

Second Annual CATM Symposium

The second annual Center for Advanced Transportation Mobility (CATM) Symposium was held at Warm Hearth Village on November 5, 2018, in Blacksburg, VA. The symposium was a chance for students, faculty, and researchers from the three consortium member institutions: North Carolina Agricultural and Technical State University (lead), Virginia Tech, and Embry–Riddle Aeronautical University to share the various activities occurring within the University Transportation Center (UTC) over the previous year.

CATM is a UTC funded by the U.S. Department of Transportation in 2016 under the FAST act. The consortium's research efforts concern improving mobility for people and goods with a focus on transportation issues faced by vulnerable populations, which includes people with disabilities and/or socioeconomic challenges, the elderly, youth, bicyclists, and pedestrians.

The keynote speaker for the event was Mohammed Yousuf, Program Manager, US DOT's Accessible Transportation Technologies Research Initiative (ATTRI). Yousuf is an inventor, engineer, and innovator leading the drive toward Universal Access and Mobility. Through his leadership of the ATTRI and the Universal Automated Community Transport (UACT) program, Yousuf works to remove barriers a traveler might encounter on any part of a trip, from the planning stage to arriving at the final destination. His work explores ways to leverage vehicle autonomy, robotics, and enhanced indoor and outdoor navigation tools to accomplish this.

In promoting a new future reality for universal mobility, Mohammed, who relies on crutches to get around and knows of the challenges faced by vulnerable road users firsthand, foresees a system incorporating augmented, virtual and mixed reality tools that allow people of all abilities to meet their transportation needs with ease and independence. He is also involved in research involving transportation related technologies, including wireless communications, mapping, positioning and navigation, and robotics and intelligence for surface transportation.



(from left) John Antin, Research Program Manager, Center for Advanced Transportation Mobility, and Mohammed Yousuf, Program Manager, US DOT's Accessible Transportation Technologies Research Initiative



Welcome and Opening Remarks

- Jon Antin, Research Program Manager, Center for Advanced Transportation Mobility, VTTI
- Tom Dingus, Director, VTTI
- Maranda McBride, Director, Center for Advanced Transportation Mobility, N.C. A&T

Maranda McBride welcomes attendees.



Education and Student Enrichment

- Teresa McRae, Education and Workforce Development Program Manager and Carletta Dudley, Education and Outreach Coordinator, both N.C. A&T
- Dahai Lui, Aviation Research coordinator, ERAU
- Justin Owens, Senior Researcher VTTI

Dahai Lui shares activities happening at ERAU..



Research Presentations – Continuing Projects

- Automated Last Mile Connectivity for Vulnerable Road Users: Andy Aldin, VTTI
- Development, Design, and Calibration of the Vulnerable Road User Mobility Assistance Platform (VRU-MAP): Justin Owens, VTTI
- Multi-scale Model for Transportation Systems Under Emergency Conditions: Dahai Lui, ERAU and Xiuli (Shelly) Qu, N.C. A&T

Xiuli (Shelly) Qu explains her research results.



Keynote Address

- Mohammed Youssef, Program Manager, US DOT's Accessible Transportation Technologies Research Initiative

Left: Mohammed Youssef delivers the keynote address.

Below left: Mary Lind shares details of her research.



Research Presentations – New Projects

- Asymmetric Information Sharing in Dialysis Paratransit Using an Agency Approach: Mary Lind, N.C. A&T
- Analysis of the Non-Driving Mobility Needs of People with Disabilities: Justin Owens, VTTI
- Traveler's Rationality in Online Anticipatory Emergency Response Model: Hyoshin (John) Park, N.C. A&T
- Assessing Perceptions and Willingness to Interact with Autonomous Vehicle: Scott Winter, ERAU
- Particle Dynamics Model for Hurricane Evacuation and Fuel Shortage: Model Based Policy Analysis: Sirish Namilae, ERAU

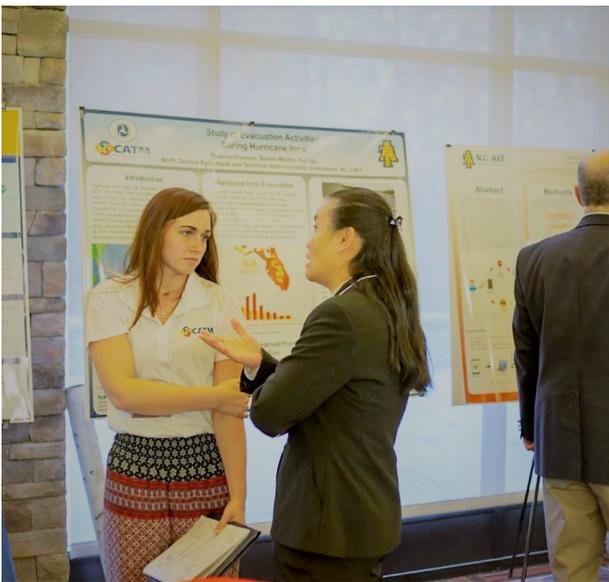


Cynthia Glass explains her poster to Carletta Dudley.

CATM Student Researchers Poster Presentations

CATM student researchers made visual presentations representing their work and were on hand to answer questions and discuss their studies. Some of the student researchers present included:

- **Miriam Alabi** is a doctoral student in the Industrial and Systems Engineering Department at N.C. A&T specializing in human factors. Her research focuses on understanding human panic behavior in emergency situations. Dr. Younho Seong is her faculty advisor.



Theanna Drennon in discussion with Shelly Qu.

- **Devi Chilukuri** is a doctoral student in the Mechanical Engineering Department at N.C. A&T. Her research topic is “Development of a Mobile Application Using Augmented Reality to Support Aged Drivers and Pedestrians”. Sun Yi is Devi’s faculty advisor.
- **Theanna Drennon** is a junior undergraduate student at N.C. A&T majoring in industrial and systems engineering. Her research topic is “Study of Evacuation Activities During Hurricane Irma”. Xiuli (Shelly) Qu is her mentor.

- **Cynthia Glass** is a doctoral candidate in the Computational Science and Engineering Department at N.C. A&T. Her area of research is “A Heuristic Optimization of the Airline Recovery Problem During a Severe Weather Disruption”. Ms. Glass brings over 20 years of experience of working in the program management and engineering fields. Dr. Lauren Davis is her faculty advisor.



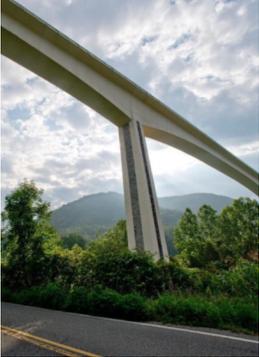
- **Karreem Hogan** is pursuing his PhD in electrical engineering at N.C. A&T.
- **David Richmond** is pursuing a doctorate in philosophy in industrial and systems engineering at N.C. A&T.

Kareem Hogan expresses thoughts about his poster.



Safe-D –VTTI's National UTC

Dr. Miguel Perez, Education and Workforce Development Coordinator, who leads the VTTI Center for Data Reduction and Analysis Support, gave an informative presentation about the Safety through Disruption (Safe-D) University Transportation Center (UTC). The mission of Safe-D is to proactively promote safety through a data-driven collaboration among the nation's brightest researchers. Safe-D endeavors to maximize the potential safety benefits of disruptive technologies through targeted research that addresses the most pressing transportation safety questions.



Tour of VTTI's Smart Road Test Tracks

The day culminated with a tour of VTTI's smart road test tracks. The Virginia Smart Road is a unique, state-of-the-art, full-scale, closed test-bed research facility managed by VTTI and owned and maintained by the Virginia Department of Transportation (VDOT). The Smart Road continues to play an important role in the overall success of the institute and its research endeavors. Transportation scientists and product developers have spent more than 20,000 hours conducting research on this high-tech highway since its opening. The Virginia Smart Road is now an FAA testing approved facility for flight.



Closing Remarks

- Jon Antin, Research Program Manager, Center for Advanced Transportation Mobility, VTTI

Below from left: Teresa McRae, Jacob Smith, Juwan Byrd, Kayla Underwood, Malik Norwood, Marvin Edge, Joseph Smith, and Carletta Cudley



N.C. A&T was represented at the Symposium by the following students: Marvin Edge, Juwan Byrd, Malik Norwood, Kayla Curry, Jacob Smith, Joseph Smith, Devi Chilukuri, Cynthia Glass, Theanna Drennon, Miriam Alabi, Justice Darko, Karreem Hogan, David Richmond, Sai Charan Dekkata, and Larkin Folsom.

