



THE UNIVERSITY OF TENNESSEE

**Oak Ridge Innovation Institute**

## 2025 Second Annual Research Symposium

March 25, 2025

**Location: University of Tennessee Conference Center, 600 Henley Street, Knoxville, TN 37902**

*The UT-Oak Ridge Innovation Institute's 2025 Research Symposium highlights groundbreaking collaborative research between UT and Oak Ridge National Laboratory. The symposium features projects funded in Fiscal Year 2024 through UT-ORII and the Science Alliance's Support for Affiliated Research Teams program (StART), Program for Advancing Collaborative Teams (PACT), Graduate Advancement and Training Education (GATE) fellowships, and Bredesen Center UT-ORNL PhD programs.*

### **AGENDA**

9:00 AM – 9:20 AM

#### **Welcome & Opening Remarks**

David Sholl, UT-ORII Executive Director & UT Knoxville Vice Provost

Shawn Campagna, UT-ORII Director of Scientific Programs & Science Alliance

### **Clean Manufacturing & Advanced Materials**

9:20 AM – 9:40 AM

#### **Prototyping Quantum Magnets for Spintronic Application**

Murthy Krishnan, Graduate Research Assistant, Materials Science and Engineering

*(Presenting on behalf of Assistant Professor Yishu Wang, StART awardee)*

9:40 AM – 9:50 AM

#### **Bredesen Center Graduate Student Presentation**

Roo Walker, Energy Science and Engineering

9:50 AM – 10:10 AM

#### **Engineering Quantum Interfaces and Phase Transitions for Next-Generation Quantum Microelectronics**

Joon Sue Lee, Assistant Professor, Physics; StART awardee

10:10 AM – 10:20 AM

#### **Bredesen Center Graduate Student Presentation**

Nathan Gladden, Genome Science and Technology

10:20 AM – 10:40 AM

#### **Engineering Transport Pathways in Nanostructured Electrolytes**

Gila Stein, Professor, Chemical and Biomolecular Engineering; StART awardee

10:40 AM – 10:50 AM

#### **Bredesen Center Graduate Student Presentation**

Emma Foley, Data Science and Engineering

10:50 AM – 11:00 AM

#### **Break**

## Radiopharmaceutical & Health-Related Research

11:00 AM – 11:20 AM

### **Special Presentation: Ion Beam**

Elijah Davis, Post-Doc, Tennessee Ion Beam Materials Lab

*(Presenting on behalf of Associate Professor Khalid Hattar, TIBML director, Department of Nuclear Engineering; StART awardee)*

11:20 AM – 11:30 AM

### **Bredesen Center Graduate Student Presentation**

Tianchun Xue, Genome Science and Technology

11:30 AM -11:50 AM

### **Microbial Cascades from Animal Decomposition Hot Spots in Sphagnum Bogs**

Hannah Noel, Grad Research Assistant, Microbiology

*(Presenting on behalf of Professor Jennifer DeBruyn, Biosystems Engineering and Soil Science, StART awardee)*

11:50 AM – 12:00 PM

### **Bredesen Center Graduate Student Presentation**

Hashan Fernando, Data Science & Engineering

12:00 PM – 12:20 PM

### **Diagnosing Neuroendocrine Tumors with Radiopharmaceuticals**

Alexis Sanwick, Graduate Research Assistant, Nuclear Engineering

*(Presenting on behalf of Assistant Professor Ivis Chaple Gore, StART awardee)*

12:20 PM – 12:30 PM

### **Bredesen Center Graduate Student Presentation**

Steven Tavis, Genome Science and Technology

12:30 PM – 1:45 PM

**Student Poster Session** – Conference Center Atrium

**Lunch** – Conference Center Dining Room

## Transportation, Energy Storage & Other Energy-Related Research

1:45 PM – 2:05 PM

### **Optimizing Switches and Distributed Generation Placement for Enhanced Power System Resilience**

Hugh Medal, Assistant Professor, Industrial and Systems Engineering; StART awardee

2:05 PM – 2:15 PM

### **Bredesen Center Graduate Student Presentation**

Ark Ifeanyi, Energy Science and Engineering

2:15 PM – 2:35 PM

### **Enhancing the Security of Connected and Automated Vehicle (CAV) Ecosystem**

Doowon Kim, Assistant Professor, Electrical Engineering and Computer Science; StART awardee

2:35 PM – 2:45 PM

### **Bredesen Center Graduate Student Presentation**

Russ Limber, Data Science and Engineering

2:45 PM – 3:05 PM

**Quantum Computing in Cybersecurity and Cyber-Physical Systems**

Himanshu Thapliyal, Associate Professor, Electrical Engineering and Computer Science; StART awardee

3:05 PM – 3:15 PM

**Bredesen Center Graduate Student Presentation**

Fady Anees, Energy Science and Engineering

3:15 PM – 3:35 PM

**Flexible Turbine for Efficient Wave Energy Harvesting**

Haochen Li, Assistant Professor, Civil and Environmental Engineer; StART awardee

3:35 PM – 3:55 PM

**Storage and Conversion at ORNL and UT**

Tom Zawodzinski, Governor's Chair, Chemical and Biomolecular Engineering; PACT awardee

3:55 PM – 4:00 PM

**Closing comments**

***Thank You for Attending the UT-ORII's Second Annual Research Symposium***