



CARTA Industry Advisory Board Meeting

September 10, 2025

1:00 PM Opening Remarks | Karuna Joshi, UMBC CARTA Director

1:05 PM Welcome Remarks | Karl Steiner, Vice President for Research and Creative Achievements, UMBC; Jeanne Van Briesen, Dean College of Engineering and Information Technology (COEIT), UMBC

1:15 PM NSF Program Director Remarks | Hang Liu, NSF

1:25 PM CARTA Phase II Center Update | Dimitris Metaxas, Director, NSF CARTA

1:30 PM Site Director Updates | Rutgers University; University of Maryland, Baltimore County; University of Miami; Arizona State University

2:00 PM Keynote [TBD]

2:25 PM Break

2:30 PM NSF Evaluator | Norm Rapino

2:35 PM New Proposals

[TBD]

3:00 PM Ongoing Collaborative Project Reports

- Digital Twins, Cyber-physical Vulnerabilities, and Adversarial Attacks | Stephen Dennis and Yelena Yesha (UM)—DHS
- Collaborative Project Digital Twins, Cyber-Physical Vulnerabilities, and Adversarial Attacks: CARTA/UMBC Digital Twin for Ports | Milt Halem and Yaacov Yesha (UMBC)—DHS

Individual Proposals Progress Reports

3:20 PM Rutgers University | Dimitris Metaxas



- 5D Cardiac Digital AI Clone to Improve Diagnosis and Assessment of Cardiac Disease
- DynPMic Digital AI Clone for Coupled DynPMical Systems to Improve Collision Prediction
- Human Explainable AI by Injecting Domain Knowledge into Deep Learning Methods: Applications to Cancer Diagnosis

3:35 PM University of Maryland, Baltimore County (UMBC)

- LLM Integrated Knowledge Graph for Multi-Modal Disaster Data | Karuna Joshi
- RISC-V Hardware Architecture Customizations and Evaluation Platforms | Ryan Robucci and Mohamad Younis

3:45 - 3:55 pm Break

3:55 PM University of Miami

- Evaluating HOPPR Foundation Models for Medical Imaging | Phuong Nguyen
- Considerations in the Design of Nanomagnetic Two-Qubit Quantum Gates to Enable Highly Scalable Room Temperature Quantum Computer Chips for Small- and Large-Machine Learning Applications | Sakhrat Khizroev
- Evaluation of Foundation AI Models for Healthcare Applications | Yusen Wu
- Safeguarding Devices: Protecting Children Online | Yelena Yesha
- Application of Digital Twin Technology to Healthcare” – Yelena Yesha

4:30 PM Arizona State University | Ming Zhao

- Accelerating Large Machine-Learning Models with Memory Disaggregation
- Accelerating Data-Intensive Computing with Storage Functions

4:45-5:15 PM Closed IAB Session

5:15 PM IAB feedback to CARTA Directors (Closed Session)

5:30 PM Concluding Remarks and Vote of Thanks | Karuna Joshi UMBC Director