

# 3rd Annual COEIT Research Day, 2026



## COLLEGE OF ENGINEERING & INFORMATION TECHNOLOGY

### **Research Day Working Group**

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**COEIT Research Day | May 1, 2026**  
Schedule at a glance

<p align="center">8:30 - 9:00 AM Coffee and Networking Session Location: UC Ballroom</p>		
<p align="center">9:00 - 9:30 AM <b>Opening Remarks</b> Location: UC Ballroom COEIT Dean Jeanne van Briesen, VPR Karl Steiner</p>		
<p align="center">9:30 - 10:30 AM Poster setup Location: UC Ballroom</p>	<p align="center">9:30 - 10:45 AM <b>Session 1: Bioengineering, Chemical Synthesis &amp; Materials</b> <i>Research Talks</i> Location: UC 310</p>	<p align="center">9:30 - 10:45 AM <b>Session 2: Healthcare Solutions with AI Technology &amp; Engineering</b> <i>Research Talks</i> Location: UC 312</p>
<p align="center">10:30 AM-12:00 PM <b>Poster Session</b> Location: UC Ballroom</p>	<p align="center">11:00 AM -12:00 PM <b>Government Panel</b> Location: UC 312 <b>Matt Cimino</b>, Maryland Department of Commerce <b>Paul Pellegrino</b>, US Army Research Laboratory <b>Dan Kostov</b>, NIH <b>Ed Gorzkowski</b>, US Naval Research Laboratory</p>	
<p align="center">12:00 - 1:00 PM <b>Poster viewing</b> and refreshments Booths with representatives from <b>Navy SBIR/STTR</b> and <b>bwtech@UMBC</b> Location: UC Ballroom, Hallway</p>		
<p align="center">1:00 PM-2:30 PM <b>Poster session</b> Location: UC Ballroom</p>	<p align="center">1:00 - 2:00 PM <b>Industry/Entrepreneurship Panel</b> Location: UC 312 <b>Sohail Chaudhry</b>, Precise Software Solutions <b>Rahul Thakar</b>, NIH NHLBI Catalyze Program <b>Ramana Vinjamuri</b>, Department of Computer Science and Electrical Engineering, UMBC</p>	
<p align="center">Want to see more interdisciplinary research on campus? Visit the <b>Polar Ice Museum: From Greenland to South Baltimore Interactive Installation</b></p> <p align="center">May 1 &amp; 2, 2026 10:00 AM – 4:00 PM Location: Imaging Research Center Production Studio (ITE Building, Room 108)</p>	<p align="center">2:00 - 3:00 PM <b>Keynote: Dr. Susan Gregurick (NIH)</b> Location: UC 312</p>	
	<p align="center">3:15 PM - 4:00 PM <b>Session 3: Quantum, Physical Systems &amp; Security</b> <i>Research Talks</i> Location: UC 310</p>	<p align="center">3:15-4:00 PM <b>Session 4: AI &amp; Learning</b> <i>Research Talks</i> Location: UC 312</p>



## UC Ballroom

### Opening remarks (9:00 - 9:30 AM)

*The poster session will feature 115 posters representing all four academic departments and many of the research centers within COEIT. The session will be broken up in the following way:*

**Morning poster session (10:30 AM - 12 PM)**

**Poster viewing hour and refreshments (12 to 1 PM - All presenters stay with their poster)**

**Afternoon poster session (1 PM - 2:30 PM)**

## UC 310

### Session 1: Bioengineering, Chemical Synthesis & Materials (9:30 - 10:45 AM, UC 310)

Themes: Bioengineering, Environment and Sustainability, Manufacturing, Security

1. Heparin/Collagen Multilayers Enhance Extracellular Vesicle Production in Human Mesenchymal Stem Cells  
Authors: Melanie J. Nelson and Jorge Almodovar (Presenter)
2. Leveraging cell-free synthetic biology and protein language models to produce biological polymers  
Author: David Garcia (Presenter)
3. New strategies for generating hybrid anion-exchange resins for selective treatment of (ultra)short-chain PFAS  
Authors: Marylia Duarte Batista, Trevor Gibson, Emily Piazza, Ke He, and Lee Blaney (Presenter)
4. In vitro assessment of Bicuspid Aortic Valve (BAV) hydrodynamics with varying heart rate  
Authors: Nadeem Shah (Presenter), Charles D. Eggleton, and Sayantan Bhattacharya
5. Effects of Anisotropy and Defects on Mechanical Performance of Brittle Materials  
Authors: Keith Bowman (Presenter), Gizaw Melese, Rokia Elgharably, Daniel Combs, Isaac Poole, Cenia Sims, and Ye Lu

### Session 3: Quantum, Physical Systems & Security (3:15 PM - 4:00 PM, UC 310)

Themes: Artificial Intelligence, Security, Physical Systems, Software Engineering

1. A Unified Multiphysics Modeling Framework for Photodetectors  
Authors: Ishraq Md Anjum (Presenter), Seyed Ehsan Jamali Mahabadi, Thomas F. Carruthers, Ergun Simsek, and Curtis R. Menyuk



2. Variational Gibbs State Preparation on Trapped-Ion Devices  
Authors: Reece Robertson (Presenter), Mirko Consiglio, Josey Stevens, Emery Doucet, Tony J. G. Apollaro, Sebastian Deffner
3. AI Agents in Offensive Security  
Authors: Sairam Bokka (Presenter) and Keke Chen

## UC 312

### Session 2: Healthcare Solutions with AI Technology & Engineering

(9:30 - 10:45 AM, UC 312)

Themes: Artificial Intelligence, Bioengineering, Healthcare, Human-centered Technology and Accessibility, Community Partnerships, Energy, Environment and Sustainability

1. Acoustic Intelligence for Everyday Healthcare  
Author: Dong Li (Presenter)
2. Sensorization, with Care: Community-Driven Smart Technology for Assisted Living  
Authors: Tera Reynolds and Roberto Yus (Co-presenters)
3. Title: Closed-loop Embodied AI Under Physical Constraints for Health and Agriculture  
Authors: Anuradha Ravi (Presenter) and Nirmalya Roy
4. COHERE: Collaborative Optimization of Human Engagement and Robot Effectiveness  
Authors: Sruthi Sundharram, Jake Whitt, Golnaz Moharrer, Andrea Kleinsmith (Co-presenter), Charissa Cheah (Co-presenter), Christine Mallinson (Co-presenter), and Ramana Vinjamuri (Co-presenter)
5. Evaluating the Impact of Pathogen-Mediated Infective Endocarditis on Bioprosthetic Aortic Valve Function  
Authors: Corine Jackman Burden and Sayantan Bhattacharya (Co-presenters)

### Government Panel (11:00 AM -12:00 PM, UC 312)

- **Matt Cimino**, Maryland Department of Commerce
- **Paul Pellegrino**, US Army Research Laboratory
- **Dan Kostov**, NIH Office of Translational Initiatives and Program Innovations (OTIPI)
- **Ed Gorzkowski**, US Naval Research Laboratory

### Industry/Entrepreneurship Panel (1:00 - 2:00 PM, UC 310)

- **Sohail Chaudhry**, Precise Software Solutions
- **Rahul Thakar**, NIH NHLBI Catalyze Program
- **Ramana Kumar Vinjamuri**, Department of Computer Science and Electrical Engineering, UMBC



## Keynote Talk (2:00 - 3:00 PM, UC 312)

- **Susan Gregurick**, Associate Director for Data Science and Director of the Office of Data Science Strategy (ODSS) at the National Institutes of Health (NIH)

## Session 4: AI & Learning (3:15 PM - 4:00 PM, UC 312)

Themes: Artificial Intelligence, Education, Software Engineering

1. Exploring Peer-to-Peer Evaluation with an AI-Supported Learning Tool in an Introductory Programming Course  
Authors: Ben Cohen (Presenter), Omobolanle Niyi-Owoeye, Kevin Lemus, Srushti Dharmale, Carine Marette, Patricia Ordóñez, and Edward Dillon
2. Sequentially Acquiring Concept Knowledge to Guide Continual Learning  
Authors: Shivanand Kundargi (Presenter), Kowshik Thopalli, Tejas Gokhale
3. How to write bug-free scientific computing software  
Author: Tyler Josephson (Presenter)

Visit the **Polar Ice Museum: From Greenland to South Baltimore** Interactive Installation, May 1 & 2, 2026



<https://irc.umbc.edu/virtual-ice-museum/>

May 1 & 2, 2026 | 10:00 AM – 4:00 PM

Location: Imaging Research Center Production Studio (ITE Building, Room 108)



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