

# DIGITAL ENGINEERING CONFERENCE



SALT  
LAKE CITY

The fourth annual national laboratory-led Digital Engineering Conference

MAY 12-13, 2026



## CO-HOSTS

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## DIGITAL INNOVATION CENTER OF EXCELLENCE

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A collaborative network of like-minded experts dedicated to advancing digital engineering, digital twinning and digital transformation across next-gen projects.



Strategic leadership shaping the future of global energy through innovative digital strategies



National recognition establishing itself as a premier center of excellence through groundbreaking research



Community coordination for facilitating the exchange of best practices within the government and industry network



Industry and academic outreach engaging with universities, industry partners and other national labs to foster collaboration



Education enhancement developing advanced training and educational resources on digital engineering, digital twinning, scientific computing and artificial intelligence.

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*S.J. Quinney College of Law at the University of Utah in Salt Lake City, Utah, USA.*

# Welcome to the 2026 Digital Engineering Conference

Tuesday, May 12 – Wednesday, May 13, 2026

S.J. Quinney College of Law, 383 South University Street, Salt Lake City, UT 84112

## FEATURED KEYNOTES



**Aaron Starks**

*Chief Executive Officer  
and President of 47G:  
Utah Aerospace & Defense*



**Abhinav Gupta**

*Chief Executive Officer  
and President of PowerN*



**Bryan Lopez**

*Senior Director  
of Health and Scientific Missions  
for Microsoft*



**Jake Garfield**

*Deputy Executive Director  
of Utah's Office of Energy  
Development*



**Jefferson Moss**

*Executive Director  
of Utah's Governor's Office  
of Economic Opportunity*



**Liz Muller**

*Chief Executive Officer  
and Co-founder of  
Deep Fission*



**Manish Parashar**

*Chief AI Officer  
for the University of Utah*



**Mark Myshatyn**

*Program Manager  
for DOE's Genesis Mission*



**Misty Jordan**

*General Manager  
of United States Federal  
Solutions Sales for Microsoft*



**Nelli Babayan**

*Federal Artificial Intelligence  
Director for Microsoft*



**Rob Kessler**

*Head of AI for  
Aalo Atomics*



**Seth Berl**

*Co-founder  
of OpSpark AI*



**Taylor Randall**

*President  
of the University of Utah*

**TUESDAY, MAY 12, 2026**Schedule *(All times listed are Mountain Daylight Time)*

7:30	<b>Arrival and Breakfast</b> (catered)
8:30	<b>Welcome</b> Logan Browning   <i>Conference Chair, Idaho National Laboratory</i> Christopher Ritter   <i>Director of Digital Innovation Center of Excellence (DICE), Idaho National Laboratory</i>
8:45	<b>Morning Keynote</b> Liz Muller   <i>Chief Executive Officer and Co-founder of Deep Fission</i>
9:30	<b>Break and Transition</b>
9:45	<b>Morning Breakout Sessions 1-5</b> Focused presentations on emerging digital engineering tools and practices to enhance innovation.
11:45	<b>Break and Transition</b>
12:00	<b>Lunch</b> (catered)
1:30	<b>Afternoon Keynote</b> Misty Jordan   <i>General Manager of United States Federal Solutions Sales for Microsoft</i> Nelli Babayan   <i>Federal Artificial Intelligence Director for Microsoft</i>
2:15	<b>Break and Transition</b>
2:30	<b>Afternoon Breakout Sessions 6-10</b> Focused presentations on emerging digital engineering tools and practices to enhance innovation.
4:30	<b>Close</b>
4:45	<b>Reception and Poster Session</b> (catered)
6:30	<b>Close</b>

## TUESDAY, MAY 12, 2026 | MORNING BREAKOUT SESSIONS 1-5

<b>Breakout Session 1</b>	<b>Classroom 6623   Moderator: Natalie Hergesheimer</b>
<b>9:45</b>	Accurate Network Throughput Estimation from Digital Twin Measurements Using ML   Anees Al Najjar
<b>10:05</b>	Lyapunov-Based Iterative Learning of Regions of Attraction for Autonomous Systems   Yue Chen
<b>10:25</b>	Simulation Twins' - Sensing and Control of Unseen Quantities Through Real-Time Assimilation of Imaging to FEA   Ashley Gannon
<b>10:45</b>	From Source Documents to Safety Analysis: AI-Assisted FSAR Generation and Review at INL   Kevin O'Rear and Matt Huang
<b>11:05</b>	Autonomous Design Optimization for Nuclear Energy (AutoDONE): An Agentic Framework for Nuclear Power Plant Design   Sonali Sinha Roy
<b>11:25</b>	From Afterthought to First Principle: Modernizing Digital Engineering for Mission-Ready Interoperability   Erica Dretzka
<b>Breakout Session 2</b>	<b>Classroom 6619   Moderator: Harleen Sandhu</b>
<b>9:45</b>	Mapping the Future: Leveraging an Enterprise Architecture Approach to Accelerate Digital Transformation in the Nuclear Security Enterprise   Aaron Comis
<b>10:05</b>	Digital Twin for Lower Divertor Plasma Facing Component Bakeout Process and Predicting Transient Heating Effects of High-Energy Plasma Pulses   Peter Dugan
<b>10:25</b>	Reproducibility of LLM-Assisted Qualitative Analysis: A Controlled Multi-Trial Study Across Data   Samantha Ross
<b>10:45</b>	Alchemy: A Model-Based Approach for 2D to 3D Autonomous Nuclear System Design   Harleen Sandhu
<b>11:05</b>	There and Back Again: From Model-Based Systems Engineering to Intrusion Detection Systems   Max Taylor
<b>11:25</b>	Prototyping Quantum AI for Complex Systems: A Multi-Domain Approach to Optimization, Prediction, and Advanced Learning Frameworks   Larry Deschaine

<b>Breakout Session 3</b>	<b>Classroom 6613   Moderator: Jieun Lee</b>
9:45	Development of a Remote Operations AGN-201 Reactor Digital Twin (ROAR-DT)   Jieun Lee
10:05	Securely Connecting AI with Guardrails to your Engineering Data   Ross Billings
10:25	From Data to Knowledge: An MBSE- and Knowledge Graph-Centered AI Framework for Nuclear Reliability and Licensing   Diego Mandelli
10:45	From Documents to Decisions: An Integrated Platform for Mission Driven Installation Energy Resilience Decision-making   Adam Pluth
11:05	Digital Twins to Enable Licensing of Nuclear Innovations   Nicholas Luciano
11:25	NETL Datacenter Digital Twin Use Case to Help Demonstrate AFERA (novel framework for end-to-end applied engineering)   Walter Schwarz
<b>Breakout Session 4</b>	<b>Flynn Worship Room 6500   Moderator: Emerald Ryan</b>
9:45	Interpreting the Effect of Structural on the Band Gap of Covalent Organic Frameworks Through Multiple-Kernel Regression   Alatheia Davies
10:05	Integrating SysML v2 with Simulation Process and Data Management for AI-Enabled Digital Engineering   Jiachuan Wang
10:25	Advancing Engineering Productivity With Agentic AI   Reece Teramoto
10:45	Automating Nuclear Engineering Modeling Simulation with Domain Knowledge Aware Multi-Agent Framework: An AutoSAM Case Study   Yang Liu
11:05	Keeper: A Digital Twin Framework for Autonomous Operations at the Neutron Radiography Reactor   Emerald Ryan
11:25	DoE a DEER: Digital Engineering Ecosystem Readiness for DOE   Sriram Krishnan
<b>Breakout Session 5</b>	<b>Moot Courtroom/Auditorium   Moderator: Jaren Brownlee</b>
9:45	From Siloed to Streamlined: A Scalable Digital Engineering Framework for Developing Complex but Confident Energy System Models   Alec Guay, Adam Yonge, and Felipe Mercado
10:05	Visualization for Predictive Maintenance Recommendation   Linyu Lin
10:25	Reactor In-core Power Profile Reconstruction using Ex-core Measurements   Haoyu Wang
10:45	MIT Lincoln Laboratory's Digital Engineering Transformation: Extending the Digital Thread   Stephanie Sposato
11:05	Agentic AI benefits to the Nuclear Security Enterprise UAF Modeling   Arthur Davis
11:25	Ensuring Operator Primacy in the Autonomous Control of a Nuclear Reactor   Greg Shannon

## TUESDAY, MAY 12, 2026 | AFTERNOON BREAKOUT SESSIONS 6-10

<b>Breakout Session 6</b>	<b>Classroom 6623   Moderator: Haoyu Wang</b>
<b>2:30</b>	A Hierarchical Model for PLC Code Quality, Safety and Cybersecurity   Sean McBride
<b>2:50</b>	Moving Fast in the NSE: Utilization of Enterprise Digital Engineering   Ryan Shaw
<b>3:10</b>	Closing the Loop: Scalable Human-in-the-Loop Evaluation for Specialized AI Agents and Digital Twins   Parker Erickson & Chris Sniffen
<b>3:30</b>	What's happening at The Utah San Rafael Energy Laboratory   Jaron Wallace
<b>3:50</b>	Democratizing Data Discovery, Access, and Use Across Computing Platforms with the National Data Platform and the Science Data Exchange   Jess Tate
<b>4:10</b>	Making Reuse Real for MBSE - Update on the OMG Reusable Asset Specification 3.0   Sriram Krishnan
<b>Breakout Session 7</b>	<b>Classroom 6619   Moderator: Harleen Sandhu</b>
<b>2:30</b>	Establishing a Digital Engineering Framework: Applying Digital Thread and Digital Twin in Product Development   Johan Valcarcel
<b>2:50</b>	Leveraging a Domain-specific Ontology (DSO) to Incorporate Human Factors Engineering (HFE) into a Model-based Enterprise Architecture (MBEA)   Sarah Rudder
<b>3:10</b>	Binary Instrumentation of Programmable Logic Controller Programs for Enhanced Controlled System Resilience   Abdullah Al Farooq
<b>3:30</b>	PRIDE   Lee Senter
<b>3:50</b>	Dynamic Simulation Lab Initiative: Advancing Modeling & AI Integration at Westinghouse   Jun Liao
<b>4:10</b>	Enabling Digital Twin Creation in Inaccessible Radioactive Environments Using EV-Powered Mobile Robotics and Multi-Modal Sensing   Pengcheng Cao
<b>Breakout Session 8</b>	<b>Classroom 6613   Moderator: Jaren Brownlee</b>
<b>2:30</b>	DeepLynx Nexus: Evolving Architecture Under Accelerating Innovation   Jaren Brownlee
<b>2:50</b>	Generative AI Agentic Architecture for Nuclear Safety Analysis   Vaibhav Yadav
<b>3:10</b>	Digital Engineering Environment Pilot for the Nuclear Security Enterprise   Michael Alba
<b>3:30</b>	Model-Based Systems Engineering for Efficient Nuclear Wastewater Management   Peter Drozdewicz
<b>3:50</b>	Clearing the Path for AI-Assisted Systems in Regulated Industries: From Explainability to Regulatory-Grade Assurance   Prashant Kandle
<b>4:10</b>	Enabling Nuclear Power Plant Digital Twins through Transformer Architectures   Eric Cervi

<b>Breakout Session 9</b>	<b>Flynn Worship Room 6500   Moderator: TBD</b>
<b>2:30</b>	From Data Gravity to Discovery: Secure-by-Design, AI-Ready Data Pipeline Architectures for Federated DOE Environments   Robert King
<b>2:50</b>	The Nuclear Twins Website: A Unified Digital Twin Hub for Education, Operations, and Research at the UT Austin TRIGA Reactor   Jeongwon Seo
<b>3:10</b>	Toward Agents that Adapt Rapidly to User Feedback   Kenneth Marino
<b>3:30</b>	AI in Industry: What Survey Data Reveals About AI Adoption Across Product Development and Engineering   Alan Mendel
<b>3:50</b>	Detecting Subliminal Trait Transmission in Large Language Models via Feature-Level Analysis   Val Kimbrough
<b>4:10</b>	Conditional Distribution Estimation of Building Characteristics with Diffusion Models for Urban Energy Modeling   Saumya Sinha
<b>Breakout Session 10</b>	<b>Moot Courtroom/Auditorium   Moderator: TBD</b>
<b>2:30</b>	Metadata Standards for Nuclear Deterrence Test Data   Olivia Beck
<b>2:50</b>	Digital Engineering of Agility and Risk in Complex Systems of Systems   Robert Hayes
<b>3:10</b>	Transforming Engineering Design Review to Accelerate and Derisk Nuclear Energy Deployment   MJ Smith
<b>3:30</b>	Leveraging Formal Methods to Build High Assurance Hybrid Autonomous Control Systems for Nuclear Power   Dane Sabo
<b>3:50</b>	Integrated Modeling and Design of Microwave Volumetric Additive Manufacturing for Ceramics   Donna Guillen
<b>4:10</b>	Every Interface is a Risk   Nicole Davis

**WEDNESDAY, MAY 13, 2026**Schedule *(All times listed are Mountain Daylight Time)*

8:00	<b>Breakfast</b> (catered)
9:00	<b>Welcome</b> Logan Browning   <i>Conference Chair, Idaho National Laboratory</i>
9:15	<b>Opening Keynote</b> Rob Kessler   <i>Head of AI for Aalo Atomics</i>
10:00	<b>Fireside Chat with Industry Leaders</b> Abhinav Gupta   <i>Chief Executive Officer and President of PowerN</i> Seth Berl   <i>Co-founder of OpSpark AI</i> Bryan Lopez   <i>Senior Director of Health and Scientific Missions for Microsoft</i> <i>*Moderated by Kelly Rose   Senior Fellow for Computational Science &amp; Engineering at National Energy Technology Laboratory</i>
11:00	<b>Break and Transition</b>
11:30	<b>University of Utah Remarks</b> Manish Parashar   <i>Chief AI Officer for the University of Utah</i> Taylor Randall   <i>President of the University of Utah</i>
12:00	<b>Lunch</b> (catered)
1:00	<b>Fireside Chat with Utah Leaders</b> Jefferson Moss   <i>Executive Director of Utah's Governor's Office of Economic Opportunity</i> Jake Garfield   <i>Deputy Executive Director of Utah's Office of Energy Development</i> <i>*Moderated by Laura Nelson   Regional Engagement Lead for the State of Utah at Idaho National Laboratory</i>
2:00	<b>Break and Transition</b>
2:15	<b>Afternoon Keynote</b> Aaron Starks   <i>Chief Executive Officer and President of 47G: Utah Aerospace &amp; Defense</i>
3:00	<b>Department of Energy's Genesis Mission</b> Mark Myshatyn   <i>Program Manager for DOE's Genesis Mission</i>
3:30	<b>Closing Remarks</b> Logan Browning   <i>Conference Chair, Idaho National Laboratory</i>
3:45	<b>Close</b>

