



AGENDA

Day 1, October 6, 2020, Tuesday

Opening Presentations

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| 11:00–11:20 (ET) | Anna Erickson, Consortium Director,
Associate Professor
<i>Georgia Institute of Technology</i> | Welcome and Introduction |
| 11:20–11:40 (ET) | Keith McManus, Deputy Director
<i>National Nuclear Security Administration</i> | Overview of the Integrated University
Program |

Thrust Area 1: Computer & Engineering Sciences for Nonproliferation

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

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| 11:40–12:00 (ET) | Lawrence Carin, Professor
<i>Duke University</i> | Lifelong Learning with Deep Neural
Networks |
| 12:00–12:20 (ET) | Genevieve Flaspohler, Student
<i>Massachusetts Institute of Technology</i> | Inference and Planning for Autonomous
Monitoring in Complex Environments |
| 12:20–12:40 (ET) | Dave Williams, ORNL Consortia Liaison,
Senior Technical Staff Member
<i>Oak Ridge National Laboratory</i> | Data and Analysis Opportunities at the
HFIR-REDC Measurements Testbed |
| 12:40–13:00 (ET) | Milton Garces
<i>University of Hawai'i at Manoa</i> | Information Fusion with Quantized
Uncertainty for Heterogeneous
Multimodal Data |
| 13:00–13:10 (ET) | Break | |

Thrust Area 2: Advanced Manufacturing for Nonproliferation

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

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| 13:10–13:30 (ET) | Rachel C. Connick, Student
<i>Massachusetts Institute of Technology</i> | Measuring Low-dose Radiation Effects in
Polymers Using DSC for Forensic
Applications |
| 13:30–13:50 (ET) | Kevin Le, Student
<i>Georgia Institute of Technology</i> | Correlating Geometry to Additive
Manufacturing Process Signatures |

Thrust Area 3: Novel Instrumentation for Nuclear Fuel Cycle Monitoring

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

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| 13:50–14:10 (ET) | Caleb Chandler, Student
<i>Colorado School of Mines</i>
Jonathan Arrue, Student
<i>Georgia Institute of Technology</i> | Tailoring Polysiloxane Matrices in Plastic
Scintillators for Efficient Light Output and
Pulse Shape Discrimination |
| 14:10–14:30 (ET) | Neil Taylor, Student
<i>The Ohio State University</i> | Large Area Vertical Gallium Oxide
Schottky Diodes |
| 14:30–14:40 (ET) | Break | |



ADAPD and Academic Program Discussion

14:40–15:00 (ET)	Mark Greaves, Chief Scientist of the ADAPD Venture <i>Los Alamos National Laboratory</i>	Advanced Data Analytics for Proliferation Detection
15:00–15:30 (ET)	Pavel Tsvetkov, Professor <i>Texas A&M University</i>	Academic Program Discussion
15:30–15:40 (ET)	Break	

Poster Presentations Gatherly Platform Link: <http://2020etiworkshop.gatherly.io>

15:40–17:00 (ET)		
TA1-A	Mario Mendoza, Student <i>Texas A&M University</i>	Multi-modal Remote Surveillance of Localized Processes Using Cube Satellite Platforms: Phenomena, Feasible Architectures, and Sensor Considerations
TA1-B	Samuel Kei Takazawa, Student <i>University of Hawai'i at Manoa</i>	Data Fusion and Feature Extraction of Explosions Recorded on Smartphones
TA1-C	Jacob Tellez, Student <i>Colorado School of Mines</i> Nicole Hege, Student <i>Colorado School of Mines</i> Will Smith, Student <i>Washington State University</i>	Evaluation of Chemical Speciation to Enable Online Monitoring of Molten Salt Reactors
TA1-D	Sarah Popenhagen, Student <i>University of Hawai'i at Manoa</i>	Investigation of Rocket Signatures Collected by Smartphones
TA2-A	Peter Sobel, Student <i>Georgia Institute of Technology</i>	Development of a Radioxenon Forensics Laboratory
TA2-B	Emily Orton, Student <i>Georgia Institute of Technology</i> Nicholas Oyebanji, Student <i>Georgia Institute of Technology</i> Rohan Banerjee, Student <i>Georgia Institute of Technology</i>	An Approach Towards Understanding Makerspaces Through Side-Channel Data Streams
TA2-C	Patrick Lolachi Snarr, Student <i>University of Texas at Austin</i>	Investigating Design Constraints for Indirect Selective Laser Sintering of Alumina
TA3-A	Haley Schramm, Student <i>Washington State University</i>	Probing Molecular Mechanisms of Radiotropism in Melanized Fungus
TA3-B	Muhammad Ismail Khan, Student <i>The Ohio State University</i>	Neutron Imaging Sensor Using Silicon Carbide Technology
17:30 (ET)	Adjourn	



Day 2, October 7, 2020, Wednesday

Keynote Presentations

Session Chair: Consortium Director Anna Erickson, Associate Professor, Georgia Institute of Technology

11:00–11:20 (ET)	Laura Holgate, Vice President for Materials Risk Management <i>Nuclear Threat Initiative</i>	TBA
11:20–11:40 (ET)	Joseph Beaman, Professor <i>University of Texas at Austin</i>	TBA

Thrust Area 1: Computer & Engineering Sciences for Nonproliferation

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

11:40–12:00 (ET)	Sue Zheng, Student <i>Massachusetts Institute of Technology</i>	Bayesian Experimental Design with Variable Cost
12:00–12:20 (ET)	Eric Shumaker, Student <i>University of Michigan</i>	Twin Artificial Neural Networks for Gamma Ray Spectra Comparison
12:20–12:40 (ET)	Christopher L. Dean, Student <i>Massachusetts Institute of Technology</i>	Lightweight Data Fusion via Conjugate Mappings
12:40–12:50 (ET)	Break	

Thrust Area 2: Advanced Manufacturing for Nonproliferation

Session Chair: Prof. Steven Biegalski, Georgia Tech

12:50–13:10 (ET)	Emily Orton, Student <i>Georgia Institute of Technology</i> Nicholas Oyebanji, Student <i>Georgia Institute of Technology</i> Rohan Banerjee, Student <i>Georgia Institute of Technology</i>	An Approach Towards Understanding Makerspaces Through Side-Channel Data Streams
13:10–13:30 (ET)	Ankur Agrawal, Student <i>University of Wisconsin-Madison</i>	High-throughput Process Mapping and Microstructural Control in Additively Manufactured 316L Stainless Steel

Thrust Area 3: Novel Instrumentation for Nuclear Fuel Cycle Monitoring

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

13:30–13:50 (ET)	Arith Rajapakse, Student <i>Georgia Institute of Technology</i>	Improving the Device Response of Carbon Nanotube Based Radiation Detectors
13:50–14:10 (ET)	Oliver Moreno, Student <i>Georgia Institute of Technology</i>	Large Area Organic Photodetectors for Radiation Detection Applications
14:10–14:20 (ET)	Break	



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14:20–15:50 (ET)

TA1-A	Samuel Kemp, Student <i>Georgia Institute of Technology</i>	Resource Allocation and Path Planning for Multi-Vehicle Autonomous Source Localization and Mapping
TA1-B	Jordan Stomps, Student <i>University of Wisconsin-Madison</i>	Identifying Data Streams Valuable to Collaborative Intelligence
TA1-C	Jonathan Tobin, Student <i>University of Hawai'i at Manoa</i>	Data Exploration of UAV Flights Recorded on Smartphones
TA1-D	Andrew Torgesen, Student <i>Massachusetts Institute of Technology</i>	Collaborative SLAM for Facilitating Radiological Search and Mapping on a Multi-agent Aerial Platform
TA2-A	Miguel Pena, Student <i>Texas A&M University</i>	Radiation Responses of Additive Manufactured Stainless Steel
TA2-B	Henry Burns <i>Georgia Institute of Technology</i>	Forensic Signatures from Laser-Induced Resonance Ionization
TA3-A	Peter Rudd, Student <i>University of North Carolina, Chapel Hill</i>	Observing Charge Trapping in Metal Halide Perovskites: Using Time-resolved Photoluminescence to Assess Material Quality for Photodetector Application
TA3-B	Evan Cornuelle, Student <i>The Ohio State University</i>	Toward Understanding Radiation-induced Trap States in Gallium Oxide Devices

15:50–16:00 (ET) **Break**

Laboratory Recruitment Gatherly Platform Link: <http://2020etiworkshop.gatherly.io>
Session Chair: Prof. Milton Garces, University of Hawai'i at Manoa

16:00–17:30 (ET)

ANL	Candido Pereira and Alex Heifetz	Argonne National Laboratory
BNL	Susan Pepper	Brookhaven National Laboratory
INL	David Chichester and Ali Josephson	Idaho National Laboratory
LANL	Geoff Fairchild	Los Alamos National Laboratory
LBNL	John Valentine	Lawrence Berkeley National Laboratory
LLNL	Vince Lordi and Jason Brodsky	Lawrence Livermore National Laboratory
NNSS	Cleat Zeiler	Nevada National Security Site
ORNL	David Williams, Philip Bingham, and Ken Dayman	Oak Ridge National Laboratory
PNNL	Robert Brigantic, Eva Brayfindley, and Karl Pazdernik	Pacific Northwest National Laboratory
PPPL	N/A	Princeton Plasma Physics Laboratory
SNL	David Peters	Sandia National Laboratory
SRNL	Laura Tovo, Kaitlyn Lawrence, and Joy McNamara	Savannah River National Laboratory

17:30 (ET) **Adjourn**