Annual Report 2025

Michigan Technological University

Michigan Tech Transportation Institute

Zhanping You, Director

MISSION

The Michigan Tech Transportation Institute will provide the operating structure, resources, recognition, and leadership, in a collaborative environment, that supports research, education and outreach leading to sustainable solutions for transportation.

VISION

Partnering for the future of transportation.

FOCUS

The Michigan Tech Transportation Institute (MTTI) is a multidisciplinary affiliation of faculty and professional staff actively engaged in a wide range of transportation-related activities. MTTI has a singular charge; to leverage University resources for the purpose of increasing external funding of transportation-related activities including research, education, training, product development, outreach, and technology transfer to assist in development of transportation systems. To achieve this goal, MTTI provides an administrative structure and resources for programs, individuals, and initiatives. MTTI resources are necessarily distributed to support activities of the Institute.

SUMMARY OF FY25 HIGHLIGHTS

In May 2025, Michigan Department of Transportation (MDOT) Director Brad Wieferich visited Michigan Technological University (MTU) for the first time. During his visit, Director Wieferich toured several research labs and met with members of the Michigan Tech Transportation Institute to discuss ongoing and future collaborations in transportation research. A highlight of the director's visit was a large poster session showcasing a wide range of transportation research projects conducted by MTU faculty, staff, and students.

Additionally, MTTI organized an opportunity for member principal investigators to hold one-on-one meetings with MDOT project managers in their respective research fields to potentially increase our success ratio in obtaining funding from MDOT.

Over the past fiscal year, MTTI held two general membership meetings - one in November 2024 and another in February 2025. These meetings were open to all researchers across campus and served as a platform to share updates on MTTI's activities, research focus areas, and opportunities for collaboration. The sessions provided an overview of MTTI's structure and initiatives, while also encouraging participation from faculty and researchers outside the traditional transportation disciplines.

The Rail Transportation Program continues to promote rail education initiatives through its summer education programs, the Railroad Night event, and the Midwest Rail Conference.

Through its newsletter, MTTI updated members, campus faculty, and outside subscribers on research projects, faculty and student awards, and upcoming events. The director also continued

the monthly “Directors Message” which provided MTTI members with information about upcoming events and activities of the institute.

Over the past five years, MTTI has seen consistent growth in research spending. The expenditures in FY25 are the highest over the reporting period, resulting in increased revenue being available to our members.

GOVERNANCE STRUCTURE

MTTI is governed by a member elected Director and five-member Executive Committee. The Director is approved by the VPR Office and is responsible for the overall operation of the organization.

The Director is the main representative internally to the university and externally to other universities, state and federal agencies and private organizations. The Director is installed, renewed, or removed in accordance with procedures outlined in the MTTI By-Laws. The Director reports to the Vice President of Research.

The Executive Committee consists of five members elected by and from the Institute’s Principal and Affiliate Members. An elected term for an Executive Committee member is three (3) years and terms are staggered such that at least one (1) member is elected yearly. The Executive Committee also includes the MTTI Director serving as an ex officio (non-voting) member.

The Director and Executive Committee establish policies/procedures and recommend strategic financial decisions, including but not limited to an annual MTTI operating budget, project cost share commitments, staffing decisions to support the activities of the Institute, capital investments, and other strategic initiatives.

The MTTI fiscal year 2025 Executive Committee included Colin Brooks (MTRI) and Beth Veinott (CLS) as affiliate members. Principal members were Kuilin Zhang (CEGE), Zhanping You (CEGE) and Barbara Dai (CEGE). Pasi Lautala (CEGE) served as Director.

Elections for rotating members are held annually during the spring semester.

MEMBERSHIP

MTTI membership is open to all campus researchers. Members are divided into two groups: principal members and affiliate members. All others are invited to be friends of the institute.

Principal Members - Those eligible for membership who in the last three years have served as the Principal Investigator (PI) or Co-Principal Investigator (Co-PI) on one or more MTTI Activities that result in combined average IDC recovery greater than or equal to $5000/year over the three previous fiscal years.

Affiliate Members – Eligible PI or Co-PI (as defined previously) with successfully awarded project(s) that qualify as a MTTI Activity(-ies) but does not meet the combined minimum $5,000/year IDC rule over the three previous fiscal years. Additionally, one may qualify as an

Affiliate Member if he/she has submitted at least three proposals in the last three fiscal years through MTTI.

Friends of the Institute - All others who request to join MTTI as a friend.

A list of MTTI's FY25 members can be found in Appendix A.

MEMBERSHIP INVOLVEMENT AND CAPACITY BUILDING

MTTI hosts two general luncheon meetings each year for its members, providing updates on current and upcoming funding opportunities available to both members and other researchers across campus. These meetings are offered both via Zoom and in person to maximize participation. While the primary audience is current and prospective MTTI members, we view MTTI as an umbrella organization that promotes transportation and mobility research and collaboration across the entire campus. All MTTI events, visits, and activities are intended to encourage participation from researchers, regardless of their home department, institute, or center.

During fiscal year 25, MTTI also hosted the current director of MDOT in a luncheon open to all campus members. Accompanying him were Gregg Brunner, MDOT Chief Operations Officer and Chief Engineer, and Aaron Johnson, Region Engineer for the Superior Region. The itinerary included guided tours of key campus research facilities and one-on-one meetings with facility directors and research investigators. In addition, a research poster session showcased ongoing projects by MTTI and other transportation/mobility researchers on campus, providing an opportunity for Director Wieferich and his MDOT colleagues to engage directly with student and faculty researchers.

In addition to MTTI events, the Rail Transportation Program (RTP) hosts regular activities aimed at advancing rail transportation education and research on campus. In FY25, RTP held its traditional Railroad Night, continuing a long-standing tradition of connecting students with industry professionals. The RTP also supports the Railroad Engineering and Activities Club (REAC), including coordination of their monthly meetings featuring guest speakers from the rail industry. A rail alumni event is generally held annually during the AREMA conference as well, sponsored by the MTU RTP.

BUDGET OVERVIEW

FY25 BUDGET SUMMARY

The MTTI Director and Executive Board set an annual budget for IRAD expenditures to support members. The proposed and actual budgets for FY25 are shown below.

Budget FY25	Proposed	Actual
Faculty Summer (Director)	$10,000	
Other - Pam Hannon	$45,000	$43,444
Other Technical Staff	$6,000	$148
Fringe Benefits	$20,400	$16,739
Equipment		
Travel/Meals	$10,000	$7,416
Supplies	$4,000	$2,009
Services (Fees) - MnDOT	$2,000	$4,086
Other - Education	$2,000	
	$99,400	**$73,844**

IRAD

The Institutional Research and Development (IRAD) funds allocated to MTTI by the Vice President for Research Office have primarily been used to support staff wages for proposal development, a long-standing strength of the institute. Most home departments of our research faculty do not have dedicated personnel for this function, making MTTI's support especially valuable to researchers.

In the past fiscal year, MTTI facilitated the submission of 55 research proposals by 15 principal investigators to various funding agencies, totaling $15,001,125 in requested funding.

MTTI continues to provide its members with proposal opportunities through MnDOT and MDOT by submitting the required application forms—annually for MnDOT and every five years for MDOT. Additionally, MTTI funds the annual $2,000 renewal fee for the master agreement with MnDOT, which is essential for members to be eligible to submit proposals to the Local Road Research Board (LRRB) program. The MTTI director is also the Principal Investigator for the contracts for the university.

General luncheon meetings are held twice per year for members, featuring updates on MTTI activities and, occasionally, informational guest speakers. Two meetings were held during in FY 25.

Travel initiative funding has been reinstituted after lower-than-average IRAD funding in previous years. Multiple MTTI researchers and/or their students attended conferences and workshops in FY25.

Cost share funding was awarded to three projects during the current fiscal year, provided in the form of staff support as well as PI and student travel. We anticipate additional cost share opportunities in the future as IRAD returns continue to grow.

An overall graph depicting MTTI membership funding is provided in Figure 1.

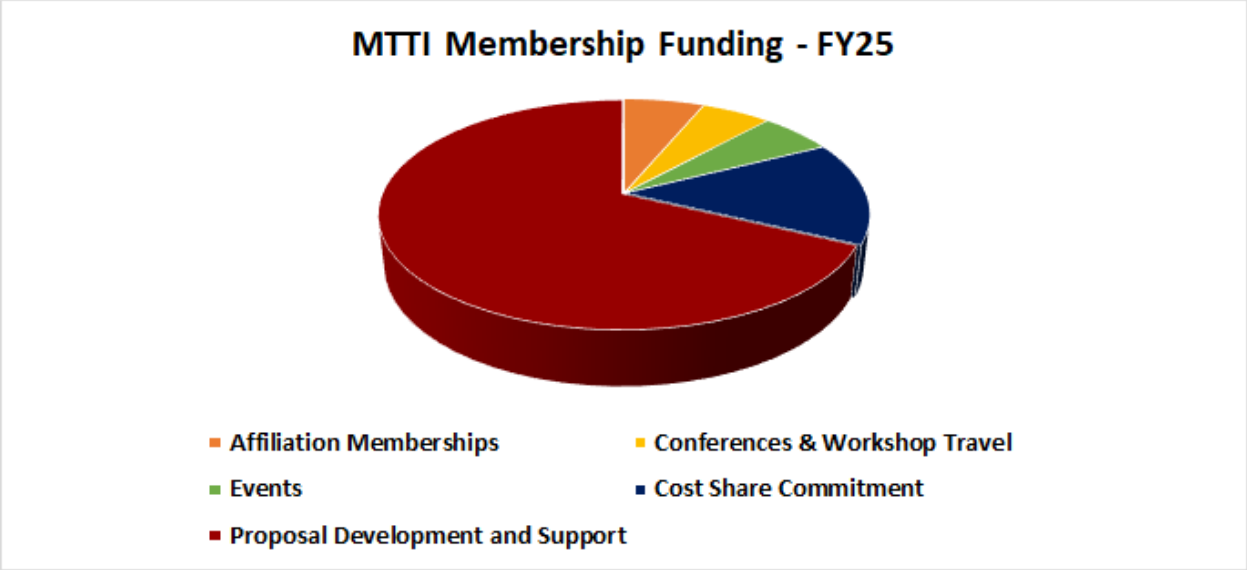
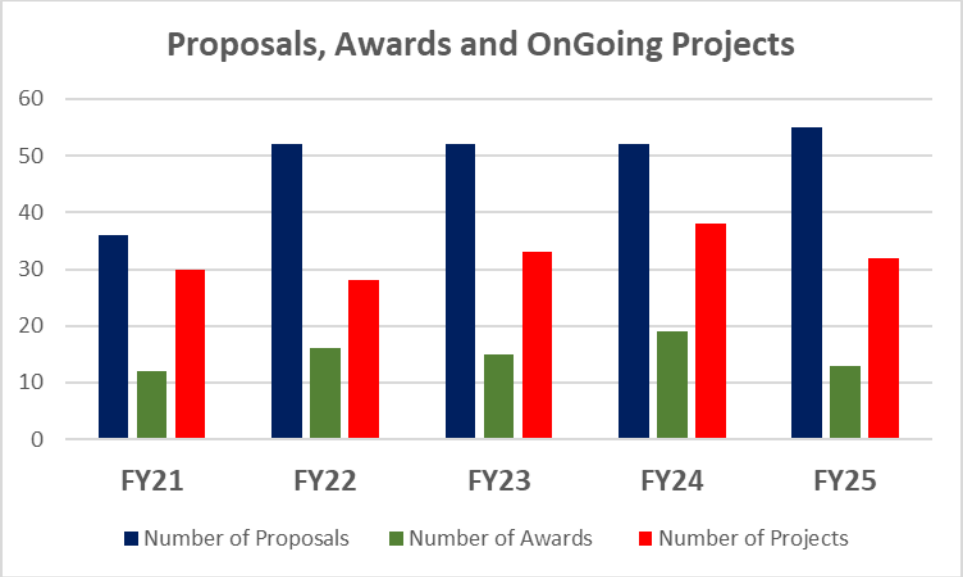


Figure 1: Membership Funding 2025

PROPOSALS, PROJECTS, AWARDS

In Fiscal Year 25, MTTI researchers submitted 55 proposals to 25 different sources requesting a total of $15,001,125. 13 projects were awarded for funding in the amount of $4,663,446. Currently, MTTI is managing 40 projects with a total budget value of $12,239,747.

A summary of proposals, awards, and on-going projects over the previous five fiscal years can be found in Figure 2 below. A list of projects awarded in Fiscal Year 25 can be found in Appendix A. Appendix B contains a list of proposals submitted during Fiscal Year 25.



	FY21	FY22	FY23	FY24	FY25
Number of Proposals	36	52	52	52	55
Number of Awards	12	16	15	19	13
Number of Projects	30	28	33	38	32

Figure 2: Proposals, Awards, and Projects (FY21-FY25)

AWARDS

While research funding awarded showed a decrease from the levels of FY24, our current funding is higher than the levels of the previous three years, providing a strong foundation for future institute and membership growth. Figure 3 shows the awards funded for the past five fiscal years.

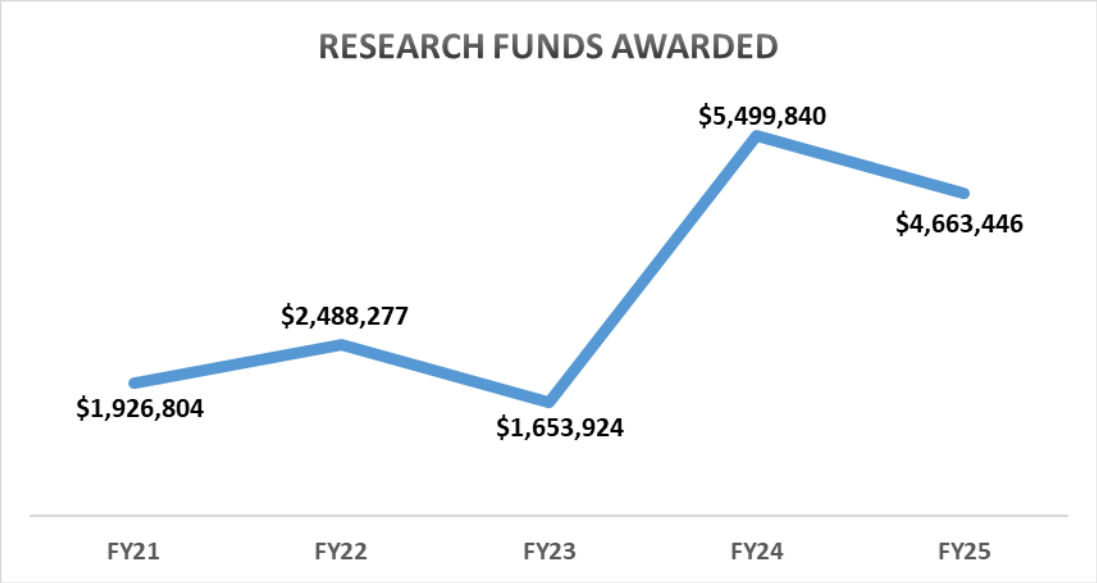
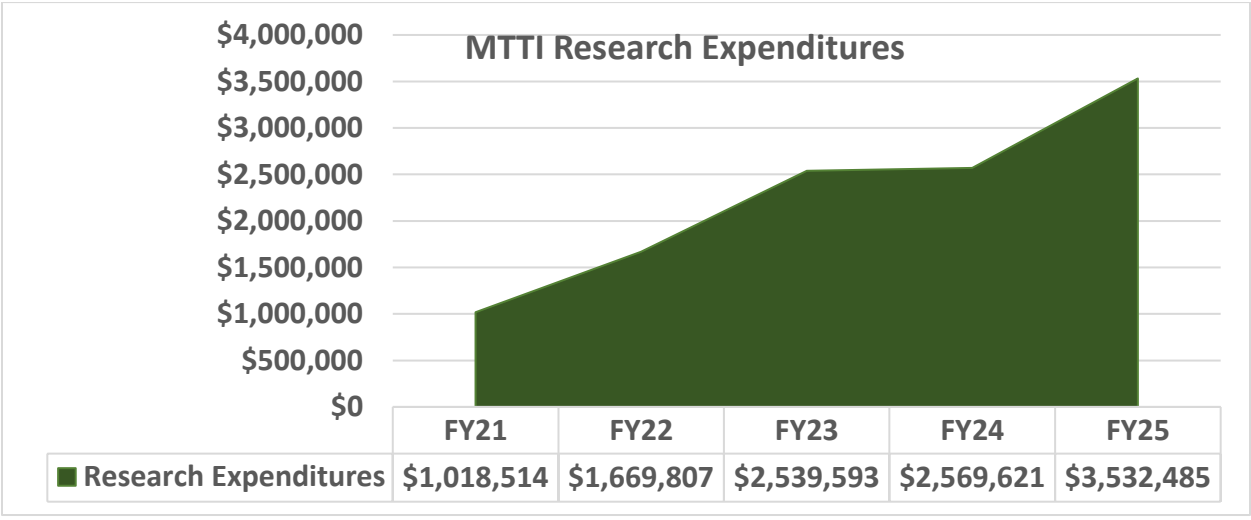


Figure 3: MTTI Research Awards Past 5 Years

EXPENDITURES

Research expenditures have steadily increased over the past five years, contributing to higher revenue for MTTI. This growth has enabled us to reinvest more in our members and in strategic initiatives. FY25 marks the highest level of research expenditures during this reporting period. Figure 4 shows research expenditure growth over the previous 5 years.

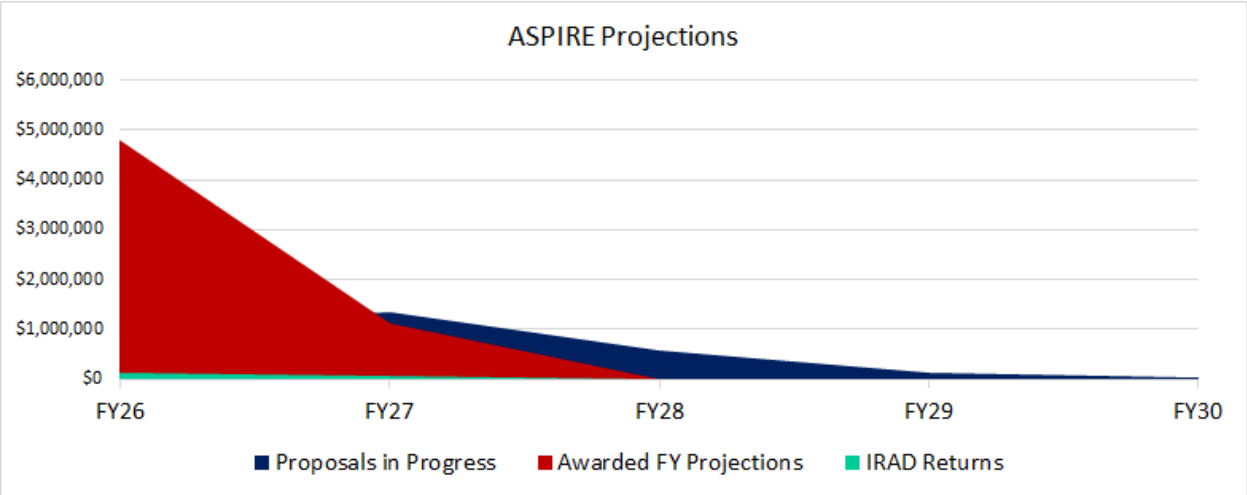


	FY21	FY22	FY23	FY24	FY25
Research Expenditures	$1,018,514	$1,669,807	$2,539,593	$2,569,621	$3,532,485

Figure 4: Research Expenditures Past 5 Years

ASPIRE PROJECTIONS

Figure 5 and the accompanying table present projected proposal value, award value, and IRAD return for MTTI from FY26 through FY30.



ASPIRE Projections	FY26	FY27	FY28	FY29	FY30
Proposals in Progress	$1,103,209	$1,342,982	$583,455	$134,663	$48,613
Awarded FY Projections	$4,796,841	$1,110,756	$20,076	$0	$0
IRAD Returns	$122,173	$54,799	$12,574	$2,727	$1,059

Figure 5: ASPIRE Projects (FY26 – FY30)

FUTURE PLANS AND GOALS

STRATEGIC PLANS AND GOALS

MTTI's strategy involves strengthening support for its existing members and building new relationships with researchers from different departments and centers. The Executive Committee will focus on:

- **Grow membership in numbers and span of departments**
  Growing MTTI's membership remains a top priority for the Executive Committee. We will continue to engage with our members and the Michigan Tech research community through regular newsletters, the Director's message, membership meetings, and information sessions, all of which are open to the entire campus.

- **Engage with state and national agencies to build relationships**
  MTTI successfully engaged with MDOT in FY25, establishing a stronger working relationship. Moving forward, we plan to expand these efforts to build relationships with other state DOTs, transportation industry groups, and federal government partners.

- **Identify associate chair members from Executive Committee for continuation in leadership**
  In 2023, Dr. Zhanping You was selected to serve as Chair of the MTTI Executive Committee. In 2025, he was elected as the new MTTI Director. As a result, a new Chairperson will need to be elected from the Executive Committee to ensure continuity of leadership and to serve if the Director is unable to fulfill his duties.

- **Collaborate with other centers/institutes for IRAD sharing**
  MTTI currently maintains collaborative projects with the Great Lakes Research Center, the Michigan Tech Research Institute, and the Department of Cognitive and Learning Sciences. In addition, MTTI faculty have facilitated funded projects that are now led by the Institute of Materials Processing and the Advanced Power Systems Laboratory. MTTI will continue to seek partnerships with other institutes to become an IRAD-sharing partner in joint initiatives.

FINANCIAL AND MEMBERSHIP GOALS TO ENHANCE MEMBERSHIP

The continued expansion of MTTI researchers, both in numbers and in diversity, remains a priority of the Institute. To increase awareness and attract new members, MTTI hosts general meetings twice annually, which are open to all members of the research community. In addition, the Institute organizes informational sessions on research opportunities, broadly marketed and open to the entire MTU community. These activities provide valuable opportunities for outreach, collaboration, and new member engagement. MTTI will continue to actively recruit researchers and promote participation throughout FY26 and beyond.

With the increase in research expenditures to the Institute and additional IRAD returns, MTTI will continue to provide travel incentives to members and students to support participation in workshops and conferences. These opportunities enhance professional development and increase the visibility of MTTI research at regional and national levels. In addition, the Executive Committee will review the budget regularly to evaluate the potential for offering additional incentives to further strengthen member engagement and research collaboration.

SPACE AND FACILITY NEEDS

MTTI members have access to the spaces listed below and share research and laboratory facilities with other departments.

- 301J Dillman Hall (Shared Conference Room)
- 315 Dillman Hall (CN RTEC Media Room/CTT Webinar studio)
- 318A and 318B offices Dillman Hall,
- 318 cubicle Dillman Hall and
- 301B Dillman Hall (Shared Conference Room)

These spaces continue to be owned and shared by MTTI, CEGE, and CTT.

FINANCIAL DEFICIT IN ACHIEVING GOALS

While many MTTI proposals have secured funding, quite a few projects have been submitted with lower than traditional on-campus IRAD rates, which has resulted in a decreased overall funding rate. Securing any level of funding for these projects is considered a positive outcome yet our goal is to limit the number of lower IRAD proposals submitted.

On a positive note, with a consistent rise in research expenditures over the last five years, our organization recorded its largest spending amount since fiscal year 17 during FY25. With the increased expenditures, IRAD increases which directly affects our ability to provide better incentives to our members.

STRATEGIES TO FILL DEFICIT

We have begun tracking proposal development hours to better align resources with financial return. Moving forward, MTTI will reduce support for proposals with lower F&A rates. If reports show a negative financial return to MTTI on certain projects, Institute-funded staff hours will be limited.

CHALLENGES AND BARRIERS

MTTI's core mission is transportation and mobility research. While we aim to be an umbrella organization for this field, other institutes also conduct relevant research. This overlap has reduced MTTI's growth and award acquisition. With the realignment of MTTI to the Frontiers Research Institute, we anticipate a more collaborative atmosphere among the centers and institutes on campus.

APPENDIX A: FY25 MEMBERS

Askari, Radwin	Minkata, Daisuke
Brooks, Colin	Morse, Audra
Buller, William	Mueller, Shane
Chatterjee, Snehamoy	Nelson, Dave
Chitta, Sandeep	Nguyen, Vinh
Colling, Timothy	Oliver, Tom
Dai, Qingli	Perrine, Kathryn
Darestani, Yousef	Sadeghi, Mohammad
Eiris, Ricardo	Sanders, Paul
Erfani, Abdolmajid	Swartz, Andrew
Ge, Dongdong	Ten, Chee-Wooi
Handler, Rober	Tran, Quang
Harman, Jason	Veinott, Elizabth
Kim, Jae Sung	Watkins, Dave
Jin, Dongzhao	Xiao, Bo
Lautala, Pasi	Yang, Yang
Malladi, Sriram	You, Zhanping
	Zhang, Kuilin

APPENDIX B:
PROPOSALS SUBMITTED FY25

Principal Investigator	Sponsor	Full Project Title	Request Amount	Total Project Cost
Zhanping You	US Dept of Energy	Reducing Carbon Footprint of Asphalt Pavement through Ethanol Foaming Technology	$ 1,000,000	$ 1,250,000
Zhanping You	Carba	Innovative Asphalt for Enhanced Infrastructure in Cold Weather	$ 67,114	$ 67,114
Bo Xiao	National Academies	Smart Helmet for Analyzing Highway Worker Fatigue	$ 150,000	$ 159,450
Bo Xiao	Western Michigan University	Research on Digital Process Methods and Implementations for Field Applications	$ 80,000	$ 80,000
Abdolmajid Erfani	Michigan Dept of Transportation	Evaluation Model for Equitable Prioritization of Bridge Investments	$ 288,429	$ 288,429
Abdolmajid Erfani	University of Minnesota/Twin Cities	Leveraging Transportation Investments for Economic Development and Wealth Building	$ 96,000	$ 96,000
Zhanping You	Minnesota Department of Transportation	Design Guidance and Best Practices for the Use of Light Fill	$ 173,217	$ 198,217
Qingli Dai	Minnesota Department of Transportation	Are Current Rigid Pavement Roundabout Designs Working in Minnesota?	$ 183,300	$ 183,300
Qingli Dai	Minnesota Department of Transportation	Holistic Design and Selection Criteria for Unbound Geomaterials Used in Pavement Systems	$ 183,277	$ 183,277
Zhanping You	Minnesota Department of Transportation	Utilizing Hydrogen Fuel Technology for a Greener Fleet	$ 158,249	$ 158,249
Snehamoy Chatterjee	Minnesota Department of Transportation	Feasibility of InSAR for Continuous Monitoring of Ground Deformation and Performance Tracking of Geotechnical Assets	$ 171,458	$ 171,458
Quang Tran	Minnesota Department of Transportation	Evaluating and Implementing Ground Penetrating Radar (GPR) for Continuous and Rapid Monitoring of Moisture Fluctuations in In-Service Roads	$ 186,172	$ 186,172
Abdolmajid Erfani	Minnesota Department of Transportation	Use Of Artificial Intelligence In the Analysis Of Qualitative Public Input	$ 159,513	$ 159,513
Yi Zhu	National Science Foundation	ERI: Foldable Jamming Plates: Mechanics and Design	$ 198,553	$ 198,553
Zhanping You	Michigan Dept of Transportation	AS NEEDED ASPHALT MATERIAL LABORATORY TESTING	$ 35,000	$ 35,000
Sai Chitta	National Science Foundation	ERI: Experimental study of grain-scale mechanics in bonded sands	$ 199,638	$ 199,638
Quang Tran	National Science Foundation	ERI: UNDERSTANDING THE ACOUSTIC RESPONSE OF RAYLEIGH WAVES IN FRESH CONCRETE FOR OPTIMIZING INTERLAYER TIMING IN 3D CONCRETE PRINTING	$ 199,581	$ 199,581
Mohammad Sadeghi	Deep Foundation Institute	Quantifying carbon footprint reduction from foundation reuse	$ 29,898	$ 59,797
Zhanping You	Michigan State University	Evaluation of Traffic Speed Deflectometer Data (TSD) for Potential Use in Michigan	$ 54,000	$ 54,000
Yousef Darestani	Michigan Dept of Transportation	A Comprehensive Framework for the Fabrication, Condition Assessment, Repair, and Replacement of Spun Concrete Poles	$ 176,022	$ 176,022
Mohammad Sadeghi	Michigan Dept of Transportation	Characterizing Corrosion Rates and Predicting Remaining Service Life for Steel Bridge Piles	$ 396,499	$ 396,499
Abdolmajid Erfani	National Science Foundation	Collaborative Research: Track 2 - Modeling Career Trajectories: Unraveling the Dynamics of Career Progression for Underrepresented Groups	$ 200,000	$ 200,000
Zhanping You	Bay County Road Commission	Develop Rubber Modified Asphalt Mixtures & Rubber Modified Asphalt Chip Seals Construction Specifications	$ 150,000	$ 150,000
Bo Xiao	National Academies	Advancing TSMO Knowledge Management with Generative AI	$ 450,000	$ 450,000
Zhanping You	American Engineering Testing	Development of Longitudinal Cracking Models for Concrete Pavements	$ 222,851	$ 222,851
Abdolmajid Erfani	National Academies	AI Integration and Workforce Transformation for State DOTs	$ 500,000	$ 500,000
Abdolmajid Erfani	National Academies	Guide for Digital Project Delivery: Integrating Design and Construction	$ 375,000	$ 375,000
Pasi Lautala	University of Illinois/Urbana-Champaign	National University Rail Center of Excellence	$ 290,000	$ 580,000
Zhanping You	University of Rhode Island	Creative Multi-Disciplinary Alliance to Advance Sustainability and Mitigate Climate Change	$ 300,000	$ 300,000
Sai Chitta	Wisconsin Department of Transportation	Investigate Wisconsin Bridge Scour in Mobile (Alluvial) Sand-Bed Rivers	$ 300,000	$ 300,000
Abdolmajid Erfani	National Academies	Using Pay Adjustment Systems to Incentivize Quality Highway Construction	$ 500,000	$ 500,000
Zhanping You	Minnesota Department of Transportation	Optimizing Recycled Binder Availability for High RAP Asphalt Mixtures: Performance-Based Approaches for Sustainable Pavements	$ 200,000	$ 200,000
Zhanping You	Michigan Dept of Environment Great Lakes and Energy	Comparative Life Cycle Assessment of Conventional, Electric, and Hydrogen-Powered Vehicles for Michigan's Fleet	$ 149,006	$ 198,674
Qingli Dai	Office of Surface Mining Reclamation and Enforcement	Sustainable and Eco-Friendly Extraction of Critical Minerals from Acid Mine Drainage (AMD) and Coal Mine Waste	$ 200,000	$ 200,000
Mohammad Sadeghi	Office of Surface Mining Reclamation and Enforcement	Engineering Strength Properties of Polyurethane Foam (PUF) and Geomaterial Interface for Mine Safeguarding Applications	$ 199,998	$ 199,998
Quang Tran	Michigan Economic Development Corp	Development of non-contact technology for Concrete Set Time	$ 54,538	$ 96,940
Zhanping You	Michigan Dept of Environment Great Lakes and Energy	Construction of Rubber Asphalt Concrete Pavement on Portland Cement Pavement on Dixie Highway	$ 132,716	$ 265,432
Abdolmajid Erfani	University of Maryland/College Park	SCC-DG - Smart and Connected Bikeways: Community-Driven Green Street Designs	$ 50,000	$ 50,000
Roohollah Askari	National Science Foundation	Collaborative Research: CAIG: Intelligent Drone-Borne GPR Non-Invasive Peatland Assessment (NIPA)	$ 434,555	$ 434,555
Jason Harman	National Science Foundation	SAI: Modeling driver decision making to alleviate traffic congestion	$ 749,564	$ 749,564
Zhanping You	Dickinson County Road Commission	Recycle scrap tire rubber and fiber to build asphalt pavement in Dickinson County	$ 114,000	$ 233,918
Zhanping You	Michigan Dept of Environment Great Lakes and Energy	Municipal Asphalt Paving with Recycled Tire Rubber in Detroit and Ann Arbor	$ 495,000	$ 1,038,750
Zhanping You	Michigan Dept of Environment Great Lakes and Energy	Field Implementation for Enhancing Pavement Durability Using Rubber Asphalt in Kent County and Rubber Concrete at General Motors Facilities	$ 495,000	$ 1,032,480
Qingli Dai	Michigan Dept of Environment Great Lakes and Energy	Upcycling of Mixed Waste Plastic and Scrap Tire Rubber as Compound Particle Feedstock for Elastomer and Plastic Manufacture	$ 172,453	$ 348,546
Mohammad Sadeghi	Minnesota Department of Transportation	Overpredicted Resistances of Non-Displacement Piles in Sands Using Static Analysis Methods	$ 100,000	$ 100,000
Richard Dobson	Wisconsin Department of Transportation	Railroad Crossing Inventories - Safety Data Study	$ 149,808	$ 149,808
Abdolmajid Erfani	Wisconsin Department of Transportation	Post-Construction Analysis of Major, Mega & Regionally Significant Projects	$ 120,000	$ 120,000
Shane Mueller	USDOT/Federal Railroad Administration	Pilot Study on Fatigue and Human Performance Analysis by Wearable Sensors and AI	$ 215,885	$ 215,885
Yousef Darestani	RS Technologies Inc	Reliability Analysis of a Variety of Utility Poles subjected to Wind-Ice-Fire Hazards	$ 140,000	$ 140,000
Zhanping You	Michigan Soybean Committee	The market development of Michigan soybean oil as an effective asphalt pavement rejuvenator	$ 108,840	$ 163,216
Yousef Darestani	Michigan Dept of Transportation	Superstructure Lifecycle Cost Determination: Best Practices and Guidelines	$ 192,760	$ 192,760
Abdolmajid Erfani	Michigan Dept of Transportation	High Load Hit Prevention	$ 279,547	$ 279,547
Qingli Dai	Michigan Dept of Transportation	Evaluate PVC Water Main Materials in Roadway Projects	$ 137,045	$ 137,045
Zhanping You	Qtek LLC	Producing high-adhesive granular rocks for high-performance asphalt pavement by using recycled mining wastes from Lake Superior shoreline	$ 46,970	$ 46,970
Colin Brooks	Michigan Dept of Transportation	Measurement and Performance of Riprap	$ 328,917	$ 328,917
			$12,740,373	$15,001,125

APPENDIX C:
PROJECTS AWARDED FY25

Principal Investigato	Sponsor	Total Sponsor	Total Project V	Full Project Title
Pasi Lautala	University of Illinois/Urbana-Champaign	$ 580,000	$ 1,160,000	National University Rail Center of Excellence (NURail CoE)
Pasi Lautala	University of South Florida	$ 247,445	$ 312,678	A Comprehensive Approach to Promoting Railroading Careers and Developing the Current Rail Industry Workforce
Shane Mueller	US Dept of Transportation/Federal Railroad Administration	$ 326,237	$ 326,237	Lightweight evaluation, training, and user collaboration for Human-AI Work Systerms in Rail Operations
Zhanping You	Washtenaw County Road Commission	$ 120,372	$ 311,541	Rubber Asphalt Overlay in Washtenaw County
Qingli Dai	Michigan Dept of Environment Great Lakes and Energy	$ 210,070	$ 500,344	Rubber modified bridge deck overlay
Zhanping You	Molten Materials	$ 33,000	$ 33,000	Project PROSPR: Upcycling Waste Plastic into Thermoplastic Elastomer
Abdolmajid Erfani	National Academies of Sciences Engineering and Medicine	$ 450,000	$ 450,000	A Guide for Implementing Price Adjustment Clauses to Balance Risk Sharing in Construction Projects
Vinh Nguyen	US Dept of Commerce/National Institute of Standards and Technology	$ 2,000,000	$ 2,000,000	Standards Development Center for Automated Driving Systems in Inclement Winter Weather
Qingli Dai	Minnesota Department of Transportation/Research Services Section	$ 195,300	$ 269,065	Are Current Rigid Pavement Roundabout Designs Working in Minnesota?
Zhanping You	Michigan Dept of Transportation	$ 35,000	$ 35,000	AS NEEDED ASPHALT MATERIAL LABORATORY TESTING
Yousef Darestani	Michigan Dept of Transportation	$ 176,022	$ 176,022	A Comprehensive Framework for the Fabrication, Condition Assessment, Repair, and Replacement of Spun Concrete Poles
Zhanping You	Bay County Road Commission	$ 150,000	$ 150,000	Develop Rubber Modified Asphalt Mixtures & Rubber Modified Asphalt Chip Seals Construction Specifications
Yousef Darestani	RS Technologies Inc	$ 140,000	$ 140,000	Reliability Analysis of a Variety of Utility Poles subjected to Wind-Ice-Fire Hazards
	Award Total	**$ 4,663,446**	**$ 5,863,887**	