



AGENDA

Day 1, February 20, 2024, Tuesday

Breakfast and Registration

7:30–8:30 (MST – Mountain Standard Time)

Welcome Remarks and Keynote Presentations

8:30–10:00 (MST)	Alan Sellinger, Professor <i>Colorado School of Mines</i>	Welcome
	Walter Copan, Vice President for Research and Technology Transfer <i>Colorado School of Mines</i>	Welcome Address
	Anna Erickson, ETI Consortium Director, Professor <i>Georgia Institute of Technology</i>	ETI Overview
	Siegfried Hecker Professor of Practice <i>Texas A&M University and Middlebury Institute of International Studies at Monterey</i> Fifth director of the Los Alamos National Laboratory (1986 – 1997)	Keynote Presentation: “The Changing Global Nuclear Landscape”

Break, and Poster Setup

10:00–10:30 (MST)

Thrust Area 1: Computer & Engineering Sciences for Nonproliferation

Session Chair: Prof. Paul Wilson, University of Wisconsin-Madison

10:30–11:30 (MST)	Andrew Fishberg, Student <i>Massachusetts Institute of Technology</i>	Collaborative SLAM for Facilitating Radiological Search and Mapping with UWB Enabled Multi-Agent Platforms
	Pavel Tsvetkov, Professor <i>Texas A&M University</i>	Multi-Modal Remote Surveillance of Localized Terrestrial Processes: Resolution, Event Characterization, Data Processing, and Analysis
	Sarah Popenhagen, Student <i>University of Hawai'i</i>	Improvements to Machine Learning Model for Near-Real-Time Rocket Detection
	Conrad Hougen, Student <i>University of Michigan</i>	Author Topic Manifold Summarization for Interpreting Co-Author Networks

Poster Overview Presentations (one-minute each poster)

11:30–12:00 (MST)



Lunch

12:00–13:00 (MST)

Poster Presentation / Discussion

13:00–13:45 (MST) – Odd Poster Number

#1	Samuel Kei Takazawa, Student <i>University of Hawai'i</i>	Comparative Analysis of Explosion Signals on Smartphones and Seismometers
#3	Francisco Gonzalez-Castillo, Student <i>The University of Texas at Austin</i>	Development of Additively Manufactured Cryptographic Structures for Tamper Detection
#5	Sarah Scott, Student <i>Duke University</i>	Multitask Learning of Scanning Electron Microscopy and Synthetic Thermal Tomography Images for Detection of Defects in Additively Manufactured Metals
#7	Shirin Wyckoff, Student <i>University of Hawai'i</i>	Sonic Boom Energy from Atmospheric Models
#9	Nicole Hege, Student <i>Colorado School of Mines</i>	Molten Salt Spectroelectrochemistry of Europium
#11	Nathaniel Morgan, Student <i>Washington State University</i>	Exploring Protein Expression in <i>Exophiala dermatitidis</i> to Identify Biological Mechanisms of Radioprotection
#13	Quinn Hua Shuai, Student <i>The Ohio State University</i>	Radiation and Trap Effects in Ni/Al ₂ O ₃ /Ga ₂ O ₃ MIS Capacitors
#15	Kate Thompson, Student <i>University of Wisconsin-Madison</i>	Assessing Potential Hyperspectral Bioindicators for Metal-induced Vegetative Stress
#17	Michael Jin, Student <i>The Ohio State University</i>	SiC Schottky Diode for Radiation Detection
#19	Vanessa Linero, Student <i>Colorado School of Mines</i>	Fission Product Yield Measurements of Pu-239 Irradiated at the USGS TRIGA Reactor

13:45–14:30 (MST) – Even Poster Number

#2	Andrew Fishberg, Student <i>Massachusetts Institute of Technology</i>	Collaborative SLAM for Facilitating Radiological Search and Mapping with UWB Enabled Multi-Agent Platforms
#4	Matthew Vigil, Student <i>University of Wisconsin-Madison</i>	Sputtering Yield As Structural and Compositional Signature In Refractory Complex Concentrated Alloys
#6	Bryan Doan, Student <i>The University of Texas at Austin</i>	Collection and Analysis of Additive Manufacturing Signatures for Proliferation Detection



#8	Jingzhe Zack Zhang, Student <i>The University of Texas at Austin</i>	Advanced Additive Manufacturing: Development of a Multiple-Material Selective Laser Melting Machine
#10	Gracie Eccleston, Student <i>Georgia Institute of Technology</i>	Tipped Carbon Nanotube Field Emission X-ray Generator
#12	Shae Cole, Student <i>Georgia Institute of Technology</i>	Application of Organic Semiconductor for Direct Ionizing Radiation Detection
#14	Mackenzie Duce, Student <i>Georgia Institute of Technology</i> Caleb Chandler, Student <i>Colorado School of Mines</i>	Thermal Neutron Detection and Pulse Shape Discrimination using Polysiloxane Scintillators with B10-enriched Molecules
#16	Dina Liacopoulos, Student <i>Colorado School of Mines</i>	Small Molecule Organic Glass Scintillators for Radiation Detection
#18	Lucas McKown, Student <i>Georgia Institute of Technology</i>	The Chemiresistive Functionalization of Carbon Nanotubes for Gas Detection
#20	Julia Nakhleh, Student <i>University of Wisconsin-Madison</i>	Multitask Learning for Neural Network Regularization

Break

14:30–14:45 (MST)

Thrust Area 2: Advanced Manufacturing for Nonproliferation

Session Chair: Prof. Steven Biegalski, Georgia Institute of Technology

14:45–15:45 (MST)	Alec Mangan, Student <i>University of Wisconsin-Madison</i>	Acoustic Signatures and Machine Learning in Additive Manufacturing
	Alec Pfundheller, Student <i>Texas A&M University</i>	Understanding the Cause of Suppressed Void Swelling in Additively Manufactured Steels
	Domenic DiCarlo, Student <i>Georgia Institute of Technology</i>	Application of Machine Learning on Side Channel Data streams from Advanced Machining Process
	William Kunkel, Student <i>University of Wisconsin-Madison</i>	Prediction of Optical Signatures and Their Influence on Part Performance: a Model System Using 316L Stainless Steel

Break

15:45–16:00 (MST)

National Lab Recruitment Session

16:00–17:00 (MST)

Reception, and Conversation with Keynote Speaker Hecker about “The Movie Oppenheimer and Beyond.”

17:00–20:00 (MST)



Day 2, February 21, 2024, Wednesday

Breakfast

7:30–8:30 (MST – Mountain Standard Time)

Thrust Area 3: Novel Instrumentation for Nuclear Fuel Cycle Monitoring

Session Chair: Prof. Raymond Cao, The Ohio State University

08:30–09:30 (MST)	Alex Bocchieri, Student <i>University of Wisconsin - Madison</i>	Imaging Scintillation Events via a Lens
	Allen Wood, Student <i>The University of North Carolina at Chapel Hill</i>	High Performance Single Crystal Organic Inorganic Hybrid Perovskite Direct Radiation Detectors
	Alexander England, Student <i>Georgia Institute of Technology</i>	Applications of Polysiloxane Plastic Scintillators in Nuclear Non-Proliferation and Beyond
	Daryl Giglio, Student <i>The Ohio State University</i>	4H-Silicon Carbide as Field Deployable Sensor for Trace Actinide Detection

Break

9:30–09:50 (MST)

Thrust Area 1: Computer & Engineering Sciences for Nonproliferation

Session Chair: Prof. Paul Wilson, University of Wisconsin-Madison

09:50–10:20 (MST)	Jacob Tellez, Student <i>Colorado School of Mines</i>	The Influence of Rare Earth Metal Cations on the Coordination, Aggregation, and Transport of Trivalent Uranium in the LiCl-KCl Eutectic
	Jordan Stomps, Nonproliferation Data Scientist <i>Oak Ridge National Laboratory</i>	Contrastive Machine Learning and Hyperparameter Optimization for Detecting Nuclear Material Transfers

Thrust Area 3: Novel Instrumentation for Nuclear Fuel Cycle Monitoring

Session Chair: Prof. Raymond Cao, The Ohio State University

10:20–11:05 (MST)	Shae Cole, Student <i>Georgia Institute of Technology</i>	Application of Organic Semiconductor for Direct Ionizing Radiation Detection
	Jarod Remy, Student <i>The Ohio State University</i>	Demonstration and Characterization of High-resolution 4H-SiC Schottky Diode Alpha Particle Detectors at High Temperatures
	Yuguo Tao, Senior Research Engineer <i>Georgia Institute of Technology</i>	Innovative Carbon Nanotube-based Field Emission Electronics for X-ray Generation & Imaging



Break

11:05–11:30 (MST)

ETI Academic Program and Summer School Discussion

11:30–11:45 (MST) Pavel Tsvetkov, Professor
Texas A&M University

Oral & Poster Presenter Students Awards, and Closing Remarks

11:45–12:00 (MST) Anna Erickson, ETI Consortium Director, Professor
Georgia Institute of Technology

Lunch, and Poster Removal

12:00–13:00 (MST)

Lab Tours

13:00–15:30 (MST) Electroweak Interactions Group Lab tour — tour a lab whose research primarily focuses on performing precision measurements of nuclear decay to probe the fundamental interactions of nature. (30 min)

Radiochemistry Lab tour — tour a lab whose efforts span from assessing the fundamental chemistry of the heaviest available elements to responsible stewardship of nuclear materials in the fuel cycle. (30 min)

United States Geological Survey TRIGA Reactor tour — tour a 1 MW TRIGA reactor whose mission is to support USGS science by providing information on geologic, plant, and animal specimens to advance methods and techniques unique to nuclear reactors. (90 min, including travel time)

Adjourn

15:30 (MST)



(workshop website QR)

Workshop Website: <https://eti.gatech.edu/eti-annual-workshop-2024>