



AGENDA

Day 1, March 29, 2022, Tuesday

Breakfast and Registration

7:30–8:00 (ET)

Welcome Remarks & Keynote Presentations

8:00–10:00 (ET)	Anna Erickson, Consortium Director, Associate Professor <i>Georgia Institute of Technology</i>	Welcome and Introduction
	Jim Hudgens, GTRI Director	Welcome
	Keith McManus, Deputy Director <i>National Nuclear Security Administration</i>	Overview of the Integrated University Program
	Luke Erickson, Technical Advisor to the NA-22 Data Science Portfolio <i>Pacific Northwest National Laboratory</i>	TA1 Keynote Presentation
	Thomas Kurfess, Professor and HUSCO/Ramirez Distinguished Chair in Fluid Power and Motion Control <i>Georgia Institute of Technology</i>	TA2 Keynote Presentation
	Ralph James, Associate Laboratory Director <i>Savannah River National Laboratory</i>	TA3 Keynote Presentation

Break and Poster Setup

10:00–10:15 (ET)

Thrust Area 3: Novel Instrumentation for Nuclear Fuel Cycle Monitoring

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

10:15–11:45 (ET)	Raymond Cao, Professor <i>The Ohio State University</i>	Direct Deposit and Placement of Am-241 Alpha Source on SiC Sensors for Their Performance Evaluation
	Alex Bocchieri, Student <i>University of Wisconsin - Madison</i>	Scintillation-Based Gamma Imaging with SPAD Camera
	Arith Rajapakse, Postdoc <i>Georgia Institute of Technology</i>	Investigating the Response of Carbon Nanotube Radiation Detectors to MeV X- rays and Electrons
	Jarod Remy, Student <i>The Ohio State University</i>	Evaluation of GaN Schottky diodes for radiation detection and performance under high neutron fluence



Oliver Moreno, Student
Georgia Institute of Technology

Enabling Low-Cost Radiation Detectors
Through Organic Electronic Device
Design, Fabrication, and Integration

Poster Overview Presentations (one-minute each)

11:45–12:00 (ET)

Lunch

12:00–13:00 (ET)

Poster Presentation / Discussion

13:00–14:00 (ET)

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| #1 | Henry Burns, Student
<i>Georgia Institute of Technology</i> | Photoionization Simulation for Improved RIMS Accuracy |
| #2 | Jordan Stomps, Student
<i>University of Wisconsin-Madison</i> | SNM Radiation Signature Classification Using Semi-Supervised Machine Learning in Shadow |
| #3 | Miguel Avalos, Student
<i>Texas A&M University</i> | Multi-modal Remote Surveillance of Localized Processes Using Cube Satellite Platforms: Fuel Cycle and Reactor Facilities and Event Recognition |
| #4 | Samuel Kemp, Student
<i>Georgia Institute of Technology</i> | Radiological Multi-Source Search Using Heterogeneous Vehicle Array in Urban Environments |
| #5 | Samuel "Kei" Takazawa, Student
<i>University of Hawai'i</i> | Explosion Detection using Transfer Learning via YAMNet |
| #6 | Andrew Fishberg, Student
<i>Massachusetts Institute of Technology</i> | Collaborative SLAM for Facilitating Radiological Search and Mapping on a UWB Enabled Multi-Agent Aerial Platform |
| #7 | Zachary Minot, Student
<i>Georgia Institute of Technology</i> | Using Machine Vision to augment safety in Makerspaces |
| #8 | Caleb Chandler, Student
<i>Colorado School of Mines</i>
Jonathan Arrue, Student
<i>Georgia Institute of Technology</i> | Polysiloxane Scintillators for Pulse Shape Discrimination and their Temperature Dependence |
| #9 | Evan Cornuelle, Student
<i>The Ohio State University</i> | Refractory Metal Based Schottky Diodes on β -Ga ₂ O ₃ for Radiation Studies |
| #10 | Haley Schramm, Student
<i>Washington State University</i> | Probing Molecular Mechanisms of Radioresistance: Toward Tunable Pigmentation for Passive Fungal Sensor Arrays of Radiation Exposure |
| #11 | Jacob Tellez, Student
<i>Colorado School of Mines</i> | Investigation of Fission Product Influence on the UCl ₃ -LiCl-KCl Eutectic |



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| #12 | Michael Jin, Student
<i>The Ohio State University</i> | Fabrication of an Implanted SiC Diode for Neutron Detection |
| #13 | William Smith, Student
<i>Washington State University</i> | Spectroscopic Signatures of UCl_3 in LiCl/KCl eutectic via AIMD simulations |
| #14 | Nicole Hege, Student
<i>Colorado School of Mines</i> | Advancements towards molten salt spectroelectrochemistry |

Thrust Area 2: Advanced Manufacturing for Nonproliferation

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

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| 14:00–15:15 (ET) | Michael Short, Associate Professor
<i>Massachusetts Institute of Technology</i> | The Stored Energy Fingerprints of Radiation Damage for Nuclear Forensics |
| | Alec Mangan, Student
<i>University of Wisconsin-Madison</i> | Identifying Signatures of High Entropy Alloy Additive Manufacturing Using High Throughput Experiments |
| | *Bradley Gladden, Student
<i>The University of Texas at Austin</i> | Survey of Additive Manufacturing Signatures for the Prevention of Nuclear Proliferation |
| | *Miguel Pena, Student
<i>Texas A&M University</i> | Radiation responses of additive manufactured stainless steel |

Recruitment Session

15:15–15:45 (ET)

Thrust Area 1: Computer & Engineering Sciences for Nonproliferation

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

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| 15:45–17:00 (ET) | *Genevieve Flaspohler, Student
<i>Massachusetts Institute of Technology</i> | Autonomous Trajectory Planning for Mapping Deep Sea Hydrothermal Plumes |
| | *Christopher L. Dean, Student
<i>Massachusetts Institute of Technology</i> | Discovering Genomic Bio-Signatures for Monitoring and Verification with Bayesian Nonparametric Inference |
| | *Milton Garces, Professor
<i>University of Hawai'i</i> | Hunga Tonga Eruption Data Fusion |
| | *Sarah Popenhagen, Student
<i>University of Hawai'i</i> | Transfer Learning for Near-Real-Time Rocket Launch Detection |
| 17:00–18:00 (ET) | Adjourn | |
| 18:00–21:00 (ET) | Reception | |



Day 2, March 30, 2022, Wednesday

Breakfast

7:30–8:30 (ET)

Thrust Area 1: Computer & Engineering Sciences for Nonproliferation

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

8:30–9:25 (ET)

Conrad Hougen, Student
University of Michigan

A Geometry-Driven Approach To
Longitudinal Topic Modeling Of Nuclear-
Scientific Literature

*Jonathan How, Professor
Massachusetts Institute of Technology

Collaborative SLAM for Facilitating
Radiological Search and Mapping on a
UWB Enabled Multi-Agent Aerial
Platform

*David Carlson, Assistant Professor
Duke University

Self-Supervised Learning Captures
Improved Spatial Variation from Satellite
Imagery

9:25–9:40 (ET)

Break

Thrust Area 2: Advanced Manufacturing for Nonproliferation

Session Chair: Prof. Steven Biegalski, Georgia Tech

9:40–11:10 (ET)

Ankur Kumar Agrawal, Student
University of Wisconsin-Madison

Surface signatures of additively
manufactured 316L stainless steel

Natalie Cannon, Student
Georgia Institute of Technology

Additive Manufacturing: A Challenge to
Nuclear Nonproliferation

Avery Nguyen, Student
Massachusetts Institute of Technology

Measuring Forensic Signatures of
Historical Uranium Enrichment in PCTFE

Nicholas Greenfield, Student
Georgia Institute of Technology

Using Machine Learning to Identify
Machining Parameters in CNC Milling

*Patrick Snarr, Student
The University of Texas at Austin

Indirect Selective Laser Sintering of
Nuclear Cermets

11:10–11:25 (ET)

Break

Thrust Area 3: Novel Instrumentation for Nuclear Fuel Cycle Monitoring

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

11:25–12:00 (ET)

Ashok Dheenan, Student
The Ohio State University

Radiation Tolerant Wide Bandgap
Microelectronics

Yuguo Tao, Research Engineer
Georgia Institute of Technology

Excellent photon confinement for next-
generation back-illuminated silicon
photomultipliers

Lunch and Poster/Discussion

12:00–13:00 (ET)



Academic Program Discussion, 2022 ETI Summer School

13:00–13:20 (ET) Pavel Tsvetkov, Associate Professor, *Texas A&M University*
Steven Biegalski, Professor, *Georgia Institute of Technology*

National Laboratory Internship, Knowledge Transfer Discussion

13:20–13:40 (ET) Milton Garces, Professor, *University of Hawai'i*

13:40–14:00 (ET) **Poster Removal**

Lab Tours

14:00–16:00 (ET) Institute of Electronics and Nanotechnology (Yuguo Tao)
Invention Studio (Amit Jariwala)
3-D Printing Facilities (Billyde Brown)
Radiological Science and Engineering Lab (Arith Rajapakse)

16:00 (ET) **Adjourn**