (DoD) is focused on enhancing the cyber resilience of Operational Technology (OT), recognizing its vital importance in protecting essential infrastructure, data, and mission-critical systems. The DoD CIO is in the process of revising the DoD Zero Trust (ZT) Strategy to incorporate a ZT roadmap specifically for Facility Related Control Systems within OT. Furthermore, the DoD CIO is actively promoting the swift implementation of ZT capabilities throughout the Department and collaborating with DoD components and industry partners to showcase ZT solutions tailored for Operational Technology. To expedite this initiative, the DoD CIO's Zero Trust Portfolio Management Office (PfMO) is collaborating with the Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSDA&S) to explore the most effective ways to integrate ZT cybersecurity principles into DoD OT infrastructures. Hear from the two key senior DoD leaders who are guiding their teams to accelerate ZT solutions for the Department's OT infrastructure, and what to expect from their efforts going forward.

Moderator: Justin Welch, Systems Engineer, Energy and Grid System Integration Group, Idaho National Laboratory
John Garstka, Director for Cyber Warfare, Office of the Deputy Assistant Secretary of Defense for Platform and Weapon Portfolio Management (PWPM), Office of the Under Secretary of Defense for Acquisition and Sustainment (OUSD(A&S))
Randy Resnick, Director, DoD CIO Zero Trust

2:00 PM — Griffin Hall, Rooms 201, 202, 203, and 204

Defense TechConnect, SBIR/STTR Agency Tabletops, and Smart Cities Connect Expo Hall Opens

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2:00 PM — Rooms 201 and 202

SBIR/STTR: Agency Tabletops

2:00 PM — Rooms 203 and 204

Defense TechConnect: Spotlight Showcase Tabletops

Innovators

2:30 PM — Lone Star F

Defense TechConnect and Resilience Week: Smart Cities–Smart Bases Innovation Challenge III and Winner Announcement

Presented by TechConnect, Advanced Technology International (ATI), and the RISE Consortium, the Smart Cities - Smart Bases Innovation Challenge delivers cutting-edge, dual-use technology pitches to address the overlapping technical, environmental, and security challenges facing both smart cities and smart bases. The winner of the Smart Cities - Smart Bases Challenge will be announced in this session!

Innovators

2:30 PM AlumaPower Corporation
2:38 PM National Energy USA
2:46 PM Global Connective Center
2:54 PM Phoenix Waste Solutions, Inc.

3:00 PM Lone Star Ballroom E

Resilience Week: Securing Our Nation's Interconnected Ports

In March 2024, the Port of Baltimore experienced an unprecedented emergency when a container ship struck the Francis Scott Key Bridge, blocking commercial vessel commerce. As a maritime nation, America's prosperity remains inextricably linked to the integrated and extensive network of ports, terminals, vessels, waterways, and land-side connections constituting the U.S. Marine Transportation System (MTS). This complex system supports trillions of dollars of economic activity and contributes to the employment of more than 31 million Americans. With over 90% of overseas trade moving through U.S. ports, owners and operators are becoming increasingly reliant on these internet-enabled systems to keep up with demand and ensure swifter operations. A cyberattack could cause detrimental impacts on domestic and global supply chain, our economy, and American workers. On February 21, 2024, the White House initiated an Executive Order 14116 to strengthen the security of the Nation's ports, alongside a series of additional actions that will fortify maritime cybersecurity, reinforce supply chains and strengthen the U.S. industrial base. DHS and its partners have forged a robust public-private partnership and have a strong and demonstrated track record of securing and safeguarding the U. S. Marine Transportation System (MTS). This panel will touch on the importance of understanding the consequences of a port disruption to make better plans and invest in port infrastructure resiliency. Technologies to be discussed include an application for emergency planning for civilian and DoD missions and a platform to enable the study of physical effects caused by cyber-attacks against seaport Industrial Control Systems (ICS) infrastructure. Please join us for an informative discussion to create a more secure and resilient U.S. MTS by securing our nation's interconnected ports.

Brannan Vilee, Division Director, Infrastructure Resilience and Security Solutions, Department of Homeland Security (DHS) Science and Technology Directorate (S&T) Office of Mission & Capability Support (MCS)
Eileen Rubin, Project Manager, Department of Homeland Security Science & Technology Directorate
Adam Hahn, Principal Critical Infrastructure Security Engineer, MITRE
Rachel Reichenberg, Software Developer, Idaho National Laboratory

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4:00 PM — Griffin Hall, Rooms 201, 202, 203, and 204 ↑

Defense TechConnect, OELS, Fall Smart Cities Connect, SBIR/STTR, and Spotlight Showcase Expo Social and Poster Session II

4:00 PM — Griffin Hall ↑

Resilience Week Posters and Reception

4:00 PM — Rooms 201 and 202 ↑

SBIR/STTR: Agency Tabletops Reception

4:00 PM — Rooms 203 and 204 ↑

Defense TechConnect: Spotlight Showcase Tabletops Reception

THURSDAY DECEMBER 5, 2024 ↑

8:30 AM Lone Star
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Resilience Week: Aligning Energy Planning Across Spatial Scales

Procedural justice is arguable one of the more difficult principles of energy justice to put into practice. A major factor of that is the significant challenge of reconciling preferred energy futures and transition pathways across spatial scales. Technological and policy solutions that provide the most equitable access to resilience, affordability, sustainability, and reliability benefits when implemented at the individual household or single community scale, may have unintended consequences at large scales and quickly become the wrong solution for all households when the "ambient" conditions of the system as a whole are changed. In reconciling these tradeoffs at the utility, PUC, or other regional/aggregated level, remote, island, and islanded (end-of-line) communities may be disproportionally disenfranchised, since a utilitarian approach that picks solutions providing the greatest good for the greatest number of people will deprioritize the needs of frequently small, end-of-line, communities. To address the question of how external technical assistance partners can best support energy transitions in these contexts, and how our energy planning efforts can better reconcile potentially competing needs and priorities at different scales, this session will feature panelists who share lessons learned and recommendations drawing on their experiences working across spatial scales and stakeholder/organization types across the US. Insights will be integrated into a publicly available framework for how these perspectives can be better aligned to arrive at complementary, additive energy planning decisions.

Olga Hart, Principal Member of Technical Staff, Sandia National Laboratories
Renata Bakousseva, Microgrid Strategy Implementation, Pacific Gas & Electric Company
Anissa Rodriguez Dickerman, Chief Executive Officer, Pecan Street

Daniel Trujillo, Chief Information Security Officer, Kit Carson Electric Cooperative
Rosanne Ratkiewich, Senior Regulatory Analyst, California Public Utilities Commission

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8:30 AM Lone Star B ↑

Resilience Week: Climate Resilience Planning for Electric Utilities

Part 1: How much is your city or region doing (or not doing) to prepare for the arrival of increasingly extreme weather and other climate change-amplified physical impacts to infrastructure? This talk, based on the Climate Resilience Maturity Model (a joint INL/EDF initiative), will describe how two fictional North American cities are approaching these challenges, with an eye on illuminating the actions of critical infrastructure owner and operators as well as policy at the state and local government levels. Part 2: This session will focus on how electric utilities can and are building risk-informed approaches to address the impacts of climate change on existing and emerging critical infrastructure systems. Topics will include a brief overview of utility climate vulnerability and action plans, ongoing efforts to support smaller utilities with limited resources in developing climate resilience plans, and a maturity model for assessing utility climate resilience initiatives. The session will feature short presentations followed by a series of stories from utility representatives directly involved in crafting climate resilience plans

Ashton Raffety, Senior Energy Policy & Strategy Analyst, Argonne National Laboratory
Andy Bochman, Senior Grid Strategist, Idaho National Laboratory
Charles Doktycz, Climate Risk and Resilience Analyst, Argonne National Laboratory
Tony Nelson, Electric Communications and Gas Manager, Marshfield Electric
Aggie Serrame, Resilience Program Manager, American Public Power Association

9:45 AM Lone Star A

Resilience Week: Big Data and Energy Justice for Tribes and Small Communities: Concerns and Solutions

Participation in data sharing is now a regular part of utility projects. For rural and remote towns, community energy projects, and Tribally-owned utilities, participation in data sharing can come at a price. Increasingly, unaddressed concerns about data sharing is causing friction between project funders- such as State energy authorities and federal agencies awarding funds through the Infrastructure Bills- and the communities they mean to serve. At stake is a just energy transition- one that includes communities left behind by previous iterations of infrastructure development. This panel will provide three case studies that reveal lessons learned, to help funders and project managers avoid these conflicts. We will also discuss a range of solutions- from community engagement and information sessions, to more theoretical ideas like bundling small utilities into a single data hub, and offering access to the data through a cooperatively managed "data utility."

Jennifer Rachels, Regional Engagement Lead, Idaho National Laboratory
Ryan Witten, Board Co-Chair, Alaska Version 3
Esteban Lopez Ochoa, Program Director, Urban and Regional Planning, The University of Texas at San Antonio
Meme Styles, President & Founder, Measure

9:45 AM Lone Star B

Resilience Week: Cyber-Informed Renewables – Applying CIE to Microgrids and Energy Storage

The microgrid market in the US is growing quickly, and it is estimated to grow annually at 19% through 2027, and the Inflation Reduction Act spurred large investments in microgrids for both electric reliability and resilience and

as a means to integrate renewable energy investments, including solar, storage, hydrogen, and others. New business models allow asset owners to leverage microgrids as an incrementally funded service rather than as a capital investment. With the growing popularity of microgrids and the changing market conditions, building cyber resilience into the design of these assets is critical to ensure that they can provide reliable service to the asset owners deploying them. This talk will discuss how Cyber-Informed Engineering can be used to create a template for resilient security features, appropriate for the critical functions of a microgrid or Battery Energy Storage System. These features, incorporated into the design of a microgrid or BESS effort, add engineered resilience to cyber attack and add a layer of defense beyond traditional cybersecurity mechanisms. This talk will demonstrate a workflow for quickly prioritizing critical functions and identifying opportunities for engineering controls to enhance the system security protection.

Ginger Wright, Energy Cybersecurity Portfolio Manager, Idaho National Laboratory
Ben Lampe, ICS Cybersecurity Professional, Idaho National Laboratory
Daniel Trujillo, Chief Information Security Officer, Kit Carson Electric Cooperative

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11:00 AM Lone Star
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Resilience Week: IEEE Paper Session

This session will spotlight a collection of IEEE papers selected as the best in from submitted papers. These presentations will showcase the latest research, expanding the frontiers of knowledge. Attendees can anticipate engaging with leading experts and participating in thought-provoking discussions about the potential impact of these cutting-edge findings.

Nate Evans, Senior Cybersecurity Researcher, Oak Ridge National Laboratory

Mukesh Gautam, Research Scientist/Engineer, Pacific Northwest National Laboratory
Aditya Sundararajan, R&D Associate Staff, Oak Ridge National Laboratory
George Fragkos, Principal Member of Technical Staff, Sandia National Laboratories
Christopher Porras, Graduate Researcher, University of Texas at El Paso
Kaveri Mahapatra, Power Systems Research Engineer, Pacific Northwest National Laboratory

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11:00 AM Lone Star B

Resilience Week: Critical Materials Supply Chain Sustainability

This panel session will include supply chain leaders in the U.S. from industry, academia, and the national laboratory system who have been critical contributors to the industry's supply chain resilience in a time of radical technological change, rapid demand growth, and heightened geopolitical tensions. This panel will address three primary questions: This session will focus on critical materials supply chain sustainability for clean energy transition and energy security. Sessions will envision to hold interdisciplinary approaches, use inspired research, and perspective on workforce development, private and academic sectors innovations that advance nation's circular economy for critical materials value chain. The vision and expected outcomes of the session is to pioneer the complete materials supply chain for clean energy technologies from resource management, extraction, refining, and conversion of critical raw materials to ultra-pure value products and components. The panel discussion will provide insight to potential policies and approaches for inclusive innovation ecosystem that drives economic growth, workforce development, use-inspired research and development, and the translation of innovations to practice, alleviating the potential supply chain risks of critical materials.

Mike Severson, System Engineer, Idaho National Laboratory
Hemali Rathnayake, Full Professor, University of North Carolina Greensboro
Sachin Junnarkar, Founder and CEO, Field Viewers, Inc. and Health Lync, LLC
Braeton Smith, Principal Energy Economist, Argonne National Laboratory

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