2026 LEAP Workshop

SEPTEMBER 21 – 23, 2026

U.S. Department of Energy
National Energy Technology Laboratory
3610 Collins Ferry Road, Morgantown, WV 26505

U.S. DEPARTMENT of ENERGY

NATIONAL ENERGY TECHNOLOGY LABORATORY

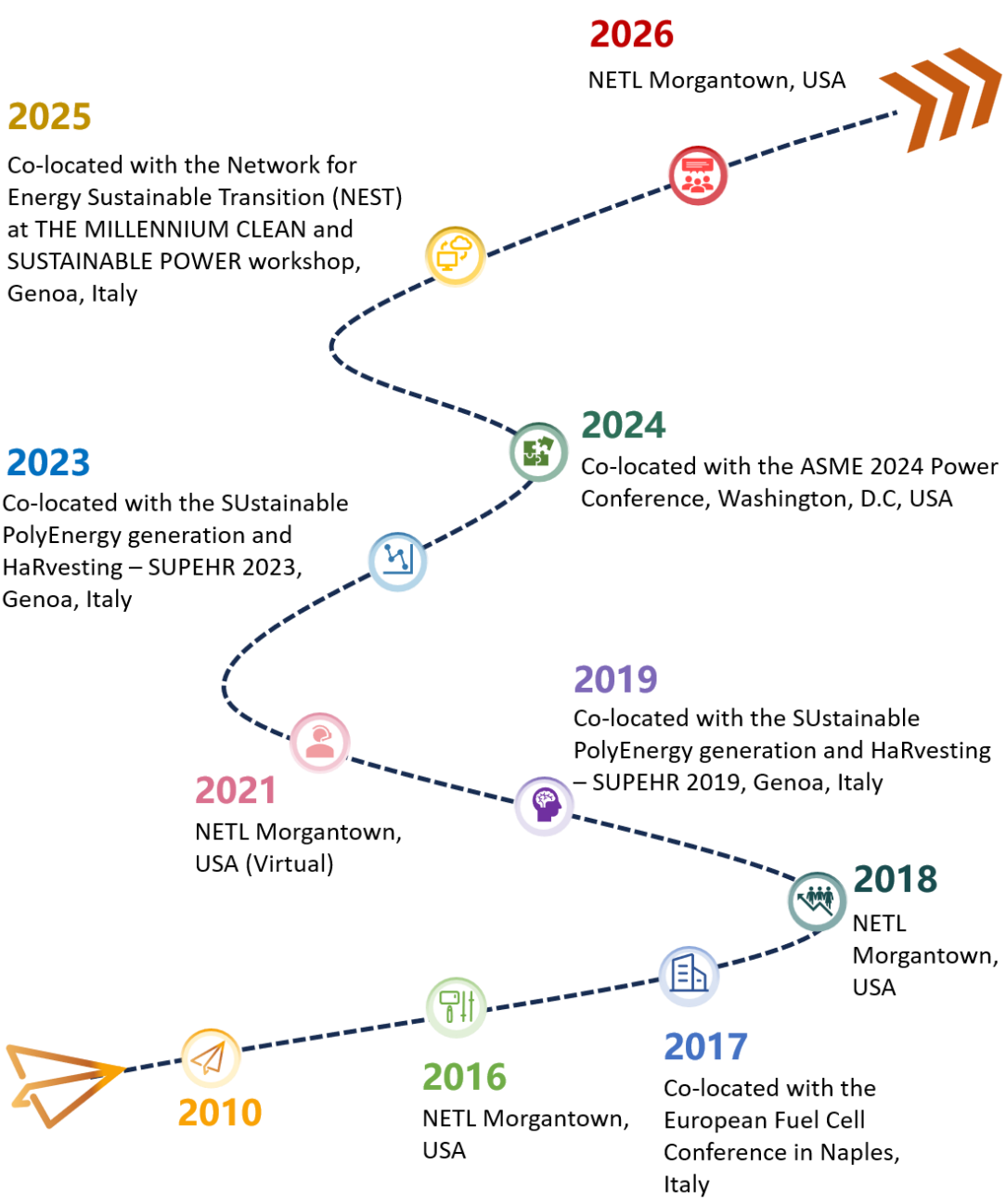
LEAP Workshop Introduction

The 2026 LEAP Workshop—hosted by the DOE National Energy Technology Laboratory's Coal Center of Excellence—is dedicated to advancing next generation power systems that deliver reliable, affordable energy. It centers on the potential of artificial intelligence and machine learning methods to accelerate the successful deployment of new technologies in the energy sector, directly supporting HGEO's mission to "unleash the transformative power of technology, particularly artificial intelligence, to revolutionize processes and capabilities."

In place of traditional presentations, the LEAP workshop promotes an interactive format where attendees will engage in structured dialogue to share technical expertise and jointly identify critical research needs. These insights will feed into a coordinated technology development roadmap. The workshop will culminate in a DOE technical note summarizing key findings, opportunities, and challenges related to technology development tools, as well as notable outcomes from the various sessions—providing a clear foundation for continued innovation. Accelerating the development and commercialization of highly flexible, low-emission, high-efficiency power systems of the future will be supported by promoting dialogue among the leading international experts in cyber-physical systems or intelligent hardware (e.g. autonomous vehicles), digital twins, hardware in the loop simulation, digital engineering with AI, advanced intelligent controls, and dynamic system modeling. These discussions will support HGEO's strategic objectives to modernize and optimize energy systems, expand industry-aligned innovation, and enhance national energy resilience.

Recognizing that only about 1% to 5% of patented technologies reach commercialization, a new technology development paradigm is needed. This year, the LEAP Workshop will introduce a new technology development path from concept to commercial deployment through a co-simulation demonstration involving NETL, SRNL, INL and NLR. Through real-time connectivity between design point analysis and hardware-based simulations—with rapid feedback loops to address unexpected challenges and discovery—the UltraLab co-simulation will demonstrate a proposed new technology development paradigm focused on the energy sector.

LEAP Workshop Background



UltraLab Demonstration

UltraLab - Unleashing Leading-edge Energy Technology Research Across Lab Assets and Test Beds

NETL is set to unveil an exciting, end-to-end demonstration of a new technology development paradigm accelerating innovation and derisking energy technology development across the energy sector. This showcase will take attendees on a dynamic journey—from breakthrough AI-driven materials discovery through digital engineering, technoeconomic analysis, federated and dynamic system modeling, digital twins, acceleration techniques to hardware-in-the-loop simulations, cyber-physical systems integration, and geographically distributed co-simulation—culminating in a pilot-ready concept engineered for success. The 2026 LEAP workshop will bring this paradigm with real-time connectivity between design-point analysis and hardware-based simulations, creating rapid feedback loops that drive discovery and resolve challenges before building pilot plants. This high-impact demonstration brings together the combined expertise of NETL, INL, NLR, and SRNL, highlighting a powerful collaboration aimed at transforming how energy technologies are conceived and realized.

The featured UltraLab Demonstration will take place on the afternoon of September 22.

2026 LEAP Workshop Agenda

Day 1 – Digital Engineering
Monday, September 21, 2026

Time	Activity	
7:00 am – 4:00 pm	**Registration** Check-in and badging	**B26 – Lobby**
8:00 – 9:00 am	**Breakfast and Ice Breaking**	
9:00 – 9:15 am	**Welcome & Opening Remarks**	**B26 – Room G51**
	Workshop objective, expected outcomes, and housekeeping	**Speakers:** **David Tucker** Research Physical Scientist, NETL **Nathan Weiland** Director, Coal Center of Excellence, NETL
9:15 – 10:45 am	**Session 1 – Digital Design with AI**	**B26 – Room G51**
	This session explores how AI is transforming digital design for next-generation energy systems – component / system design and engineering: ▪ State-of-the-art model-based component and system engineering ▪ Component design and optimization using AI and autonomous lab concepts ▪ Automated design-point analysis that enables rapid, upfront screening through advanced learning methods	**Moderator:** **Daniel Iliescu** DOE Technical Account Director, Ansys/Synopsys
10:45 – 11:00 am	**Refreshment Break**	

11:00 – 11:45 am	Keynote	B26 – Room G51
	"Digital Twins and AI: Enabling the Next Generation of Energy and Industrial Systems"	**Speaker:** **Sameer Kher** Senior Director of R&D Engineering, Systems and Digital Twins, Ansys/Synopsys
11:45 am – 1:00 pm	**Lunch Break**	
1:00 – 2:30 pm	**Session 2 – Digital Approaches for Dynamic Design and Operability**	**B26 – Room G51**
	This session discusses how emerging digital engineering methods for designing, analyzing, and operating can support dynamic design decisions and operability of complex energy systems to meet evolving future: ▪ Designing integrated energy systems based on future needs ▪ The new simulation paradigm – federated dynamic co-design ▪ Development of federated models with AI for optimizing dynamic performance	**Moderators:** **Daniel Iliescu** DOE Technical Account Director, Ansys/Synopsys **Benjamin Omell** Research General Engineer, NETL
2:30 – 3:00 pm	**Refreshment Break**	
3:00 – 5:00 pm	**Session 3 – Digital Twins and SCADA Systems**	**B26 – Room G51**
	This session examines how AI and machine learning are reshaping modern control systems, highlighting how digital twin technologies and SCADA work together to enhance supervisory control while ensuring safety and reliable operation: ▪ Incorporating AI into multi-objective performance optimization ▪ Intelligent digital twins for performance optimization and future SCADA implementation ▪ Using digital twins in energy technology research and development	**Moderators:** **Paolo Pezzini** Technical Leader, Process Controls and Automation, Generation Sector, EPRI **David Tucker** Research Physical Scientist, NETL

Day 2 – Beyond Digital Twins

Tuesday, September 22, 2026

Time	Activity	
8:00 am – 4:00 pm	**Registration** Check-in and badging	**B26 – Lobby**
8:00 – 9:00 am	**Breakfast**	
9:00 – 9:30 am	**Keynote**	**B26 – Room G51**
	"Digital Engineering and the DOE Coal Program"	**Speaker:** **Sarah Forbes** Director, Office of Coal, U.S. Department of Energy
9:30 – 10:45 am	**Session 4 – From Dynamics to Real-Time**	**B26 – Room G51**
	This session focuses on bridging dynamic modeling with real-time execution in modern energy systems: ▪ Defining models, digital twins, X-in-the-loop, and cyber-physical systems ▪ Timescales for integrated energy systems, from supervisory control to frequency regulation ▪ Methodology for accelerating physics-based or semi-empirical dynamic models to execute in real-time or at the controller sampling frequency	**Moderators:** **Rob Hovsapian** Research Lab Fellow, SRNL **Anurag Srivastava** Power Chair Professor, WVU
10:45 – 11:00 am	**Refreshment Break**	

11:00 am – 12:15 pm	**Session 5 – Intelligent Hardware in Technology Development**	**B26 – Room G51**
	This session explores how intelligent hardware, combined with real-time modeling, and AI-enhanced control strategies are accelerating innovation in energy technology development: ▪ Application of real-time dynamic models for control development in hardware-in-the-loop simulations ▪ Realization of real-time digital twins and cyber-physical systems for dynamic performance optimization ▪ Incorporating AI/ML in dynamic controller development	**Moderators:** **Rob Hovsapian** Research Lab Fellow, SRNL **Anurag Srivastava** Power Chair Professor, WVU
12:15 – 1:15 pm	**Lunch Break**	
1:15 – 1:20 pm	**Safety video**	**B26 – Room G51**
1:20 – 1:45 pm	**Hyper / mini-Hyper tour**	**B4**
1:45 – 3:15 pm	**LEAP Highlight – UltraLab Demonstration**	**B4 – Control Room**
	This showcase will take attendees on a dynamic journey, an end-to-end demonstration of a new technology development paradigm accelerating innovation and derisking energy technology development across the energy sector. It begins with breakthrough AI-driven materials discovery and continues through digital engineering, technoeconomic analysis, and federated, dynamic system modeling. This showcase also demonstrates the roles of digital twins, acceleration techniques, hardware-in-the-loop simulations, cyber-physical systems integration, and geographically distributed co-simulation — culminating in a pilot-ready concept engineered for success. This high-impact demonstration brings together the combined expertise of NETL, INL, NLR, and SRNL, and ESnet, highlighting a powerful collaboration aimed at transforming how energy technologies are conceived and realized.	
	📷 **Group photo**	
3:15 – 3:45 pm	**Refreshment Break**	**B26 – Lobby**

3:45 – 5:00 pm	Session 6 – Cyber-Physical Systems	B26 – Room G51
	This session examines how cyber-physical systems can accelerate and derisk technology development across diverse domains: ▪ Roles of cyber-physical systems to derisk technology development ▪ How to design cyber-physical systems from concepts – from ideas to functional architectures, system interactions, and seamless connectivity	**Moderators:** **Jennifer Kurtz** ARIES Director, NLR **David Tucker** Research Physical Scientist, NETL

Day 3 – Integrated Hybrid Energy Systems

Wednesday, September 23, 2026

Time	Activity	
8:00 am – 12:00 pm	**Registration** Check-in and badging	**B26 – Lobby**
8:00 – 9:00 am	**Breakfast**	
9:00 – 9:45 am	**Keynote**	**B26 – Room G51**
	"Power Generation of the Future: What will it take to realize full autonomy?"	**Speaker:** **Bobby Noble** Senior Program Manager for Gas Turbine and Emerging Fuels & Technologies R&D, EPRI
9:45 – 11:00 am	**Session 7 – Needs of the Future Power Grid**	**B26 – Room G51**
	This session discusses the intermittency issues and opportunities in the power sector, and technology needs shaping the future power grid: ▪ Intermittency in both power generation and demand, inverter-based power to data centers ▪ Implications of power generation at low-capacity factors ▪ Current economic challenges ▪ Technology needs for future power generation	**Moderators:** **Ning Kang** Department Manager, Power & Energy System Department, INL **Steven Seachman** Program Lead, Process Control and Automation, EPRI
11:00 – 11:15 am	**Refreshment Break**	

11:15 am – 12:30 pm	**Session 8 – Accelerating Technology Transition and Commercial Adoption in the Energy Sector**	**B26 – Room G51**
	This session examines actionable pathways, valuation frameworks, and deployment strategies for transitioning next-generation power and energy technologies from demonstration to early commercial adoption: Key discussion areas include: ▪ **Deployment Pathways**: Navigating technical, regulatory, and capital hurdles to integrate novel technologies via power plant retrofits or full asset replacements ▪ **Early Adoption & Market Entry**: Identifying initial high-value commercial opportunities for advanced baseload, flexible, and industrial power generation systems ▪ **Comprehensive Value Quantification**: Applying multi-attribute valuation methods to monetize non-traditional grid and economic benefits, including dispatchability, operational flexibility, regional reliability, and lifecycle emissions	**Moderators:** **John Crane** Technology Manager for Advanced Turbines and Supercritical CO_2, NETL **Delmer Nagy** CEO, Analytic Advancements
12:30 – 1:30 pm	**Lunch Break**	
1:30 – 2:45 pm	**Session 9 – Realizing Autonomous Power**	**B26 – Room G51**
	This session discusses the emerging vision of autonomous power systems capable of operating, optimizing, and adapting with human-in-the loop intervention. ▪ Autonomous power generation ▪ Summary of key needs and research gaps to support rapid integration of diverse energy resource	**Moderators:** **Wolfgang Winkler** Professor Emeritus Hamburg University of Applied Sciences **Steven Seachman** Program Lead, Process Control and Automation, EPRI
2:45 – 4:00 pm	**NETL Research & Innovation Center Laboratory Tour**	
4:00 – 5:00 pm	**Refreshment Break and Closing**	**B4 – Control Room**
5:00 pm	**Adjourn**	

SPEAKERS

Nathan T. Weiland

Acting Director – Coal Center of Excellence, National Energy Technology Laboratory (NETL)

Dr. Nathan Weiland is the Director of the Coal Center of Excellence at the National Energy Technology Laboratory (NETL), which delivers integrated research & technology solutions to advance and expand the efficient use of our nation's coal resources. In this role, he develops and manages the R&D portfolio for the Coal Center of Excellence, and engages with industry to respond to technical challenges across the coal value chain. Dr. Weiland has been a Senior Fellow at NETL since 2020, building and sustaining world-class research and development competencies in energy conversion engineering, including programs in Turbines, Supercritical CO_2 (sCO_2) Power Cycles, Gasification, Advanced Materials, Simulation Based Engineering, Sensors & Controls, and Natural Gas & Hydrogen Technologies. Dr. Weiland currently leads the National Laboratory Gasification Consortium, as well as NETL's efforts to engage industry and other DOE Offices in energy conversion research, development and deployment. He received his B.S. in Mechanical Engineering from Purdue University in 1997, and his M.S. and Ph.D. in Mechanical Engineering from Georgia Tech in 2000 and 2004, respectively.

Sameer Kher

Senior Director of Product Development in Systems and Digital Twins, Ansys/Synopsys

Sameer Kher is Senior Director of R&D Engineering for Systems and Digital Twins at Synopsys. He leads the development of digital twin technologies that integrate physics-based simulation, artificial intelligence, and operational data to improve engineering and business outcomes. With over 20 years of experience in engineering software, simulation, controls, and systems engineering, Sameer works with industry and research partners to advance the use of digital twins across energy, industrial, and infrastructure applications. He is a frequent speaker on AI, simulation, and digital engineering.

Sarah Forbes

Director, Office of Coal, U.S. Department of Energy

Sarah is Director for the Office of Coal and is responsible for establishing priorities and overseeing financial and human capital management for research, development, and deployment (RD&D) on coal at the United States Department of Energy. Prior to Sarah's current role she served as the Director for the Office of Carbon Management. Since joining the Office of Fossil Energy and Carbon Management in 2015, she also held positions in the Strategic Planning, Analysis and Engagement Division and the Division of Minerals Sustainability and served a two-year detail assignment at the White House Council on Environmental Quality as Director for Carbon Capture, Utilization, and Sequestration. Sarah spent seven years working at the World Resources Institute, leading work on new energy technologies with a focus on carbon capture and storage. Early in her career, Sarah worked as a contractor conducting National Environmental Policy Act analysis and at the DOE National Energy Technology Laboratory as a Federal Project Manager. Sarah's experience includes leading international, interagency, and interdepartmental efforts on fossil energy and critical minerals. Sarah is a frequent keynote speaker at high-level conferences and has experience testifying for Congress as well as engaging cabinet-level political appointees and the media.

Bobby Noble

Senior Program Manager for Gas Turbine and Emerging Fuels & Technologies R&D, EPRI

Bobby Noble is Senior Program Manager for Gas Turbine and Emerging Fuels & Technologies R&D at EPRI, leading research across the wide spectrum of the energy system. With 22+ years of industry experience, he is the 2024 ASME Westinghouse Silver Medal awardee and an ASME Fellow. He serves on the ASME TEC Sector Council, the board for the Georgia Tech Research Corporation, and the Penn State ME Industrial and Professional Advisory Committee. He holds seven patents; co-edited the book Renewable Fuels: Sources, Conversion, and Utilization; and has co-authored 30+ journal and 80+ conference publications. He holds a BS in mechanical engineering from Clemson University and an MS in aerospace engineering from Georgia Tech.

MODERATORS

Daniel Iliescu

DOE Technical Account Director, Ansys/Synopsys

Daniel Iliescu is the DOE Technical Account Director at Ansys/ Synopsys. With an MS in Aeronautical Engineering and a Ph.D. in Materials Science, he has developed deep expertise across materials science, physical chemistry, fracture mechanics, structural FEA, additive manufacturing, and advanced microstructure characterization techniques such as SEM, EBSD, and ATF. Alongside technical specialization, he has more than nine years of experience as a Global Technical Account Manager supporting major energy and industrial organizations, including General Electric, Baker Hughes, ExxonMobil, Chevron, BP, Schlumberger, Chevron. He is recognized for a multidisciplinary skill set, a creative problem-solving mindset, and a customer focused operational approach.

Benjamin Omell

Research General Engineer, National Energy Technology Laboratory (NETL)

Benjamin Omell is a Research Engineer at the National Energy Technology Laboratory (NETL) as part of the system analysis group, where he has spent the past ten years advancing technologies and analytical methods for the power generation sector. He currently serves on the System Analysis team within NETL's Coal Center of Excellence, with expertise in dynamic modeling, advanced process control, and process optimization. He received his B.S. in Chemical Engineering from Michigan State University in 2008 and his Ph.D. from Illinois Institute of Technology in 2012. He joined NETL in 2016 and served as Technical Project Lead for CCSI and CCSI2. He currently serves as Principal Investigator for multiple digital engineering projects focused on stabilizing, optimizing, and growing the coal generation fleet.

Paolo Pezzini

Technical Leader, Process Controls and Automation
Generation Sector, EPRI

Paolo Pezzini is a Technical Leader III in Digitalization at the Electric Power Research Institute (EPRI) within the Generation Sector. His work centers on advanced and adaptive controls for power generation systems, with a focus on applying artificial intelligence and machine learning to traditional, renewable, and hybrid plants. Previously an Associate Scientist at the U.S. Department of Energy's Ames Laboratory, he led government-funded research in advanced controls, cyber-physical systems, and digital twins. His contributions include developing intelligent control algorithms for combined-cycle and hybrid systems and helping build one of the first cyber-physical architectures for hybrid energy systems at the DOE National Energy Technology Laboratory. Pezzini holds a Ph.D. in Mechanical Engineering specializing in automation and controls, as well as Master's and bachelor's degrees in computer engineering from the University of Genoa.

David Tucker

Research Physical Scientist, Power & Capture, National Energy Technology Laboratory (NETL)

David Tucker's career spans impactful research and scientific achievements across industry, academia, and government. At NETL, he serves as the Hybrid Performance (Hyper) project leader, conducting research in cyber physical systems, hardware in the loop simulations, real time dynamic modeling, hybrid system dynamics and controls, solid oxide fuel cell degradation, piezoelectric flow detection, high temperature piezoelectric valves, and blockchain-based cybersecurity. He developed a cyber physical system for energy research during his tenure at NETL. Tucker previously worked as a lead engineer in piping and materials engineering for a major refinery expansion at Jacobs Engineering Group. As managing director for Southern Ventures Inc., he led the company's public offering and directed efforts to convert waste materials into zero emission chemical products.

Rob Hovsapian

Senior Research Lab Fellow, Savannah River National Laboratory (SRNL)

Dr. Rob Hovsapian, currently an Energy Resilience Laboratory Research Fellow at the Savannah River National Laboratory (SRNL), holds a Master's in Control Systems and a PhD in Energy Systems from Florida State University (FSU). During his tenure at FSU- The Center for Advanced Power Systems (CAPS) and later at the Idaho National Laboratory (INL), he was instrumental in establishing Digital Real Time Simulation (DRTS) research capabilities. He also spearheaded the Advanced Research on Integrated Energy Systems (ARIES) research platform at the National Renewable Energy Laboratory (NREL) – currently known as the National Laboratory of the Rockies (NLR), where he developed the largest DRTS capabilities cluster in the Power & Energy R&D sector.

His doctoral work focused on the thermodynamic optimization of renewable energy systems. Dr. Hovsapian started and managed the Power and Energy Systems group at INL from 2014 to 2019 and previously directed the $96M Electric Ship R&D Consortium for the US Navy between 2003 and 2011. He brings a wealth of industrial R&D expertise, having pioneered integrated 3D printing at General Dynamics and led key projects for the USAF F-22 program at Northrop Grumman. His global experience includes successfully launching advanced manufacturing facilities and managing semiconductor start-ups across the Pacific Rim. Additionally, he has been instrumental in establishing cutting-edge power and energy research platforms, demonstrating his leadership in driving technological innovation.

Anurag Srivastava

Professor – Power Chair of Computer Science and Electrical Engineering, West Virginia University (WVU)

Anurag K. Srivastava holds the Power Chair Professorship with the Computer Science and Electrical Engineering Department at West Virginia University. Additionally, he is an adjunct professor at Washington State University, a senior scientist at the Pacific Northwest National Lab. Dr. Srivastava's research focuses on data-driven algorithms and tools for cyber-resilient electric energy systems. He is an IEEE Fellow; recipient of IEEE PES Pete Sauer Educator Award; author of over 450 technical publications, 4 books, and 3 patents; and leading multiple IEEE technical subcommittee/ WGs (resiliency, microgrid, voltage stability, distributed optimization).

Jennifer Kurtz

Director, Advanced Research on Integrated Energy Systems (ARIES), National Laboratory at the Rockies (NLR)

Jennifer Kurtz is the Director of Advanced Research on Integrated Energy Systems (ARIES) at the National Laboratory of the Rockies (NLR), formerly NREL. ARIES is the Department of Energy's research platform for energy system integration research and development to reduce risk and validation of a broad range of future energy systems configurations and technologies. As the ARIES Director, Dr. Kurtz leads the strategy, planning, and execution of the ARIES research and capabilities plan. Previous roles at NLR include Director for the Energy Conversion and Storage Systems Center and leading hydrogen and fuel cell research activities.
Research topics spanned technology validation, safety, codes and standards, market transformation, hydrogen infrastructure, grid integration, analysis, and renewable hydrogen production. Much of Dr. Kurtz's research has focused on increasing system efficiency, reducing system risks, improving system operations and reliability, and industry/agency partnerships. Prior to joining NLR, Dr. Kurtz worked at UTC Power, primarily in fuel cell system design and components. Dr. Kurtz received her PhD in systems engineering from Colorado State University, master's degree in mechanical engineering from Georgia Tech and her bachelor's degree in physics from Wartburg College.

Ning Kang

Department Manager, Power & Energy Systems Department, Idaho National Laboratory (INL)

Dr. Ning Kang is the Department Manager of the Idaho National Laboratory's (INL) Power & Energy Systems Department. Her research interests include nuclear-grid integration, power systems reliability and resilience, and AI integration into grid planning and operations. Ning also serves as the Department of Energy (DOE)'s Grid Modernization Laboratory Consortium's Flexible Generation and Load Pillar Lead, one of the six pillars under DOE's Grid Modernization Initiative. In addition, Dr. Kang is INL's lead for the Genesis Grid-AI mission. She is the main creator of an open-source T&D systems co-simulation software (TDcoSim) and holds five U.S. patents. She has co-authored 58 journal and conference papers, book chapters, and technical reports. Throughout her career, she has been invited to serve as session chairs, plenary session and panel speakers, as well as lecturers at more than 30 national and international conferences and meetings.

John Crane

Technology Manager, Advanced Turbines and Supercritical CO_2 Program, National Energy Technology Laboratory (NETL)

John Crane is currently the Technology Manager for the Advanced Turbines and Supercritical CO2 program at the U.S. Department of Energy's National Energy Technology Laboratory (NETL). Prior to joining NETL, John worked at Siemens Energy for 14 years on the development of high efficiency gas turbines with a focus on hot gas path components and associated technologies. He joined NETL in 2023 as the Technology Manager for Advanced Turbines to guide the technology development in support of the DOE mission to deliver low-cost and clean electric power.

Delmer Nagy

CEO, Analytic Advancements, LLC.

Del Nagy, Ph.D., is the CEO of Analytic Advancements LLC, where he works with technology developers, researchers, and organizations to evaluate emerging technologies, clarify their commercial and strategic potential, and improve the decisions that move innovations from concept toward deployment. His work spans technology assessment, analytics, business strategy, and the challenges involved in developing and scaling complex industrial and energy technologies.
Dr. Nagy has a background in information systems, research, and higher education and has collaborated with researchers and technology-development organizations on projects involving energy systems, technology commercialization, and innovation. He is particularly interested in helping technical teams connect engineering performance with the broader economic, organizational, and market questions that ultimately determine whether promising technologies are adopted.

Wolfgang G. Winkler

Professor Emeritus of Energy Technology and Thermodynamics at Hamburg University of Applied Sciences

Wolfgang G. Winkler holds a Diplom-Ingenieur degree and a PhD (Dr.techn) of the Technical University in Vienna. He was appointed as a Professor for energy technology and thermodynamics at the Hamburg University of Applied Sciences after different industrial management positions in the energy field, where he founded and chaired the Institute for Energy Systems and Fuel Cell Technology. He has played a prominent role in international standardization, chairing the secretariat of IEC TC 105 on fuel cell technologies and contributing to the IEC Advisory Committee on Energy Efficiency and other national and international fuel cell organizations. Winkler also served on the Scientific Advisory Group of the European Commission's JRC Institute for Energy and chaired the VDI (Verein Deutscher Ingenieure) scientific committee on fuel cells.
Now an Emeritus, he remains active in research rooted in thermodynamics and its application to design and product development.

Steven Seachman

Senior Principal Technical Leader, Process Controls and Automation Generation Sector, EPRI

Steven Seachman is the Program Lead in the Process Controls and Automation Program (P227) at the Electric Power Research Institute (EPRI). The program is part of the Digitalization group in the Generation and Low Carbon Resources Sector at EPRI. His R&D areas of focus include advanced and adaptive controls, instrumentation, and data analytics. He also leads EPRI's collaborative Supplemental called the Digital Demonstration Facility, which is performing collaborative research to demonstrate and evaluate integrated digital technologies on a host site.
Steve graduated with bachelor's and master's Degrees in Mechanical Engineering from West Virginia University. Following his academic career, he worked the Department of Energy's National Energy Technology Laboratory in Morgantown, West Virginia. During his tenure at NETL, he performed research on multiphase flow systems, managed projects in crosscutting research, and became the acting technology manager for Crosscutting research.

TECHNICAL COORDINATORS

Biao Zhang

Research Scientist, Leidos Research Support Team, National Energy Technology Laboratory (NETL)

Dr. Biao Zhang has conducted research at the National Energy Technology Laboratory (NETL) since 2019, specializing in cyber-physical simulation and grid demand response for hybrid energy systems. His research includes the development of real-time models, system analysis, control strategy, and geographically distributed co-simulation. Dr. Zhang has served as a reviewer for more than 10 high-impact journals, as well as for the U.S. National Science Foundation (NSF) and the American Society of Mechanical Engineers (ASME). He currently serves as Secretary of the ASME Power Division Conference Organizing Committee (2024–2026) and Program Coordinator for the ASME Digital Twin and Cyber-Physical System Technical Committee (2023–2026). He has authored 70 peer-reviewed journal articles.

Nor Farida Harun

Research Scientist, Leidos Research Support Team, National Energy Technology Laboratory (NETL)

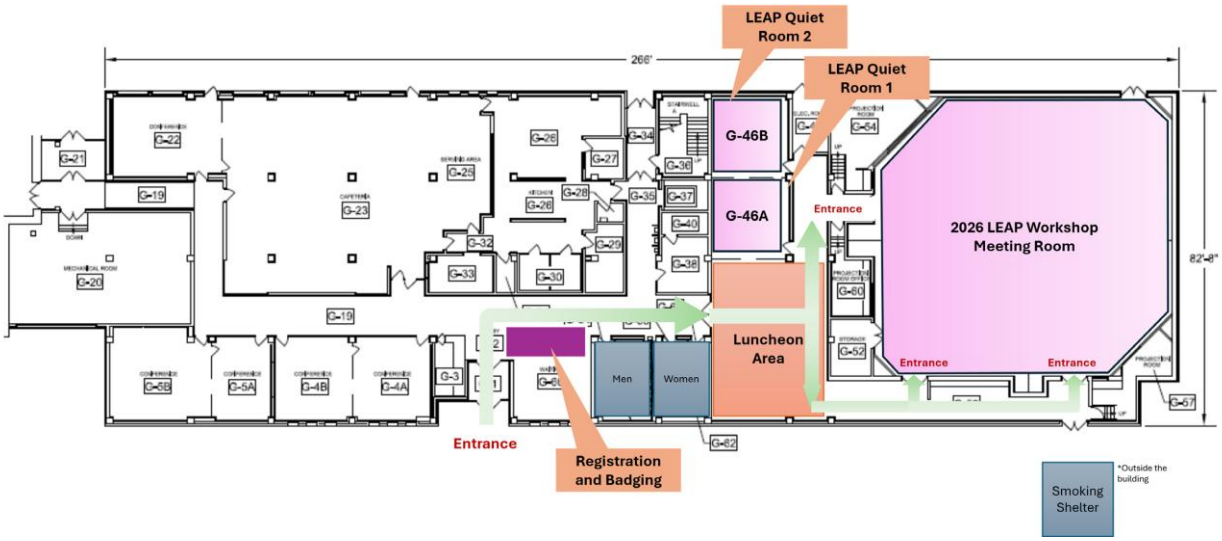
Nor Farida Harun is a research scientist with the Leidos Research Support Team (LRST) at the National Energy Technology Laboratory (NETL). She is a leading expert in cyber physical systems and the dynamic simulation of advanced energy technologies. Her work focuses on real time dynamic modeling, system integration, system identification, dynamic design, and the control and operability of integrated energy systems. With 15 years of experience, Dr. Harun has developed and applied cyber physical platforms across numerous advanced technologies, including recuperated solid oxide fuel cell/solid oxide electrolyzer cell–gas turbine hybrid systems, reformers, and carbon capture systems. She played a pivotal role in expanding the Hybrid Performance Project's research capabilities at NETL and later contributed to developing NETL's intelligent hardware and test facility, the Mini Hyper project. Dr. Harun holds a Ph.D. in chemical engineering from McMaster University in Hamilton, Canada, and has authored more than 50 peer reviewed publications.

Nana Zhou

Research Scientist, Leidos Research Support Team, National Energy Technology Laboratory (NETL)

Nana Zhou has a Ph.D. degree in Power Engineering. She has 16 years' experience in integrated energy systems and cyber-physical systems. Her research topics focus on dynamic operation, advanced control, and system design. She has performed system analysis on multiple systems from the design viewpoint, with the consideration of operability and flexibility. She was deeply involved in the design of cyber-physical fuel cell and gas turbine integrated energy system, cyber-physical reformer, cyber-physical carbon capture system. She has enriched experience in preliminary design, mechanical design, component modification (e.g., turbine & recuperator), system integration, piping and instrumentation diagram (P&ID), fabrication drawings, and material specifications, etc.

B26 FLOOR MAP



CONFERENCE WIFI

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