



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 CARTA Phase II Center Update | Dimitris Metaxas, Director, NSF CARTA

1:20 PM Site Directors Updates | Dimitris Metaxas, Rutgers University; Karuna Joshi, University of Maryland, Baltimore County; Mitsunori Ogihara, University of Miami; Ming Zhao, Arizona State University

1:40 PM NSF Evaluator Remarks | Norm Rapino

1:45 PM New Proposals

- Considerations in the Design of Highly Scalable Room-Temperature Nanomagnetic Quantum Computer Chips for Small- Language Models | UMiami , PI: Sakhrat Khizroev and Yelena Yesha
- AI Experts for Predicting and Explaining Parkinson's Disease Progression | UMiami, PIs: Yusen Wu, Ihtsham Haq, Phuong Nguyen, Yelena Yesha
- ASL Generation from Text | Rutgers, PI: Dimitris Metaxas
- Cardiac Reconstruction from K-space | Rutgers, PI: Dimitris Metaxas

2:10 PM Break

2:20 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 Projects Progress Reports

2:40 PM Rutgers University

- 3D Cardiac Digital AI Clone to Improve Diagnosis and Assessment of Cardiac Disease | PI: Dimitris Metaxas
- Dynamic Digital AI Clone for Coupled Dynamical Systems to Improve Collision Prediction | PI: Dimitris Metaxas
- Human Explainable AI by Injecting Domain Knowledge into Deep Learning Methods: Applications to Cancer Diagnosis | PI: Dimitris Metaxas

2:55 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

3:10 PM University of Miami

- Evaluating HOPPR Foundation Models for Medical Imaging | PI: Yelena Yesha, co PI: Phuong Nguyen and Yusen Wu
- Evaluation of AI in Medical Imaging | PI: Yelena Yesha, co PI: Phuong Nguyen and Yusen Wu

3:20 PM Arizona State University

- Accelerating Large Machine-Learning Models with Memory Disaggregation | PI: Ming Zhao
- Accelerating Data-Intensive Computing with Storage Functions | PI: Ming Zhao

3:30 PM NSF Program Director Remarks | Hang Liu, NSF

3:40 PM IAB Members Panel - Future Directions for CARTA | lead by IAB Chair

4:10 PM Break

4:15 PM Closed IAB Voting Session

4:45 PM IAB feedback to CARTA Directors (Closed Session)

5:00 PM Concluding Remarks and Vote of Thanks | Karuna Joshi UMBC Director