

UVM Transportation Research Center Strategic Plan 2018

The **UVM Transportation Research Center (TRC)** is one of CEMS' most well-funded interdisciplinary research centers with \$2 million in external research expenditures in 2016-2017. The TRC was established in 2006 by a USDOT UTC grant. It remains a 100% grant-funded research center originally housed in the Provost's Office and now under the College of Engineering and Mathematical Sciences. External grants at the TRC come from federal, state, and local transportation departments and other diverse agencies. The Vermont Agency of Transportation and the USDOT are key funders of TRC's work.

Mission: To advance more sustainable and resilient transportation systems in Vermont and beyond by conducting data-driven research, managing innovative outreach programs, and supporting UVM student education.

The TRC's research portfolio has evolved to focus on transportation planning as it relates to resilience, equity, and energy. The TRC is a hub for innovative and interdisciplinary research, education, and outreach on sustainable transportation involving stakeholders which include:

- Faculty at UVM and beyond
- Professional Staff Researchers
- Outreach Programs and Workforce Center Managers
- Graduate Students
- Undergraduate Students
- UVM Research Facilities including the Transportation Air Quality Lab (TAQLab) and the Spatial Analysis Lab (SAL)

5-Year Vision

- External to the TRC we seek:
 - a continued reputation as an honest broker and provider of transportation data for Vermont
 - recognition as a Center of innovative, interdisciplinary research at UVM
 - roles as a promoter of sustainable transportation locally, regionally, and nationally
 - to be a gathering place for the professional transportation community
- Within the TRC we seek:
 - a leadership team consisting of a faculty director, an associate director for research, and an associate director for outreach that champion TRC's needs on campus, relationships within Vermont, and partnerships nation-wide. The leadership team leverages coordination of different TRC activities, promotes TRC's products and leads proposal development for future work.
 - a robust staff team, large enough to flex for "quick response" projects adding complementary expertise to work efficiently and complement faculty and student roles.

- a growing portfolio of strong research and outreach programs, including state and national projects. We seek to increase the proportion of our work funded by multi-year grants.
- to serve as a hub of externally-funded programs that supports research at UVM
- student engagement at all levels and faculty involvement from multiple departments

How do we get there:

- As our grant portfolio grows, expand the number of research staff, faculty and students to 10+ undergraduates and 8+ graduate students per year. This specifically includes one or more new faculty members in transportation engineering, and one new research staff member
- As project funds grow, hire administrative support to complement CEMS services
- Host 4 seminars or programs per year (face-to-face or online webinars) for the UVM and external Vermont community
- Submit 10-12 proposals per year for external funding opportunities, and add 2-4 new multi-year proposals in the next 5 years
- Re-engage external advisers to advocate for the center and guide our search for larger funding opportunities
- Partner with the CEMS communication team to advance awareness of TRC's work and dissemination of our research results
- Increase the strategic reserve of discretionary funding to \$100k and maintain that minimum level.
- Broaden dissemination by publishing journal papers and presenting at conferences at double the average rate over 2013-2017 by 2020
- Pursue professional development for the staff team for technical skills and research dissemination.

We will continue to focus our contributions to:

- Bring robust data to:
 - Transportation, energy, & climate
 - EVs and AVs in Vermont
 - Safety
 - Transportation Workforce
- Advance increased use of:
 - Statewide model
 - Travel survey data
- Focus on:
 - System resiliency
 - Winter maintenance
 - Intercity travel
 - Vehicle & fuel technologies
- Rural electrification of transportation
- Maintain and grow our contributions to:
 - Workforce development
 - Education programming & curriculum
- Ensure UVM has transportation courses in:
 - Safety and design
 - Transportation system modeling
 - Tailpipe emissions and air quality
 - Transportation planning