Semi-Annual Progress Report for

University Transportation Centers

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Accomplishments

1.1 What are the major goals of the program?

Our New England University Transportation Center (NEUTC) mission is to advance transportation safety through transformational research, education, and technology transfer. Our focus is upon translating research into implementation as we work to save lives today, while delivering research that transforms safety in the presence of evolving technology and opportunity. The passage of the Infrastructure Investment and Jobs Act (IIJA) and the development of the National Roadway Safety Strategy (NRSS), coupled with a more mainstream introduction of safety culture (e.g., Safe System) provide a foundation for improved safety across the surface transportation system. The time to make a generational impact in transportation safety is now.

NEUTC promises to advance transportation expertise and technology throughout the transportation discipline and contribute towards workforce development through the delivery of a robust research, education, and technology transfer agenda in support of IIJA statutory research priority of *Promoting Safety* along with the US DOT Strategic Plan Goals of *Transformational Research*. NEUTC brings together research and education leaders with a proven track record of delivering cutting-edge research to address key challenges in transportation safety. NEUTC will support the US DOT's mission to improve transportation safety.

1.1.1 Research

Traditional safety challenges—such as the safety of vulnerable users, driver behavior, infrastructure assessment, and rural safety—are both complicated and potentially improved by the emergence of advanced technologies including automated vehicles, smart infrastructure, and human-machine interactions (HMIs), as well as the varying needs across different regions and communities served by our transportation systems. This has created broad needs for educational and research breakthroughs and innovation across the safety spectrum. NEUTC's research addresses critical safety challenges and advances several of US DOT's Strategic Plan KPIs through the application of transformative technologies. To achieve impactful research and effective safety measures, focus is required on specific topic areas that either: a) provide the greatest potential for safety related improvements, and/or b) require additional attention due to the significance of crash-related outcomes. Our mission to advance safety through transformative research will cover four thematic priority areas:

1) Embedding Community Engagement within Transportation Safety
2) Developing Smart Infrastructure and Connected Systems
3) Improving Safety for all Modes and Populations
4) Promoting Automated Vehicle Safety

These topic areas address integral components of the transportation system, contributing to a safe transportation system for all.

1.1.2 Leadership Development

The members of our consortium are leaders within the transportation profession, and we are excited about the opportunity to expand our leadership role as we work to advance transportation safety in a transformative fashion. Developing the next generation of leaders in transportation is a core function of NEUTC. As leaders we expect NEUTC to be at the forefront in advancing US DOT's KPIs. Our plan is to mix new ideas with established best practices, such as an annual multi-day symposium that will bring faculty,

students, stakeholders, vendors, and practitioners together to discuss innovations in safety research. These symposia will include activities to support collaboration, foster networking, and develop leadership skills for both researchers and students. An added focus will be placed upon increasing participation from government and industry by ensuring invitations are extended to all collaborators on all NEUTC projects. Given our prioritization on leadership, we will continuously seek opportunities for our consortium members.

1.1.3 Education and Workforce Development

The education and workforce development components will address K-12, university, and continuing education students. We are excited about the wide range of education activities within NEUTC which will expand our transportation knowledge base and broaden participation in transportation. Some of the specifical education and workforce development goals include the creation or expansion of the following activities:

The Safety Toolbox Curriculum: This initiative aims to develop and deliver educational materials focused on basic transportation safety concepts. The Safety Toolbox will feature a regional agenda including webinars, workshops, and outreach programs, targeting high school to undergraduate students and transportation professionals. It will also engage researchers, policymakers, and system operators.

Community College Pipeline: In collaboration with community college partners BHCC and HCC, this program will offer strategic educational activities such as the development of an introductory transportation course with transfer credit potential, a research and mentoring program (RAMP), visiting research and internship opportunities, and programming to address "the hidden curriculum" to help eliminate barriers to student success.

Expand Bridging Expectations & High School Course: This initiative builds upon a successful two-day pilot program designed to introduce high school students to careers and topics in transportation. The next phase involves developing a full-year elective course in collaboration with Springfield Public Schools. The course will cover fundamental transportation concepts, real-world applications, and career pathways, with the goal of offering dual enrollment credit through a partnering community college. As the curriculum is finalized and piloted, NEUTC plans to expand the program to additional schools across the consortium.

Hack-a-thons & Capstones: This effort includes hosting hack-a-thon style events where student teams from various academic backgrounds collaborate to solve transportation safety challenges—such as using data from smart infrastructure to improve decision-making. It also supports student involvement in capstone projects that align with their academic programs, providing hands-on experience in applying research concepts to real-world transportation issues.

Develop College Curriculum: NEUTC members aim to expand the presence of transportation safety topics in college curricula and enhance their quality. This includes creating case studies and curriculum modules for engineering courses—especially at the first-year level—to encourage interest in transportation fields. Additional plans involve incorporating subject matter expertise into existing courses, developing a general education module on the broader impacts of traffic safety, and supporting the creation of new courses and certificate programs.

Outreach to K-12: The consortium members will continue supporting K-12 STEM and career exploration activities, such as tours, internships, and presentations, along with sharing successful outreach practices

across New England. Additionally, student contributions will be recognized through awards and features at annual symposia and on the NEUTC website.

1.1.4 Technology Transfer

One of the primary functions of the UTC program is to directly translate research into practice, policy, or novel advancements of the state-of-the-practice. Technology transfer and collaboration is well-documented historical strength across the entire NEUTC team. We are particularly excited about the seven-part technology transfer plan that we have developed to complement our research and education activities. Our consortium members are actively engaged in innovative technology transfer that is blend of both traditional (e.g., LTAP workshops, industry engagement, conference participation, etc.) and less traditional (e.g., DECIDE©, NSF I-Corp, public information videos, etc.) methods. Our focus in technology transfer will be translating research and best practices into implementation, especially in our rural communities across New England. Each member of our consortium will contribute towards- and participate within- our technology transfer and collaboration activities.

1.2 What was accomplished under these goals?

1.2.1 Research

The New England University Transportation Center (NEUTC) is entering our third year of what has been an extremely productive consortium, dedicated to advancing transportation safety and efficiency through impactful research and community engagement. During this reporting period we began completing year 1 research projects and solicited proposals for year 3 projects to expand our efforts in research, technology transfer, and education. Additionally, early in the next reporting period we will award our year 3 projects and begin allocating Year 3 funds.

Funded Projects

During this period, the NEUTC successfully managed an extensive portfolio of projects, comprising:

Year one projects: 18 research projects, 2 projects focused on Technology Transfer, 1 project dedicated to Outreach and Education. Of these projects, seven have been completed with final reports submitted, which can be viewed on our website.

Year two projects: 5 phase two projects and 14 new research projects are ongoing.

Year three projects: 40 proposals were submitted and reviewed by our PIs and advisory board. From these, 21 were selected for funding and will begin during the next reporting period.

Peer Reviewed Journal Publications/Conference Papers

NEUTC researchers produced 18 peer-reviewed journal articles and conference papers during the reporting period, advancing knowledge in connected and automated vehicle safety, crash behavior modeling, active transportation, and mobility systems. Highlights include publications in *Transportation Research Record*, *Journal of Safety Research*, *International Journal of Sustainable Transportation*, and IEEE venues such as *Robotics and Automation Letters* and *IROS*. Representative topics ranged from uncertainty quantification and collaborative perception for autonomous vehicles to pedestrian safety analytics and seatbelt use promotion on motorcoaches. NEUTC investigators also presented multiple papers at the TRB Annual Meeting and other national and international conferences, demonstrating the

Center's continued leadership in data-driven transportation safety research across partner institutions.

Research-Related Engagements

NEUTC researchers actively engaged transportation professionals, policymakers, and the public through invited talks, conferences, and media features showcasing real-world safety applications. Key highlights include:

- **Fei Miao (UConn)**: Invited seminar at Johns Hopkins University on multi-agent learning for autonomous vehicles.
- **Eleni Christofa (UMass)**: Featured in *UMass News* for data-driven bicycle infrastructure and safety analytics.
- **Moses Tefe & William Lyons (Norwich)**: Presented *Mobility and Safety Needs Assessment* findings at the Vermont AOT Research Symposium.
- **Jinbo Bi & Daniel Baker (UConn)**: Released project site on explainable AI for autonomous vehicles; presented at the MassDOT Innovation Conference and NEUTC Symposium.
- **Michael Plotnikov (UMass)**: Highlighted in *The Boston Globe* for research on motorcoach seatbelt safety.
- **Anuj Pradhan (UConn)**: Provided national media commentary on teen driver safety and risk reduction.
- **Bryan Reimer (MIT)**: Led national discussions on driver behavior and automation through MIT AVT Consortium, Toyota CSRC, and related media appearances.
- **Eric Jackson (UConn)**: Frequent source for Connecticut media on roadway safety and enforcement policy.

External Grants

NEUTC consortium members secured new external funding that extends the impact of Center-supported research and education initiatives:

- National Science Foundation (NSF):
    - Renewal of REU Site: RIDE – Research for Undergraduates in Transportation Engineering (PI S. Roberts, Co-PI E. Christofa), supporting hands-on undergraduate research in transportation safety and system design.
- Connecticut Department of Transportation (CTDOT):
    - F. Fakhrmoosavi awarded funding for *Advancing Microtransit Efficiency*, developing tools to optimize demand-responsive transit services statewide.
- Institute for Collaboration on Health, Intervention, and Policy (InCHIP):
    - D. Chacón-Hurtado received a seed grant for *Enhancing Social Engagement: A Framework for Rights-Based Innovation in Aging*, connecting mobility access to quality-of-life outcomes for older adults.

These awards demonstrate NEUTC's continued success in leveraging its research to attract external

support for applied transportation safety and workforce development initiatives.

Invited Research Presentations

NEUTC faculty, researchers, and students shared their work at major national and international venues, advancing research in safety, automation, infrastructure, and mobility:

- **Fei Miao (UConn):** Keynote speaker at IROS 2025; invited seminars at Johns Hopkins and Yale on collaborative perception and autonomous vehicle coordination.
- **Eleni Christofa (UMass):** Invited talks on multimodal infrastructure design and signal control optimization at WTS and IEEE conferences.
- **Moses Tefe, William Lyons & Michael Cross (Norwich):** Presented *Mobility and Safety Needs Assessment* findings at the Vermont AOT Research Symposium.
- **Jinbo Bi & Daniel Baker (UConn):** Presented explainable AI for autonomous vehicles at the MassDOT Innovation Conference and NEUTC Symposium.
- **Michael Plotnikov (UMass):** Presented research on motorcoach seatbelt and passenger safety at multiple regional events.
- **Egemen Okte (UMass):** Presented on AI-based pavement condition prediction at the MassDOT AI Peer Exchange.
- **John Ivan & Quinn Packer (UConn):** Shared intersection safety research using GRIDSMART data at the NEUTC Symposium.
- **Anuj Pradhan (UConn):** Led symposium session on driver trust and human–machine interaction.
- **Davis Chacón-Hurtado (UConn):** Moderated ethics and engineering education panel at IEEE ETHICS-2025.
- **Bryan Reimer (MIT):** Delivered international presentations on driver attention, multimodal interfaces, and automation at Tongji University, U.S.–Sweden Symposium, and industry briefings.
- **Jimi Oke (UMass):** Presented multimodal crash typology analysis at INFORMS 2025.
- **Song Gao (UMass):** Presented ride-sourcing demand and supply modeling at the Vermont AOT Symposium.

1.2.2 Leadership Development

The New England University Transportation Center (NEUTC) has demonstrated robust leadership in the transportation field, highlighted by a series of invited presentations, prestigious awards, and significant editorial responsibilities held by its faculty and students. This active involvement not only promotes NEUTC's visibility in the academic and professional communities but also enhances its impact on transportation policies and practices.

Invited Presentations and Workshops

NEUTC members presented and facilitated sessions that broadened the Center’s national visibility in workforce development, ethics, and roadway safety:

- **Davis Chacón-Hurtado (UConn):** Presented *Engineering and Human Rights* at the ASEE Annual Conference, highlighting ethical perspectives in infrastructure design.
- **Krista Reichert & Suman Mukherjee (BHCC):** Participated in the STEM Leadership Workshop, supporting student engagement and workforce development.
- **Ali Shirazi (UMaine):** Presented research on centerline rumble strips and rural roadway safety at the Safe Oklahoma Summit.

Professional and Paper Awards

- **Fei Miao (UConn)**: Received Best Paper Award at the IJCAI 2024 AI4TS Workshop; nominated for the Alan T. Waterman Award.
- **Eleni Christofa (UMass)**: Mentored student Efthymia Kostopoulou, recipient of the WTS–Rhode Island Graduate Scholarship and Runner-Up Poster Winner at the UMass Engineering Research Symposium.
- **Anuj Pradhan (UMass)**: Co-author of Best Poster Award at the Safe Mobility Conference (2025).
- **Jinbo Bi (UConn)**: Mentored Daniel Baker, recipient of the Sarah Levitan Larie Fellowship for contributions to explainable AI in autonomous vehicles.
- **Davis Chacón-Hurtado (UConn)**: Honored with the ASCE ExCEEd New Faculty Excellence in Teaching Award (2025).

Journal Editorships and Grant Review Panels

NEUTC researchers continued to provide national leadership through editorial and peer-review roles across major journals and funding programs:

- Federal & National Review Panels:
  - NSF Cyber-Physical Systems (Fei Miao, Monika Filipovska)
  - NIH research panels (Jinbo Bi)
- Editorial Boards & Associate Editors:
  - *IEEE Robotics and Automation Letters*, *IEEE Open Journal of Control Systems* (Fei Miao)
  - *Transportation Research Record*, *ASCE Journal of Transportation Engineering A*, *Transportation Research Part C* (Eleni Christofa, Anuj Pradhan)
  - *Accident Analysis & Prevention* (John Ivan)
  - *Transportation Research Part B* (Song Gao)
  - *International Journal of Pavement Engineering* (Egemen Okte)
  - *Transportation Research Part D* special issue on digital twins (Fatemeh Fakhrmoosavi)
  - *Ergonomics* (Shannon Roberts)
  - *Applied Sciences* special issue on ITS (Nicholas Lownes)
- Conference & Program Committees:
  - AAAI, ICML, NeurIPS, and related AI venues (Jinbo Bi)

Leadership in Professional Organizations

NEUTC faculty hold key leadership roles shaping national and international research directions in safety, automation, and infrastructure:

- **Michael Knodler (UMass)**: Vice President, Council of University Transportation Centers; President, Research & Education Division, ARTBA.
- **Fei Miao (UConn)**: Organizer, ACM/IEEE CPS Week 2025; Program Co-Chair, DARS 2024.
- **Eleni Christofa (UMass)**: Member, TRB Traffic Flow Theory Committee; Paper Review Coordinator, TRB Annual Meeting.
- **Egemen Okte (UMass)**: Treasurer, Academy of Pavement Science & Engineering; Member, ASCE T&DI AI and Pavement Committees.
- **Anuj Pradhan (UMass)**: Chair, Workshops Committee for AAAFTS Safe Mobility Conference; Vice-Chair, AAAM Student Subcommittee.
- **Davis Chacón-Hurtado (UConn)**: Program Committee Member, IEEE ETHICS-2025; ASEE Ethics Division Delegate.
- J**essica Boakye (UMass)**: Vice-Chair, Justice & Risk Group, Society for Risk Analysis.
- **Shannon Roberts (UMass)**: Executive Council Member, Human Factors & Ergonomics Society.
- **Nicholas Kirsch (UNH)**: Vice President of Finance, IEEE Vehicular Technology Society.

- **William Lyons (Norwich)**: Co-Chair, Urban Land Institute Boston Resiliency Committee; Editorial Board Member, BSCES Civil Engineering Practice Journal.

Student Leadership Activities

NEUTC continues to promote student leadership through mentoring, research participation, and centerwide events such as the annual Leadership Summit and Symposium, which engaged more than 250 participants across consortium institutions.

- **University of New Hampshire:** Five students mentored by Nicholas Kirsch participated in research on connected systems and data-driven safety analysis.
- **University of Connecticut:** Students under Fei Miao, Jinbo Bi, and John Ivan advanced projects in autonomous vehicle safety, explainable AI, and intersection crash prediction.
- **UMass Amherst:** Faculty including Eleni Christofa, Michael Plotnikov, Egemen Okte, Monika Filipovska, Anuj Pradhan, Song Gao, and Jimi Oke mentored over a dozen students contributing to projects on multimodal safety, bus operations, and AI-based pavement assessment.
- **Norwich University:** William Lyons and Moses Tefe hosted the 2025 NEUTC Leadership Summit and Symposium, facilitating student presentations and outreach.

1.2.3 Education and Workforce Development

We have made significant strides in education and workforce development, with a focus on integrating advanced educational programs and providing students with meaningful opportunities to develop academic and professional skills in transportation-related fields.

Hack-a-thon and Capstone Participants

NEUTC supported student engagement through structured, project-based learning experiences during this reporting period, providing opportunities for hands-on application of classroom concepts to real-world transportation challenges.

Norwich University:
12 participated in a *Criminal Justice Capstone* focused on transportation-related topics, exploring issues such as roadway safety, enforcement strategies, and mobility planning in Vermont communities.

University of Connecticut:
16 students engaged in *Senior Design Projects* centered on transportation systems, infrastructure, and safety analysis. These projects emphasized data-informed planning, system design, and innovation within the transportation sector.

NEUTC Peer Mentors and Mentees

NEUTC expanded its mentorship network connecting faculty, graduate, and undergraduate students across consortium institutions:

- **UConn:** Graduate student Daniel Baker (Jinbo Bi's group) mentored three undergraduates on explainable AI projects. Davis Chacón-Hurtado guided seven students through peer-mentoring initiatives on pedestrian infrastructure and transportation safety.
- **UMass Amherst:** Eleni Christofa mentored Anuj Pradhan through collaboration on multimodal safety research.

- **Norwich University:** Moses Tefe mentored three students in applied projects for the Mobility and Safety Needs Assessment initiative.
- **University of New Hampshire:** Nicholas Kirsch supported three students in connected vehicle and systems engineering research.
- **Bunker Hill Community College:** Beth Breton mentored four students, emphasizing pathways for engineering and design students.

Summer/Winter NEUTC Research Fellows

During this reporting period, NEUTC supported a limited number of summer research experiences across partner institutions, emphasizing undergraduate participation and applied learning in transportation-related fields.

University of Massachusetts Amherst:
Through the *RIDE Research Experiences for Undergraduates (REU)* program, *Eleni Christofa* mentored two undergraduate students — *Christopher Fondakowski* (Holyoke Community College) and *Haily Garcia* (Foothill College) — on research focused on food access and bicycle infrastructure. She also co-mentored two additional participants, *Andrew Ruger* (Grinnell College) and *Akua Owusu* (University of Connecticut), on projects related to bicycle mapping and transportation infrastructure resilience.

Norwich University:
Moses Tefe supervised *Gavin Newton*, who contributed to research on electric vehicle technologies as part of a summer applied learning experience.

No additional NEUTC-supported summer or winter research fellows were reported during this period. However, planning is underway for the next *RIDE REU* cycle at UMass Amherst, which will again be supported by the National Science Foundation with supplemental funding from NEUTC. The upcoming program will expand partnerships with *Holyoke Community College* and other regional institutions, broadening research and mentoring opportunities for students across New England.

Students Supported by NEUTC Projects

NEUTC has provided direct research support to **35 Ph.D. students**, **20 undergraduate students**, and **1 master's student** during this reporting period. These students have contributed to projects advancing transportation safety, intelligent systems, crash modeling, public transit planning, and human factors in vehicle automation.

New Courses and Modules

NEUTC faculty incorporated research outcomes into new and existing courses, expanding transportation and systems education across consortium institutions:

- UConn:
    - *Fei Miao* added autonomous driving case studies to *Introduction to Machine Learning*.
    - *Davis Chacón-Hurtado* created case studies on infrastructure and crime for *Engineering for Human Rights*.
    - *Jinbo Bi* and *Daniel Baker* developed a lecture on explainable AI for first-year engineering students.

- UMass Amherst:
    - *Eleni Christofa* introduced a *Pedestrian Level of Traffic Stress* module in *Pedestrians and Bicyclists*.
    - *Egemen Okte* developing a module on pavement distress detection for *Pavement Design*.
    - *Song Gao* created a *Ride-Sourcing* module for *Transportation Economics*.
- BHCC:
    - *Krista Reichert* launched a *Geospatial Technology Certificate Program* and integrated NEUTC materials into nine courses.
- Norwich University:
    - *Moses Tefe* supported a *Senior Capstone* module on vehicle quality and traffic stops.

K-12 Student Engagement

- **World is our Classroom**: Hosted approximately 120 students from the Springfield-area public high schools over the course of eight days at UMass' Aviation Research and Training facility adjacent to the Westover Air Reserve Base. These visits provided insights into aviation careers, airport management, and air traffic control. The day concluded with a visit to Union Station in Springfield where the students were exposed to career options within public transportation.
- *Jinbo Bi* organized an **AI Summer Camp** for students in grades 8-10 (July 28-August 1, 2025). The camp focused on artificial intelligence fundamentals and ethical considerations in autonomous vehicles. Graduate student *Daniel Baker* served as a lead instructor, guiding participants through activities related to machine learning and automated decision-making.
- *Moses Tefe* led a **week-long residential Governor's Institute**, which brought together approximately **70 K-12 students** at Norwich University in Summer 2025. Participants explored topics in electric vehicles, mobility systems, and transportation safety through a combination of lectures, design exercises, and field demonstrations.

1.2.4 Technology Transfer

We are continually engaging in technology transfer activities, ensuring that the research findings and innovations are communicated effectively to stakeholders within the industry, government, and the general public. This engagement enhances the application of research outputs in practical settings and contributes to broader societal impacts.

NEUTC-Related Events and Attendance

NEUTC consortium members organized and participated in multiple events during this reporting period, engaging students, researchers, and professionals across New England in discussions on safety, technology, and infrastructure innovation.

Cyber-Informed Engineering Workshop
Hosted jointly by *Norwich University's Center for Global Resilience and Security (CGRS)*, *NUARI*, and *UMass Amherst's University Transportation Center*, this workshop was held at Westover Air Reserve Base in Chicopee, MA, on March 26, 2025. The event, coordinated by *William Lyons*, *Moses Tefe*, and *Michael Cross*, drew more than 40 attendees. Sessions focused on identifying cybersecurity threats to transportation infrastructure—including bridges, tolling systems, and traffic control networks—and

introduced principles of *Cyber-Informed Engineering (CIE)* as a proactive strategy for resilience and safety.

NEUTC Leadership Summit and Annual Symposium
Held May 19–20, 2025, at Norwich University in Northfield, VT, the *2nd Annual New England University Transportation Center Symposium* and accompanying *Leadership Summit* brought together more than 50 participants, including faculty, students, and agency representatives. Presentations covered a wide range of NEUTC-funded research topics, from infrastructure safety to automation and mobility systems. *Eleni Christofa*, *Michael Plotnikov*, *Haimanti Bala*, and *Daniel Baker* presented project updates, while sessions and networking events promoted student leadership development and regional collaboration.

Connecting Communities Workshop
Hosted by *Andrea d'Amato* at UMass Amherst, this event focused on community-driven approaches to transportation planning and research outreach. Attendees included researchers, planners, and representatives from *MassDOT* and local organizations, engaging in sessions on participatory methods, engagement strategies, and real-world applications of community-centered transportation design.

NEUTC Webinar Series
Two webinars were delivered as part of NEUTC's continuing education and dissemination efforts. The first highlighted the completed project *"The Context of Crash Occurrence: A Complexity-Infused Approach"*, while the second provided an overview of Year 2 research initiatives. Combined attendance exceeded 100 participants, with strong engagement from both academic and agency audiences.

BHCC STEM Academy and UMass Site Visit
Krista Reichert coordinated multiple outreach and career development activities through the *BHCC STEM Summer Academy*. Highlights included a *site visit to UMass Amherst* attended by 15 students and faculty, interactive sessions with NEUTC researchers, and workshops promoting pathways into transportation and geospatial technology careers.

LTAP Engagements

From April 1 to September 30, 2025, Baystate Roads (based out of UMass) delivered 37 safety-focused classes across the state, reflecting the consistently high demand for safety training among public works teams. These sessions strengthened participants' operational safety knowledge and technical proficiency in varied work environments. Core offerings included "Work Zone Safety," "OSHA 10-Hour Construction," "Chainsaw Safety and Storm Damage Awareness," "Welding Equipment Safety & Operation," "Bucket Truck Operation & Safety," and "Flagger/First Aid Certification," along with the two-day "Chainsaw Skills and Safety" course. A newly introduced topic for FFY25 provided a deeper focus on the unique safety challenges faced by public works employees. If indirectly safety-related classes—such as "MUTCD and Pavement Markings," "Creating Accessible Communities," "Grader Operator," and "Backhoe/Excavator Operator Training"—are included, the total number of courses rises to 50, representing 58% of all classes offered during this period. This robust training program highlights our commitment to promoting safe, compliant, and well-prepared public works operations statewide.

The UConn T2 Center remained highly active through a range of LTAP and transportation training activities. Highlights included in-person workshops such as *Traffic Signal Inspector Training* for CTDOT,

Planning Complete Streets, *All About Asphalt*, *Green Snow Pro for Roadways*, and multiple *Road Master Program* sessions. The Center also launched the 10th cohort of the *Connecticut Transportation Leadership Program* and hosted the *FHWA Proven Safety Countermeasures Workshop.* Virtual programming included webinars such as *Adaptive Signals: Where Are We Now in Connecticut?*, *Sustainable CT's Coffee Hour*, and *Safety Matters: Working Toward ADA Compliance.* Staff also participated in the *Northeast NLTAPA Regional Meeting* in Princeton, NJ. Through these efforts and continued distribution of the *CT Crossroads* e-newsletter, the T2 Center continues to promote technical excellence, leadership, and safety across Connecticut's local and state transportation agencies.

Media Requests

NEUTC researchers were featured in over 35 news stories and interviews across regional and national outlets, sharing insights on transportation safety, automation, and infrastructure innovation.

- UConn / Connecticut Transportation Institute: Provided data and commentary to major Connecticut outlets on topics such as e-bike crashes, speed enforcement, and wrong-way driving prevention.
- UMass Amherst:
    - *Michael Plotnikov* featured in *The Boston Globe* for motorcoach seatbelt research.
    - *Anuj Pradhan* contributed expert commentary to *Newsweek* on teen driver behavior.
    - *Francis Tainter* showcased aviation safety training for *CBS News*.
- UConn Faculty:
    - *Fei Miao*'s autonomous vehicle research highlighted by *Johns Hopkins University Newsletter* and NEUTC communications.
- MIT / Industry Collaborations:
    - *Bryan Reimer* featured in *Wired*, *Forbes*, and *MIT News* on automation ethics and driver safety.

These features expanded NEUTC's national visibility and public impact, strengthening awareness of its research contributions to safer, smarter transportation systems.

Industry and Governmental Stakeholders Requests for Technical Assistance

During this reporting period, NEUTC researchers were frequently called upon to provide technical guidance and subject-matter expertise to government agencies, legislators, and industry organizations. These collaborations reflect the Center's role in translating research into practice and supporting informed policy and operational decision-making.

- *Michael Plotnikov* and his research collaborators (*Charles and Anne Schewe* and *John Collura*) provided testimony before the *Massachusetts House and Senate* in June 2025 regarding *seatbelt use on motorcoaches*. Their contributions helped inform a proposed amendment to the Massachusetts seatbelt law aimed at expanding coverage to include motorcoach passengers.
- *Moses Tefe* supported requests from *Massachusetts government and industry partners* for *Cyber-Informed Engineering (CIE)* training, providing technical insight into cybersecurity risk mitigation for transportation systems.
- *Bryan Reimer* continued to advise national policy discussions through his appointment to the *Federal Aviation Administration's Task Force on Human Factors in Aviation Safety Aviation Rulemaking Committee (HF Task Force ARC)*, contributing expertise on driver behavior, automation safety, and human–machine interface design.

- *William Lyons* engaged in consultations with *MassDOT* and industry partners on integrating *Cyber-Informed Engineering principles* into infrastructure resilience planning, drawing on lessons learned from NEUTC-supported workshops.
- *Eleni Christofa* and *Nicholas Kirsch* continued technical exchanges with *FHWA* and multiple state DOTs on research applications involving connected vehicle systems, traffic operations, and data-driven safety analytics.

Collectively, these technical assistance efforts demonstrate NEUTC's active engagement with agencies and industry stakeholders, ensuring that research findings directly inform policy, technology deployment, and workforce training across the transportation sector.

Social Media Engagements

NEUTC researchers and consortium institutions actively used professional and institutional platforms throughout the reporting period to share research highlights, announce events, and showcase ongoing transportation safety initiatives.

NEUTC Platforms:
The NEUTC LinkedIn page continued to grow steadily, expanding its professional audience from 140 to over 216 followers, and has garnered over 11,000 organic impressions in 2025 so far. Posts featuring project updates, workshop announcements, and researcher spotlights have helped foster engagement across the regional transportation community; by connecting more of the transportation industry with the public and other organizations, NEUTC continues to build its industry and community awareness in the better establishment of a fleshed-out brand in itself.
In addition, NEUTC launched its YouTube channel, which now serves as a repository for recorded webinars and presentations, improving public accessibility to research outcomes and professional development content.

Highlighted Researcher Engagements:

- *Shannon Roberts* shared NEUTC-supported research on roadway complexity and crash analysis via LinkedIn.
- *Fei Miao* shared her work on collaborative perception for connected and automated vehicles, presented at UConn, through a LinkedIn post.
- *Eleni Christofa* promoted survey participation related to bicycle infrastructure research via LinkedIn.
- *Monika Filipovska*'s transportation resilience research was featured in *UConn Today* and amplified through LinkedIn.
- *Moses Tefe* and *William Lyons* contributed to extensive outreach through *Norwich University*'s academic and NEUTC-affiliated LinkedIn posts highlighting Cyber-Informed Engineering and leadership training events.
- *Michael Plotnikov*'s research on motorcoach seatbelt safety was covered by *UMass Media Relations* and *The Boston Globe*, expanding the public reach of his team's findings.

Practitioner Attendance at Events

NEUTC-hosted and affiliated events during this reporting period drew strong participation from transportation practitioners, including representatives from state departments of transportation, municipal agencies, consulting firms, and industry partners. In addition to the aforementioned NEUTC events, UMass also helped host the MassDOT Innovation Conference, a two day conference in Worcester, MA which attracted 1,500 practitioners from around the region.

DOT Requests for Presentations or Proposals

During this reporting period, NEUTC researchers were invited to share findings and ongoing research with state departments of transportation, reflecting growing interest in the Center's applied research efforts.

- **Moses Tefe (Norwich University):** Along with William Lyons and Michael Cross, presented preliminary results from the *Mobility and Safety Needs Assessment* project at the **Vermont Agency of Transportation Research Symposium**, engaging state officials and practitioners in discussions on transportation safety and infrastructure planning.
- **Egemen Okte (UMass):** Presented at the **MassDOT AI Peer Exchange**, showcasing research on the use of **artificial intelligence and machine learning for pavement condition prediction and assessment**, supporting MassDOT's efforts to incorporate advanced analytics into asset management and maintenance planning.

1.3 How have the results been disseminated?

As the NEUTC research, technology transfer and education projects progress, we anticipate increased opportunities to disseminate the results of our activities.

1.4 What do you plan to do during the next reporting period to accomplish the goals?

During the next reporting period we have planned several NEUTC activities that will directly support goal accomplishment. Such activities include helping to host Moving Together, a large event focused on non-motorist safety, planning our next research symposium, and additional smaller events that bring our consortium members together.

NEUTC will also continue the expansion of our website, social media platforms, and webinar series to help with the dissemination of NEUTC news and activities. This dissemination becomes increasingly important as year one and year two research projects will continue being completed.

2 Participants and Collaborating Organizations

2.1 What organizations have been involved as partners?

Partner organizations within the current reporting period include the New England Department of Transportation. Most notably has been the continued integration of MassDOT and CTDOT to align priority projects with NEUTC activities. Additionally, NEUTC has actively partnered with MassDOT in the planning/hosting of the MassDOT Innovation Conference for which registered attendance of over 1600 participants from the public and private sectors, industry and academia.

World is our Classroom – a 501C3 has partnered with NEUTC to expand their Bridging Expectations program to include K-12 outreach related to transportation for public school students. We are now partnering with WioC and the Springfield Public Schools to plan for a high school level transportation elective course.

2.2 Have other collaborators or contacts been involved?

We have engaged with other collaborators both within the UTC Program and outside of the UTC Program.

3 Outputs

3.1 Publications/presentations/conference papers

Since its launch, the New England University Transportation Center (NEUTC) has seen a steady increase in research activity, resulting in a growing number of peer-reviewed publications, invited presentations, and conference contributions. During this reporting period, NEUTC researchers published papers in leading journals such as the *International Journal of Sustainable Transportation*, *Transportation Research Record*, and *Transportation Research Part F*. Faculty and students also presented at major national and international venues, including the TRB Annual Meeting, MassDOT Innovation Conference, and academic seminars hosted by institutions such as MIT, Yale, and Johns Hopkins.

3.2 Policy papers

None yet to report.

3.3 Website and other engagements

The NEUTC website, launched in mid-January 2024, continues to serve as a central hub for sharing consortium news, research updates, and event information. The site highlights ongoing projects across partner institutions and provides access to key reports, announcements, and educational opportunities. While analytics are not currently available, the website remains an active and growing resource for researchers, students, and transportation professionals seeking to engage with NEUTC activities and findings.

In addition to our website, we have bolstered our LinkedIn presence, increasing the page to 216 followers. During this reporting period the page has attracted 145 visitors from 54 unique users.

3.4 New methodologies, technologies or techniques

None yet to report.

3.5 Inventions, patents, and/or licenses

None yet to report.

3.6 Other Products

None yet to report.

4 Outcomes

As NEUTC-supported research projects mature, several have begun to yield meaningful outcomes that contribute to transportation safety, planning, and technology development.

Vehicle and Infrastructure Systems

- **Truck Permitting (UMass – Gerasimidis):** Data processing underway to support a framework for managing heavy loads and protecting infrastructure.
- **Pavement Monitoring (UMass – Okte):** Completed literature review on vehicle-sensor data for pavement distress; journal submission in progress.

- **Public Transportation Information Design (UConn – Lownes):** Developed and tested a model linking risk tolerance and route choice; scaling to larger networks.

Safety and Crash Analysis

- **Crash Typology (UMass – Oke):** Machine learning model on fatal crashes under journal revision; interactive dashboard published.
- **Pedestrian Crash Trends (UMaine/UConn – Shirazi):** Connecticut analysis complete; Maine data modeling underway.
- **Crash Forensics (UConn – Getty):** Final report submitted.

Automation and Human Factors

- **Collaborative Perception (UConn – Miao):** Released *MOT-CUP* framework improving tracking accuracy and reducing uncertainty in CAV systems.
- **Explainable AI (UConn – Bi):** Developed text-based AV decision explanations; public demo and manuscript in progress.
- **AV Trust and HMI Design (UMass – Pradhan):** Simulator and interface design finalized; IRB approval pending for data collection.

Active Mobility and Safety

- **Bicycle Infrastructure (UMass – Christofa):** Drone-based trajectory analysis advancing; results presented at regional conferences.
- **Older Drivers & FCW (UConn – Niloufar):** Study completed; TRB paper submitted.
- **Digital Twin for Safety (UMass – Boakye):** Field data from Holyoke and Northampton integrated into GIS-based model for local safety planning.

Transit and Shared Mobility

- **Mobility in Northfield, VT (Norwich – Tefe):** Surveys and focus groups completed; presented at VTrans Symposium.
- **SAV Integration (UConn – Fakhrmoosavi):** Statewide simulation assessing first/last-mile service using autonomous shuttles.
- **Ride-Sourcing Demand (UMass – Gao):** Developed tract-level model showing higher ride demand in areas with shorter commutes and greater transit use.

Education and Workforce Development

- **Community-Centered Traffic Safety (BHCC/UMass – Reichert):** 96 students completed transportation-themed courses; new Geospatial Technology Certificate launched.
- **HCC Innovation Challenge (BHCC – Breton):** Second annual event themed on transportation science to engage students in applied research.

Additional Highlights

- **Motorcoach Seatbelt Campaign (UMass – Plotnikov):** Ongoing work with operators and campus groups to improve seatbelt use.

- **GRIDSMART Crash Prediction (UConn/UMaine – Ivan):** Analysis near completion; TRB paper submitted.
- **Sensor Fusion for VRU Tracking (UNH – Kirsch):** Prototype network successfully tested; expansion planned in Year 3.

5 Impacts

5.1 Impact on the effectiveness of the transportation system

NEUTC's focus on understanding human interactions within a complex and dynamic transportation landscape is aimed at improving both safety and operational efficiency. Our research supports safer travel, better integration of multiple transportation modes, and strategies to reduce congestion—contributing to more reliable and effective transportation systems.

5.2 Impact on the adoption of new practices, or instances where research outcomes have led to the initiation of a start-up company

Nothing to report.

5.3 What is the impact on the body of scientific knowledge?

Highlighted in Section 1.2.1

5.4 What is the impact on transportation workforce development?

Highlighted in Section 1.2.3

6 Changes/problems

As we approach the midpoint of year two for NEUTC we are happy to report no specific changes needed or problems encountered.

6.1 Changes in approach and reasons for change

NEUTC is making all efforts to ensure that all activities, including research projects, workshops and educational activities are compliant with the recent series of Executive Orders related to transportation. An additional change is that the Site Director from Norwich University has changed from Bill Lyons to Dr. Moses Tefe.

6.2 Actual or anticipated problems or delays and actions or plans to resolve them

None to report

6.3 Changes that have a significant impact on expenditures

None to report

6.4 Significant changes in use or care of human subjects, vertebrate animals, and/or biohazards

None to report

6.5 Change of primary performance site location from that originally proposed

None to report.

7 Special Reporting Requirements

N/A