

# Program Progress Performance Report for University Transportation Centers



- **Federal Agency and Organization Element to which Report is Submitted**  
United States Department of Transportation, Research and Innovative Technology Administration
- **Federal Grant or Other Identifying Number Assigned by Agency**  
DTRT12-G-UTC07
- **Project Title**  
Mid-America Transportation Center: Region 7 UTC
- **Program Director (PD) Name, Title, and Contact Information**  
Dr. Laurence R. Rilett, Director, Mid-America Transportation Center, Professor, Civil Engineering  
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- **Submission Date**  
July 27, 2016
- **DUNS and EIN Numbers**  
DUNS: 55-545-6995  
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- **Recipient Organization**  
The Board of Regents, University of Nebraska for the University of Nebraska-Lincoln  
312 N. 14th Street, Alexander West  
Lincoln, NE 68588-0430  
Telephone: 402-472-1825
- **Recipient Identifying Number or Account Number**  
25-1121-0003-001
- **Project/Grant Period**  
January 1, 2012 - January 31, 2017
- **Reporting Period End Date**  
June 30, 2016
- **Report Term or Frequency (annual, semi-annual, quarterly, other)**  
Semi-annual
- **Signature of Submitting Official (signature shall be submitted in accordance with agency- specific instructions)**

A handwritten signature in black ink, appearing to be "L.R. Rilett", written over a horizontal line.

L.R. Rilett, Director, Mid-America Transportation Center

## 1. ACCOMPLISHMENTS

### What are the major goals and objectives of the program?

The following is a list of the major goals and objectives that were outlined in the MATC Proposal and highlighted at the US DOT RITA site visit on April 12, 2012.

	Status	% Complete
Call for Problem Statements	Complete	100%
Request for Proposals	Complete	100%
Proposals under External Review (US DOT Reviewer, SHRP II Coordination, US DOT)	Complete	100%
Review Budgets for Duplication with Region 5 & 6 UTC Research Programs	Complete	100%
Final Proposal Ranking & Selection	Complete	100%
Research Projects under Contract	Complete	100%
Technology Transfer Tech Briefs, Webinars, & Presentations on Research Results	On Schedule	80%
Applicable Slides, Handouts, Videos, Podcasts, etc. Posted/Linked on MATC Website	On Schedule	80%
Final Reports Due & All Research Projects Complete	On Schedule	80%
<b>Leadership Activities</b>		
Coordination with Region 7 UTC Directors	Complete	100%
Regional Successes & Lessons Learned Workshop	On Schedule	80%
<b>Educational Activities</b>		
Grad/Undergrad MATC Course Development & Implementation	On Schedule	90%
MATC Supported Certificate Programs in Transportation	On Schedule	85%
MATC Undergraduate Summer Internship Program (Summers 2012 - 2015)	On Schedule	100% YRS 1-3, 90% YR 4
MATC Transportation Scholars Program: Graduate Seminar Course	On Schedule	100%
MATC Transportation Scholars Conference	On Schedule	80%
MATC/CUTC Student of the Year Program - Annually @ TRB	Forthcoming	100%
MATC Summer Institute (Summers 2012 & 2013)	On Schedule	100%
MATC After-School Program (Summers 2012 & 2013)	On Schedule	100%
MATC Support of "GO/Vamos!" Online K-12 Publication	On Schedule	100%
MATC Transportation Student Chapter (ITE/ASCE/Etc.) related activities	On Schedule	80%
Underrepresented Student MATC Summer Intern Program	On Schedule	100% YR 1, 90% YR 2
MATC Scholars Program for Underrepresented Students (October 2012)	On Schedule	100%
<b>Technology Transfer Activities</b>		
MATC Supported Specialty Conferences, Workshops, and Short Courses	On Schedule	90%
Mid-Continent Research Symposium: August 15-16, 2013	On Schedule	100%
LTAP Regional Meeting - MATC Workshop: September 2013	On Schedule	100% YR 1
MATC Website Information Dissemination	On Schedule	80%
MATC Social Media Sites Information Dissemination	On Schedule	80%
<b>US DOT RITA: Reporting</b>		
Posting Directory of Key Center Personnel	Complete	100%
Posting Research Project Descriptions	Complete	100%
UTC Program Progress Performance Reports (Quarterly)	On Schedule	100%
Federal Financial Reports (Quarterly)	On Schedule	100%
Annual Performance Indicators Report	On Schedule	100%

**What was accomplished under these goals?**

Currently, all MATC-planned activities are underway, in progress, or are in near completion stages. Please see the percent complete and status columns shown above for established progress on these activities.

**What opportunities for training and professional development has the program provided?**

As indicated in the table above, there are multiple opportunities for training and professional development within the planning and development phases.

Opportunities for contact hours with participants during the period of January 1 – June 30, 2016 included the MATC 2016 Summer Internship Program Roads, Rails and Racecars After-School Program, and other MATC professional development activities. Summaries of these activities are provided below.

**MATC 2016 Summer Internship Program:**

The MATC Summer Internship Program attracts a large number of talented applicants seeking to broaden their knowledge of transportation engineering, to learn about practical applications of theories discussed in undergraduate engineering courses, and to work with some of the leading agencies and professionals in their respective fields of interests. Nine (9) undergraduate students were carefully selected for the MATC 2016 Summer Internship Program. An orientation luncheon was held on May 16, 2016, during which the interns were introduced their new employers and given an internship program overview. The 10-week summer internship program will end in August 2016 with the interns sharing their individual internship experience through a video and PowerPoint presentation at the MATC Summer Internship Finale Luncheon.

First Name	Last Name	Organization
Kyle	McLaughlin	Felsburg Holt & Ullevig
Greta	Ehrhorn	Olsson Associates
Mark	Dethlefs	City of Omaha
Andrei	Frausto	Alfred Benesch
Morgan	McCullough	Felsburg Holt & Ullevig
Zachary	Turek	Olsson Associates
Sam	Allen	Olsson Associates
Mario	Garcia	City of Lincoln
Aaron	Lechtenberger	Iteris, Inc.

**MATC After-School Program - Road, Rails and Race Cars (RRRC):**

MATC continued to support the preparation and implementation efforts of the RRRRC engineering after-school club for elementary and middle school students and the summer program for middle school students from January through June, 2016.

**2015-2016 Academic Year Programming:**

The spring semester portion of the 2015-2016 academic year of RRRRC was implemented at five (5) sites from January through April: Culler Middle School, Lefler Middle School, Mickle Middle School, Goodrich

Middle School, and Maxey Elementary School. In June, RRRC was implemented at one (1) site: Culler Middle School. All of these sites are located in Lincoln, NE. Each site offered the club one day per week.

RRRC at Lefler Middle School was offered on Mondays from 3:10 p.m. - 4:00 p.m., beginning on January 11, 2016, and ending on April 25, 2016. A total of twelve (12) implementation dates were completed during this spring iteration, with the total attendance being 100 by 21 students; typical weekly participation was approximately 8 students. Topics covered included: Introduction to Sustainability with a recycling activity, Pollution/Acid Rain with green roofs, Sustainability Efforts by NDOR with a mill/fill asphalt paving activity, Wind Energy and Turbines, Water Energy, Green Transportation and Bikes, Solar Energy with an activity creating solar panel boxes, an End of Quarter 3 Celebration with a Jeopardy game, Chemical Engineering with an electrolysis experiment, Biological Engineering with a DNA activity, Computer Engineering with a coding activity, Aerospace Engineering with a balloon rocket car activity, Robotics with a Bristlebot activity, and End of Quarter 4 Celebration.

RRRC at Mickle Middle School was offered on Mondays from 3:10 p.m. - 4:00 p.m., beginning on January 11, 2016, and ending on April 25, 2016. A total of twelve (12) implementation dates were completed during this spring iteration, with total attendance being 80 by 29 students; typical weekly participation was approximately 6 students. Topics covered included: Introduction to Sustainability with a recycling activity, Pollution/Acid Rain with green roofs, Sustainability Efforts by NDOR with a mill/fill asphalt paving activity, Wind Energy and Turbines, Water Energy, Green Transportation and Bikes, Solar Energy with an activity creating solar panel boxes, an End of Quarter 3 Celebration with a Jeopardy game, Chemical Engineering with an electrolysis experiment, Biological Engineering with a DNA activity, Computer Engineering with a coding activity, Aerospace Engineering with a balloon rocket car activity, Robotics with a Bristlebot activity, and End of Quarter 4 Celebration.

RRRC at Culler Middle School was offered on Wednesdays from 3:10 p.m. - 4:00 p.m., beginning on January 13, 2016 and ending on April 27, 2016. A total of thirteen (13) implementation dates were completed during this spring iteration, with the total attendance being 99 by 16 students; typical weekly participation was approximately 8 students. Topics covered included: Introduction to Sustainability with a recycling activity, Pollution/Acid Rain with green roofs, Sustainability Efforts by NDOR with a mill/fill asphalt paving activity, Wind Energy and Turbines, Water Energy, Green Transportation and Bikes, Solar Energy with an activity creating solar panel boxes, an End of Quarter 3 Celebration with a Jeopardy game, Chemical Engineering with an electrolysis experiment, Biological Engineering with a DNA activity, Computer Engineering with a coding activity, Aerospace Engineering with a balloon rocket car activity, Robotics with a Bristlebot activity, and End of Quarter 4 Celebration.

RRRC at Goodrich Middle School was offered on Thursdays from 3:10 p.m. to 4:00 p.m., beginning on January 14, 2016, and ending on April 28, 2016. A total of thirteen (13) implementation dates were completed during this spring iteration, with the total attendance being 138 by 29 students; typical weekly participation was approximately 11 students. Topics covered included: Introduction to Sustainability with recycling paper, Pollution/Acid Rain with green roofs, Wind Energy and Turbines, Water Energy, Green Transportation and Bikes, Solar Energy with an activity creating solar panel boxes, a guest speaker from the College of Engineering related to choosing a career in engineering, an End of Quarter 3 Celebration with a Jeopardy game, Biological Engineering with a DNA activity, Computer Engineering with a coding activity, Aerospace Engineering with a balloon rocket car activity, Robotics with a Bristlebot activity, and End of Quarter 4 Celebration.

RRRC at Maxey Elementary School was offered on Wednesdays from 3:10 p.m. - 4:00 p.m., beginning on

February 24, 2016 and ending on April 9, 2016. A total of six (6) implementation dates were completed during this spring iteration, with the total attendance being 42 by 8 students; typical weekly participation was approximately 7 students. Topics covered included: Introduction to Civil Engineering with an pudding roads activity, Introduction to Structural Engineering and Bridges with a paper/straw bridges activity, Flames and Fire Safety with a match stick rockets activity, Introduction to Transportation Systems Engineering with a penny boats activity, Water Filters and Roadways with a water filter building lab, and the End of Program Celebration with a Jeopardy game.

Additional RRRC tasks completed during the Spring 2016 semester included attending meetings, developing a curriculum schedule for Quarter Four (4) and Summer Club, recruitment efforts, and communication with mentors, teachers, and other pertinent staff. Multiple calls and emails were made throughout this term to the RRRC team members to assist with preparation for the club implementation and support with the facilitation of clubs.

The after school club employed: one (1) returning educational programs coordinator, five (5) returning teachers, and seven (7) new and returning undergraduate and graduate engineering student mentors. On weekly average, each school had one (1) teacher and two (2) undergraduate engineering student mentors. At Goodrich, there are two teachers who are alternating working with the club throughout the 2015-2016 school year. During this report period, the first teacher worked from January to February, and the second teacher worked from February to May. In total, fifty-six (56) program days were completed during the spring iterations, with the total attendance being 459 by 103 individual students.

### **2016 Summer Programming:**

Efforts during late April/early May included an increased focus on the communication of and preparation for the summer RRRC program at Culler Middle School. Team members of the summer RRRC program included: one (1) returning educational programs coordinator, one (1) returning teacher, two (2) returning graduate or undergraduate engineering student mentors, and multiple individuals from the Culler Middle School staff and volunteers. RRRC was offered once a week on Wednesdays, with two sections offered each day from 12:00 p.m. - 1:30 p.m. and 1:30 p.m. – 3 p.m. A total of three (3) club days were completed with the start date of the summer program beginning on June 8, 2016 and ending on June 22, 2016. The total attendance of the Culler Middle School summer program was 136 by 61 students; typical weekly participation was approximately 45 students. Topics covered included: Introduction to Civil Engineering, highlighting the building of bridges; Construction Engineering with a paper table activity; and an Introduction to Safety with a barrier building activity.

### **2016-2017 Programming:**

#### *Summary of Work Planned for the Upcoming Report Period*

The RRRC program will continue throughout the 2016-2017 academic year for middle and elementary school students. During this period, the club will be implemented at five (5) sites: Lefler Middle School, Culler Middle School, Goodrich Middle School, Mickle Middle School, and Maxey Elementary School. Each site will have at least: one (1) teacher, two (2) graduate or undergraduate engineering student mentors, and one (1) educational programs coordinator. Further, curriculum focus will include introducing various branches of engineering with a continued emphasis on transportation. Future focus of the after-school clubs will also center on the attainment of future club grants, on manuscript writing for academic journal submission, and on metric development for club outcome analysis.

For images of the RRRC academic year clubs and summer program in action, and to view PowerPoints and materials of RRRC lessons and activities, please visit the following page:

<https://www.facebook.com/STEMAfterSchoolProgram?ref=hl>

**MATC Professional Development Activities, Conferences, and Workshops:**

As part of MATC’s education and workforce development initiatives, the consortium member universities support student and faculty travel to a wide variety of meetings and conferences across the country to promote and discuss the implementation of research. These connections help students progress both academically and professionally. The table below highlights professional development opportunities pursued by staff, students, and faculty over the reporting period.

<b>Name</b>	<b>Destination</b>	<b>Conference Name</b>	<b>Dates</b>
Shanshan Zhao	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Li Zhao	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Huiyuan Liu	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Jianan Zhou	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Yashu Kang	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Larry Rilett	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Ana Guajardo	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Laviania Thandayithabani	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Gabriela Perales	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Fayaz Sofi	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Ernest Tufuor	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Myungwoo Lee	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Tyler Schmidt	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Brandt Humphrey	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Gabriel Nsengiyumva	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016
Pranav Shakya	Washington, D.C.	Transportation Research Board 95th Annual Meeting	1/10/2016

Larry Rilett	Los Angeles	CUTC Annual Summer Meeting	6/6/2016
Lavania Thandayithabani	Los Angeles	CUTC Annual Summer Meeting	6/6/2016

**How have the results been disseminated?**

All MATC activities are primarily in the implementation phase and some recurring projects are in the planning phase for the next year. Primarily, electronic distribution and social media have been used. PowerPoint presentations have also been given.

MATC has connected with 82 newspaper, TV, and radio organizations located in all eight partner institutions and across the nation, and will be developing a press release template to announce respective project results and highlights for each location. The goal is to develop a product that easily translates into a story for media personnel to quickly and effectively report the activities in which MATC is engaged so that MATC and US DOT OST-R are visible and accurately represented to the public. In the current reporting period, staff have spent time planning and producing the content for the upcoming MATC Newsletter. The next MATC Newsletter is slated to be distributed in the upcoming months.

**What do you plan to do during the next reporting period to accomplish the goals and objectives?**

There will be no change in the agency-approved application for this effort. Implementation of the activities outlined in the table above for all research, education, workforce development, and technology transfer projects will continue toward completion on-schedule.

**2. PRODUCTS**

**Publications, conference papers, and presentations:**

Highlights of the Roads, Rails and Racecars After-School Program

[https://www.facebook.com/STEMAfterSchoolProgram?ref\\_type=bookmark](https://www.facebook.com/STEMAfterSchoolProgram?ref_type=bookmark)

**Website(s) or other Internet site(s):**

Currently, MATC maintains 7 online sites that distribute information utilizing the internet. Links to each site, as well as report period information, can be found below:

**MATC Website:**

By clicking the following link: <http://matc.unl.edu>, you will be directed to MATC’s website. Below is highlighted information from Google Analytics about the website’s traffic from January 1 – June 30 2016. By understanding and capitalizing this knowledge, we are able to make our homepage engaging, relevant, and resourceful to our viewers.

Visits: 9,866	Page views: 16,387	Pages per visit: 1.66	Average visit duration: 0:56
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**SlideShare:**

Our total views have increased by 3,216 since our last metric. This increase has expanded our global reach; the top 5 countries that view our presentations are: the United States, France, Russian Federation, Germany, and Canada. Below you will find a snapshot of MATC’s SlideShare activity and the link to view the page.

<http://www.slideshare.net/matcRegion7UTC/presentations/>

Total Views: 6,180	Downloads: 26	Social Media Shares: 0
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**Facebook:**

The Mid-America Transportation Center (MATC) has the following statistics and can be viewed by clicking on the link below.

<https://www.facebook.com/pages/Mid-America-Transportation-Center-MATC/141238439284182>

Views: 522	Likes: 20	Reach: 16,324	Total countries: 23	Languages: 12
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**Twitter:**

The Mid-America Transportation Center’s twitter handle is @MATCNews. The page can be viewed by clicking the following link, and highlighted numbers for MATC’s Twitter activity are below.

<http://twitter.ie/MATCNews>

Followers: 159	Tweet Impressions: 1,197	Profile Visits: 69
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**YouTube:**

MATC’s YouTube feed can be viewed by clicking the following link.

[http://www.youtube.com/user/midamericatrans?feature=results\\_main](http://www.youtube.com/user/midamericatrans?feature=results_main)

Videos: 13	Views: 4,449	Minutes Watched: 11,470
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**LinkedIn:**

The newly created Mid-America Transportation Center LinkedIn group can be found at [http://www.linkedin.com/groups/MidAmerica-Transportation-Center-4484370?trk=myg\\_ugrp\\_ovr](http://www.linkedin.com/groups/MidAmerica-Transportation-Center-4484370?trk=myg_ugrp_ovr). We have compiled a list of individuals to invite. Our goal is to post valuable and relevant information that aligns with the interests of the group. We will also be posting our research, tech transfer, educational information, and other MATC updates within other transportation LinkedIn groups.

Currently, marketing and media plans are being established to further advance and grow each site’s exposure and content based on the programs established.





**Technologies or techniques:**

There is nothing new to report regarding the Center’s technologies or techniques. All current research and workforce development activities are under implementation.

**Inventions, patent applications, and/or licenses:**

All current research and workforce development activities are under implementation.

**Other products:**

As the project selection process is complete, the following research projects listed according to university have been selected for funding. The links to their research project descriptions in TRID can be found below:

University Name	Project Title	Lead PI	Access in TRID
Iowa State University	Methods for Removing Concrete Decks from Bridge Girders	Phares, Brent	<a href="http://trid.trb.org/view/2012/P/1265564">http://trid.trb.org/view/2012/P/1265564</a>
Iowa State University	Evaluation of Thermal Integrity Profiling for Deep Foundations	Ashlock, Jeremy	<a href="http://trid.trb.org/view/2012/P/1250790">http://trid.trb.org/view/2012/P/1250790</a>
Iowa State University	Statewide Heavy Truck Crash Assessment	Hans, Zachary	<a href="http://trid.trb.org/view/2012/P/1265566">http://trid.trb.org/view/2012/P/1265566</a>
Iowa State University	Safety and Mobility Impacts of Winter Weather - Phase 3	Hans, Zachary	<a href="http://trid.trb.org/view/2012/P/1265563">http://trid.trb.org/view/2012/P/1265563</a>
Iowa State University	Validation of Traffic Simulation Model Output for Work Zone and Mobile Source Emissions Modeling and Integration with Human-in-the-Loop Driving Simulators	Hallmark, Shauna	<a href="http://trid.trb.org/view/2012/P/1265562">http://trid.trb.org/view/2012/P/1265562</a>
Iowa State University	Sustainable Asphalt Pavements Using Bio-Binders from Bio-Fuel Waste	Williams, R. Christopher	<a href="http://trid.trb.org/view/2012/P/1265565">http://trid.trb.org/view/2012/P/1265565</a>
Iowa State University	Systemic Safety Improvement Risk Factor Evaluation and Countermeasure Summary	Knapp, Keith	<a href="http://trid.trb.org/view/2013/P/1265561">http://trid.trb.org/view/2013/P/1265561</a>
Iowa State University	Evaluation of Air-Coupled Impact-Echo Test Method	Ashlock, Jeremy	<a href="http://trid.trb.org/view/2013/P/1257006">http://trid.trb.org/view/2013/P/1257006</a>
Iowa State University	Study of the Regulatory Issues Affecting Truck Freight Movement in Region VII	Dong, Jing	<a href="http://trid.trb.org/view/2013/P/1257005">http://trid.trb.org/view/2013/P/1257005</a>
Iowa State University	Development of Railroad Highway Grade Crossing Closure Rating Formula	Hans, Zachary	<a href="http://trid.trb.org/view/2013/P/1324546">http://trid.trb.org/view/2013/P/1324546</a>
Iowa State University	Digital Documentation of Element Condition for Bridge Evaluation	Turkan, Yelda	<a href="http://trid.trb.org/view/2013/P/1257003">http://trid.trb.org/view/2013/P/1257003</a>

Iowa State University	Modeling Multi-Modal Freight Transportation Network Performance Under Disruptions	Dong, Jing	<a href="http://trid.trb.org/view/2013/P/1257002">http://trid.trb.org/view/2013/P/1257002</a>
Iowa State University	Framework for Advanced Daily Work Report System	Jeong, David	<a href="http://trid.trb.org/view/2013/P/1257001">http://trid.trb.org/view/2013/P/1257001</a>
Kansas State University	Sustainable Asphalt Pavements Using Bio-Binders from Bio-Fuel Waste	Klabunde, Ken	<a href="http://trid.trb.org/view/2012/P/1305391">http://trid.trb.org/view/2012/P/1305391</a>
Kansas State University	Evaluation of Bonding Agent Application on Concrete Patch Performance	Riding, Kyle	<a href="http://trid.trb.org/view/2012/P/1251902">http://trid.trb.org/view/2012/P/1251902</a>
Kansas State University	New Generation Bio-Binder Formulation	Bossmann, Stefan H.	<a href="http://trid.trb.org/view/2013/P/1286098">http://trid.trb.org/view/2013/P/1286098</a>
Kansas State University	Reducing Work Zone Duration, Comparison of Nighttime vs. Daytime Crashes and Effectiveness of Lighting in Highway Work Zones	Dissanayake, Sunanda	<a href="http://trid.trb.org/view/2013/P/1286097">http://trid.trb.org/view/2013/P/1286097</a>
Kansas State University	KDOT Column Expert: Ultimate Shear Capacity of Circular Columns using the Modified Compression Field Theory	Rasheed, Hayder A.	<a href="http://trid.trb.org/view/2013/P/1286096">http://trid.trb.org/view/2013/P/1286096</a>
Kansas State University	Evaluation of Low-Cost Intersection Countermeasures to Reduce Red Light Running Violations	Dissanayake, Sunanda	<a href="http://trid.trb.org/view/2012/P/1251903">http://trid.trb.org/view/2012/P/1251903</a>
Missouri University of Science & Technology	Unbonded Concrete Pavement/Overlay Monitoring	Chen, Genda	<a href="http://trid.trb.org/view/2013/P/1256992">http://trid.trb.org/view/2013/P/1256992</a>
Missouri University of Science & Technology	Quantifying Economic Benefits for Rail Infrastructure Projects	Long, Suzanna	<a href="http://trid.trb.org/view/2013/P/1256990">http://trid.trb.org/view/2013/P/1256990</a>
Missouri University of Science & Technology	Develop a UAV Platform for Automated Bridge Inspection	Yin, Zhaozheng	<a href="http://trid.trb.org/view/2013/P/1256989">http://trid.trb.org/view/2013/P/1256989</a>
Missouri University of Science & Technology	Freeway Travel Time Estimation using Existing Fixed Traffic Sensors – A Computer-Vision-Based Vehicle Matching Approach	Yin, Zhaozheng	<a href="http://trid.trb.org/view/2013/P/1256988">http://trid.trb.org/view/2013/P/1256988</a>
Missouri University of Science & Technology	Evaluation of Pile Load Tests for Use in Missouri LRFD Guidelines	Luna, Ronaldo	<a href="http://trid.trb.org/view/2012/P/1251897">http://trid.trb.org/view/2012/P/1251897</a>

Missouri University of Science & Technology	Splice Performance Evaluation of Enamel-Coated Rebar for Structural Safety	Chen, Genda	<a href="http://trid.trb.org/view/2012/P/1251896">http://trid.trb.org/view/2012/P/1251896</a>
Missouri University of Science & Technology	Work Zone Safety: Physical and Behavioral Barriers in Accident Prevention	Long, Suzanna	<a href="http://trid.trb.org/view/2012/P/1331590">http://trid.trb.org/view/2012/P/1331590</a>
Missouri University of Science & Technology	Longitudinal Useful Life Analysis and Replacement Strategies for LED Traffic Indicators	Long, Suzanna	<a href="http://trid.trb.org/view/2012/P/1331591">http://trid.trb.org/view/2012/P/1331591</a>
Missouri University of Science & Technology	Nondestructive Evaluation of Mechanically Stabilized Earth Walls with Frequency-Modulated Continuous-Wave (FM-CW) Radar	Chen, Genda	<a href="http://trid.trb.org/view/2012/P/1254337">http://trid.trb.org/view/2012/P/1254337</a>
Missouri University of Science & Technology	Quadcopter with Heterogeneous Sensors for Autonomous Bridge Inspection	Yin, Zhaozheng	<a href="http://trid.trb.org/view/2012/P/1251894">http://trid.trb.org/view/2012/P/1251894</a>
University of Iowa	Advanced Decision Modeling for Real Time Variable Tolling – Data Collection Trial	Hanley, Paul	<a href="http://trid.trb.org/view/2013/P/1257011">http://trid.trb.org/view/2013/P/1257011</a>
University of Iowa	Older Driver Acceptance of New Driving Safety Technology	Marshall, Dawn	<a href="http://trid.trb.org/view/2013/P/1257010">http://trid.trb.org/view/2013/P/1257010</a>
University of Iowa	Distracted Driving due to Visual Working Memory Load	Mordkoff, J. Toby	<a href="http://trid.trb.org/view/2013/P/1257009">http://trid.trb.org/view/2013/P/1257009</a>
University of Iowa	Dollars for Lives: The Effects of Capital Outlay and Maintenance	Nguyen-Hoang, Phuong	<a href="http://trid.trb.org/view/2013/P/1257008">http://trid.trb.org/view/2013/P/1257008</a>
University of Iowa	Integration of Human-in-the-Loop Driving Simulator with Microscopic Traffic Simulation	Chrysler, Susan	<a href="http://trid.trb.org/view/2012/P/1251918">http://trid.trb.org/view/2012/P/1251918</a>
University of Iowa	Developing and Refining Sustainability Tools for Winter Maintenance Operations	Nixon, Wilfrid	<a href="http://trid.trb.org/view/2012/P/1251916">http://trid.trb.org/view/2012/P/1251916</a>
University of Iowa	Mobility and Accessibility of Hispanics in Small Town and Rural Areas	Matsuo, Miwa	<a href="http://trid.trb.org/view/2012/P/1251915">http://trid.trb.org/view/2012/P/1251915</a>
University of Iowa	Towards Autonomous Vehicles	Schwarz, Chris	<a href="http://trid.trb.org/view.aspx?id=1251917">http://trid.trb.org/view.aspx?id=1251917</a>
University of Iowa	Investigation of Synergistic Effects of Warm Mix Asphalt and High Fractionated Reclaimed Asphalt Pavement for Safe, Environmentally Sustainable Highway	Lee, Hosin	<a href="http://trid.trb.org/view/2012/P/1251914">http://trid.trb.org/view/2012/P/1251914</a>

University of Iowa	Improving Fire Safety: Modifying Droplet Behavior to Minimize Ignition	Ratner, Albert	<a href="http://trid.trb.org/view/2012/P/1251911">http://trid.trb.org/view/2012/P/1251911</a>
University of Iowa	Diagnosis and prognosis of retrofit fatigue crack reinitiation and growth in steel-girder bridges for proactive repair and emergency planning	Rahmatalla, Salam	<a href="http://trid.trb.org/view/2013/P/1257007">http://trid.trb.org/view/2013/P/1257007</a>
University of Kansas	Repair of Skewed Steel Bridge Girders Damaged by Distortion-Induced Fatigue	Bennett, Caroline	<a href="http://trid.trb.org/view/2013/P/1257000">http://trid.trb.org/view/2013/P/1257000</a>
University of Kansas	Evaluation of an Electronic Safety Perimeter System for Kansas Temporary Work Zones	Mulinazz, Thomas	<a href="http://trid.trb.org/view/2013/P/1256999">http://trid.trb.org/view/2013/P/1256999</a>
University of Kansas	Methods for Field Identification of Fouled Railroad Ballast	Parsons, Robert	<a href="http://trid.trb.org/view/2013/P/1256998">http://trid.trb.org/view/2013/P/1256998</a>
University of Kansas	Evaluation of the Intersection Confirmation Light System to Reduce Red Light Running Violations at Freeway Ramp Intersections	Schrock, Steven	<a href="http://trid.trb.org/view/2013/P/1256997">http://trid.trb.org/view/2013/P/1256997</a>
University of Kansas	Geosynthetic Reinforcement to Protect Underground Pipes against Damage from Construction and Traffic	Han, Jie	<a href="http://trid.trb.org/view/2012/P/1251906">http://trid.trb.org/view/2012/P/1251906</a>
University of Kansas	Evaluation of Low-Cost Intersection Countermeasures to Reduce Red Light Running Violations	Schrock, Steven	<a href="http://trid.trb.org/view/2012/P/1251903">http://trid.trb.org/view/2012/P/1251903</a>
University of Kansas	Repair of Floorbeam-to-Stringer Connections Affected by Distortion-Induced Fatigue	Bennett, Caroline	<a href="http://trid.trb.org/view/2012/P/1251904">http://trid.trb.org/view/2012/P/1251904</a>
University of Kansas	Properties of Fouled Recycled Ballast	Parsons, Robert	<a href="http://trid.trb.org/view/2012/P/1251905">http://trid.trb.org/view/2012/P/1251905</a>
University of Missouri	Development of the Fourth Edition of The Manual for Identification, Analysis and Correction of High-crash Locations (HAL)	Sun, Carlos	<a href="http://trid.trb.org/view/2012/P/1251898">http://trid.trb.org/view/2012/P/1251898</a>
University of Missouri	Ground-based Interferometric Radar for Rockfall Hazard Monitoring	Rosenblad, Brent	<a href="http://trid.trb.org/view/2013/P/1256995">http://trid.trb.org/view/2013/P/1256995</a>
University of Missouri	Highway Safety Manual Applied in States II - Freeway/Software	Sun, Carlos	<a href="http://trid.trb.org/view/2013/P/1286094">http://trid.trb.org/view/2013/P/1286094</a>
University of Missouri	Nondestructive Evaluation Technologies for Bridge Inspection	Washer, Glenn	<a href="http://trid.trb.org/view/2013/P/1256993">http://trid.trb.org/view/2013/P/1256993</a>
University of Missouri	Investigation of Alternate Work Zone Merging Sign Configurations	Edara, Praveen	<a href="http://trid.trb.org/view/2013/M/1279838">http://trid.trb.org/view/2013/M/1279838</a>

University of Missouri	Highway Safety Manual Applied in States: Calibration and Training	Sun, Carlos	<a href="http://trid.trb.org/view/2012/P/1251901">http://trid.trb.org/view/2012/P/1251901</a>
University of Missouri	Evaluation of Alternative Geometric Designs on Highway Corridors - Case Study of J Turns	Edara, Praveen	<a href="http://trid.trb.org/view/2012/P/1251900">http://trid.trb.org/view/2012/P/1251900</a>
University of Missouri	Evaluation of Work Zone Software Programs: Phase 2 - Validation Using Field Data	Edara, Praveen	<a href="http://trid.trb.org/view/2012/P/1251899">http://trid.trb.org/view/2012/P/1251899</a>
University of Missouri	Nondestructive Evaluation Technologies for Bridge Inspection	Washer, Glenn	<a href="http://trid.trb.org/view/2012/P/1252087">http://trid.trb.org/view/2012/P/1252087</a>
University of Missouri	Effectiveness of Work Zone Intelligent Transportation Systems	Edara, Praveen	<a href="http://trid.trb.org/view/2012/P/1252086">http://trid.trb.org/view/2012/P/1252086</a>
University of Missouri	Analysis of Driver Merging	Edara, Praveen	<a href="http://trid.trb.org/view/2012/P/1252085">http://trid.trb.org/view/2012/P/1252085</a>
University of Nebraska-Lincoln	Optimizing Concrete Deck Removal in Concrete I-Girder Bridges	Morcous, George	<a href="http://trid.trb.org/view/2012/P/1251928">http://trid.trb.org/view/2012/P/1251928</a>
University of Nebraska-Lincoln	Safety Performance Evaluation of Posts for use in a New Short Radius Guardrail for Intersecting Roadways	Reid, John	<a href="http://trid.trb.org/view/2012/P/1251923">http://trid.trb.org/view/2012/P/1251923</a>
University of Nebraska-Lincoln	Investigation, Dynamic Testing, and Evaluation of Guardrail Posts for Use in Transitions between Temporary Concrete Barrier and Guardrail	Lechtenberg, Karla	<a href="http://trid.trb.org/view/2012/P/1251922">http://trid.trb.org/view/2012/P/1251922</a>
University of Nebraska-Lincoln	Investigation of Freight Data and Operations in Nebraska	Khattak, Aemal	<a href="http://trid.trb.org/view/2013/P/1256987">http://trid.trb.org/view/2013/P/1256987</a>
University of Nebraska-Lincoln	Impact of Truck Loading on Design and Analysis of Asphaltic Pavement Structures — Phase IV	Kim, Yong-Rak	<a href="http://trid.trb.org/view/2013/P/1257016">http://trid.trb.org/view/2013/P/1257016</a>
University of Nebraska-Lincoln	Testing and Evaluation of Guardrail Posts Installed in Mow Strips	Rosenbaugh, Scott	<a href="http://trid.trb.org/view/2013/P/1257015">http://trid.trb.org/view/2013/P/1257015</a>
University of Nebraska-Lincoln	Diffuse Ultrasound for Damage Detection in Concrete Railroad Ties	Turner, Joseph	<a href="http://trid.trb.org/view/2013/P/1257014">http://trid.trb.org/view/2013/P/1257014</a>
University of Nebraska-Lincoln	Effects of Sediments on BMPs for Highway Runoff Control	Zhang, Tian	<a href="http://trid.trb.org/view/2013/P/1257013">http://trid.trb.org/view/2013/P/1257013</a>
University of Nebraska-Lincoln	Protocol For Evaluation of Existing Bridges	Szerszen, Maria	<a href="http://trid.trb.org/view/2013/P/1257012">http://trid.trb.org/view/2013/P/1257012</a>

University of Nebraska-Lincoln	Study of a Distributed Wireless Multi-Sensory Train Approach Detection and Warning System for Improving the Safety of Railroad Workers	Sharif, Hamid	<a href="http://trid.trb.org/view/2012/P/1251929">http://trid.trb.org/view/2012/P/1251929</a>
University of Nebraska-Lincoln	Smart City Lincoln: Safe Intersections and Intelligent Enforcement	Sharma, Anuj	<a href="http://trid.trb.org/view/2012/P/1251919">http://trid.trb.org/view/2012/P/1251919</a>
University of Nebraska-Lincoln	Development of a Guide for Prioritization of Railway Bridges for Repair and Replacement	Rakoczy, Anna	<a href="http://trid.trb.org/view/2012/P/1251927">http://trid.trb.org/view/2012/P/1251927</a>
University of Nebraska-Lincoln	Distracted Highway Users at Highway-rail Grade Crossings	Khattak, Aemal	<a href="http://trid.trb.org/view/2012/P/1251926">http://trid.trb.org/view/2012/P/1251926</a>
University of Nebraska-Lincoln	Alternative Funding Mechanisms for State Transportation Systems in Predominantly Rural States	Anderson, John	<a href="http://trid.trb.org/view/2012/P/1251925">http://trid.trb.org/view/2012/P/1251925</a>
University of Nebraska-Lincoln	Dilemma Zone Protection on High-Speed Arterials	Naik, Bhaven	<a href="http://trid.trb.org/view/2012/P/1251924">http://trid.trb.org/view/2012/P/1251924</a>
University of Nebraska-Lincoln	Development of Shaker Test as a Standardized Test Protocol for Deicing Chemicals Evaluation	Tuan, Christopher	<a href="http://trid.trb.org/view/2012/P/1251921">http://trid.trb.org/view/2012/P/1251921</a>
University of Nebraska-Lincoln	Development of a Vacuum-Filtration-Based Method for Rapid Measurement of Total Suspended Solids in Stormwater Runoff from Construction and Development Sites	Zhang, Tian	<a href="http://trid.trb.org/view/2012/P/1251920">http://trid.trb.org/view/2012/P/1251920</a>

### 3. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

#### What other organizations have been involved as partners?

During the current reporting period, the Mid-America Transportation Center has worked with 81 unique organizations across the United States and around the world to develop the research, education, workforce development, and technology transfer activities that are currently underway at the center. Each organization and its location is listed below, along with information describing the specific area or capacity in which the respective organization is committed to supporting the center. For more detailed information on how each organization is working with the center, please email the MATC program coordinator, Laviania Thandayithabani, at [lthanday@unl.edu](mailto:lthanday@unl.edu).

MATC Program Affiliation	Organization Name	City	State	CO	Financial Support	In-Kind Support	Contribution Facilities	Collaborative Research	Personnel Exchanges
Scholars Program	A.O. Maki & Associates, LLC	Kirkland	WA	USA					X

Roads, Rails and Race Cars After-School Program	Amy Starr, Advisory Board Member/RRRC guest speaker	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	Christina Argo, Omaha Public Schools/RRRC guest speaker	Omaha	NE	USA		X			
Research Program and Workforce Development	CISL Research Project			Israel				X	
Research Program and Workforce Development	City of Lincoln Public Works & Utilities	Lincoln	NE	USA				X	
Intern Program (UNL)	City of Lincoln: Materials Division	Lincoln	NE	USA			X		X
Roads, Rails and Race Cars After-School Program	Culler Middle School	Lincoln	NE	USA		X			
Research Program and Workforce Development	Debra S. Haugen, LLC	Minneapolis	MO	USA				X	
Roads, Rails and Race Cars After-School Program	Emily Faubel, Advisory Board Member/RRRC guest speaker	Lincoln	NE	USA		X			
Research Program and Workforce Development	Geotechnology INC	St. Louis	MO	USA				X	
Scholars Program	H.G. Adams & Associates, Inc.	Norfolk	VA	USA					X
Research Program and Workforce Development	Iowa DOT	Ames	IA	USA				X	
Research Program and Workforce Development	ISU Civil Engineering	Ames	IA	USA				X	
Intern Program (UNL)	Iteris, Inc.	Lincoln	NE	USA			X		X
Roads, Rails and Race Cars After-School Program	Jeff Cole, Advisory Board Member	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	John Huber, Omaha Public Schools/RRRC guest speaker	Omaha	NE	USA		X			
Roads, Rails and Race Cars After-School Program	John Swanson, Nebraska Trucking Association/RRRC guest speaker	Lincoln	NE	USA		X			
Scholars Program	JPID Consulting	Baton-Rouge	LA	USA					X
Research Program and Workforce Development	Kansas DOT	Topeka	KS	USA				X	
Research Program and Workforce Development	Korea Institute of Construction Technology	Goyang-Si Gyeonggi-Do		Korea				X	
Research Program and Workforce Development	K-TRAN	Topeka	KS	USA				X	
Research Program and Workforce Development	Kumho Petrochemical, Ltd	Seoul		Korea				X	
Roads, Rails and Race Cars After-School Program	Larry Johnson, Advisory Board Member/RRRC guest speaker	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	Lea Ann Johnson, Advisory Board Member	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	Lefler Middle School	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	Lincoln Pius X	Lincoln	NE	USA		X			
Scholars Program	Lincoln University	Jefferson City	MO	USA					X
Research Program and Workforce Development	Lockheed Martin	Bethesda	MD	USA	X			X	
Roads, Rails and Race Cars After-School Program	Mary Davie, Advisory Board Member/RRRC guest speaker	Lincoln	NE	USA		X			
Scholars Program	Massachusetts Institute of Technology	Cambridge	MA	USA					X
Roads, Rails and Race Cars After-School Program	Maxey Elementary School	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	McMillan Magnet Middle School	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	Mickle Middle School	Lincoln	NE	USA		X			
Research Program and Workforce Development	Minnesota DOT	St. Paul	MO	USA				X	
Research Program and Workforce Development	Missouri DOT	Jefferson City	MO	USA				X	
Scholars Program	Morgan State University	Baltimore	MD	USA					X



Research Program and Workforce Development	MST Dept of Civil Architectural & Environmental Engineering	Rolla	MO	USA				X	
Research Program and Workforce Development	MU Dept of Civil & Environmental Engineering	Columbia	MO	USA				X	
Research Program and Workforce Development	NE Dept of Roads	Lincoln	NE	USA				X	
Scholars Program	New Mexico State University	Las Cruces	NM	USA					X
Roads, Rails and Race Cars After-School Program	North Star High School	Lincoln	NE	USA		X			
Intern Program (UNL)	Olsson Associates, Inc.	Omaha	NE	USA			X		X
Intern Program (UNL)	Olsson Associates, Inc.	Lincoln	NE	USA			X		X
Scholars Program	Prairie View A&M University	Prairie View	TX	USA					X
Scholars Program	Prairie View A&M	College Station	TX	USA					X
Research Program and Workforce Development	PTV America, Inc.	Portland	OR	USA				X	
Scholars Program	Purdue University	West Lafayette	IN	USA					X
Intern Program (UNL)	Schemmer Associates	Lincoln	NE	USA			X		X
Intern Program (UNL)	Speece Lewis Engineers	Lincoln	NE	USA			X		X
Intern Program (UNL)	City of Omaha Public Works Department	Omaha	NE	USA			X		X
Research Program and Workforce Development	Smart Work Zone Development Initiative	Ames	IA	USA				X	
Scholars Program	Southern University and A & M College	Baton-Rouge	LA	USA					X
Research Program and Workforce Development	Tencate Geosynthetics	Olathe	KS	USA				X	
Scholars Program	Tennessee State University	Nashville	TN	USA					X
Scholars Program	Texas A&M University	College Station	TX	USA					X
Research Program and Workforce Development	The National Advanced Driving Simulator at UI	Iowa City	IA	USA				X	
Scholars Program	The National GEM Consortium	Alexandria	VA	USA					X
Research Program and Workforce Development	The School of Library and Information Sciences (UI)	Iowa City	IA	USA				X	
Roads, Rails and Race Cars After-School Program	Tim Voss, Nebraska Department of	Lincoln	NE	USA		X			
Roads, Rails and Race Cars After-School Program	Tracey Webb, Nebraska Safety Council/RRRC guest speaker	Lincoln	NE	USA		X			
Research Program and Workforce Development	UI Dept. of Civil & Environmental Engineering	Iowa City	IA	USA				X	
Research Program and Workforce Development	UI Dept. of Mechanical and Industrial Engineering	Iowa City	IA	USA				X	
Research Program and Workforce Development	UI School of Urban & Regional Planning	Iowa City	IA	USA				X	
Research Program and Workforce Development	Union Pacific Railroad	Omaha	NE	USA				X	
Roads, Rails and Race Cars	Calvert Elementary School	Lincoln	NE	USA		X			
Roads, Rails and Race Cars	Hartley Elementary School	Lincoln	NE	USA		X			
Roads, Rails and Race Cars	Goodrich Middle School	Lincoln	NE	USA		X			
Roads, Rails and Race Cars	Lincoln High School	Lincoln	NE	USA		X			
Roads, Rails and Race Cars	Boone Middle School	Boone	IA	USA		X			
Roads, Rails and Race Cars	Jefferson Middle School	Madison	WI	USA		X			
Research Program and Workforce Development	University of Kansas	Lawrence	KS	USA				X	
Scholars Program	University of Maryland-Eastern Shore	Princess Anne	MD	USA					X

Scholars Program	University of Minnesota	Minneapolis	MO	USA					X
Scholars Program	University of Nebraska-Durham School of Architectural Engineering and Construction	Omaha	NE	USA					X
Scholars Program	University of Texas-Arlington	Arlington	TX	USA					X
Research Program and Workforce Development	UNL Bureau of Business Research	Lincoln	NE	USA				X	
Research Program and Workforce Development	UNL Dept. of Civil Engineering	Lincoln	NE	USA				X	
Roads, Rails and Race Cars After-School Program	Wally Mason, Lincoln Public Schools/RRRC guest speaker	Lincoln	NE	USA		X			
Research Program and Workforce Development	University of Iowa Public Policy Center	Iowa City	IA	USA				X	
Research Program and Workforce Development	University of Iowa Department of Psychology	Iowa City	IA	USA				X	
Research Program and Workforce Development	Center For Computer Aided Design	Iowa City	IA	USA				X	

The Mid-America Transportation Center works with numerous individuals at each of the organizations listed above. To contact individuals at any of the organizations, please email Laviania Thandayithabani at [lthanday@unl.edu](mailto:lthanday@unl.edu).

#### Have other collaborators or contacts been involved?

MATC's research activities are highly multi-disciplinary, featuring 89 faculty members from various disciplines including, but not limited to, chemistry, economics, civil engineering, mechanical engineering, computer science, and electrical engineering. The Principle Investigators (PIs) and Co-Principle Investigators (Co-PIs) for MATC's research portfolio are listed below:

First Name	Last Name	Title	University	Department
John	Anderson	Professor	University of Nebraska-Lincoln	Economics
Justice	Appiah	Post-Doctoral Research Associate	University of Nebraska-Lincoln	Civil Engineering
Jeremy	Ashlock	Assistant Professor	Iowa State University	Institute for Transportation
Caroline	Bennett	Associate Professor	University of Kansas	Civil, Environmental, and Architectural Engineering
Anna	Rakoczy	Post-Doctoral Research Associate and Part-Time Lecturer	University of Nebraska	Civil Engineering
Henry	Brown	Research Engineer	University of Missouri	Civil and Environmental Engineering
Michael	Hempel	Associate Director- Advanced Telecommunications Engineering Laboratory	University of Nebraska	Computer and Electronics Engineering Department
Keith	Knapp	Local Technical Assistance Program Director	Iowa State University	Institute for Transportation
Larry	Rilett	Director of UNL MATC and Distinguished Professor	University of Nebraska	Civil Engineering
Mustaque	Hossain	Munger Professor and Associate Director of MATC	Kansas State University	Civil Engineering
Robert	Stokes	Professor, Interim Dept. Head, Director of the University Transportation Center	Kansas State University	Civil Engineering
Shashi	Nambisan	Director of the Center for Transportation Research and Education, Professor	Iowa State University	Civil, Construction, and Environmental Engineering
Thomas	Mulinazzi	Professor and Retention Advisor	University of Kansas	Civil, Environmental & Architectural Engineering
Paul	Hanley	Associate Professor	University of Iowa	Civil and Environmental Engineering, Urban and Regional Planning
Eric	Fitzsimmer	Post-Doctoral Researcher	University of Kansas	Transportation Research Institute
Sue	Chrysler	Director of Research, National Advanced Driving Simulator	University of Iowa	Public Policy Center

Cheng	Wu	Professor	Missouri University of Science and Technology	Electrical & Computer Engineering
Ruwen	Qin	Assistant Professor	Missouri University of Science and Technology	Engineering Management and Systems Engineering
Abhijit	Gosavi	Assistant Professor	Missouri University of Science and Technology	Engineering Management and Systems Engineering
Genda	Chen	Professor	Missouri University of Science & Technology	Civil, Architectural, & Environmental Engineering
Sunanda	Dissanayake	Associate Professor	Kansas State University	Civil Engineering
Praveen	Edara	Assistant Professor	University of Missouri	Civil & Environmental Engineering
Ronald	Faller	Assistant Director & Research Assistant Professor	University of Nebraska-Lincoln	Nebraska Transportation Center, Midwest Roadside Safety Facility
Konstantina (Nadia)	Gkritza	Assistant Professor	Iowa State University	Civil Engineering, Institute for Transportation
Thomas	Glavinich	Associate Professor	University of Kansas	Civil, Environmental, & Architectural Engineering
Shauna	Hallmark	Transportation Engineer & Professor	Iowa State University	Institute for Transportation
Jie	Han	Professor	University of Kansas	Civil, Environmental, & Architectural Engineering
Zachary	Hans	Research Engineer	Iowa State University	Institute for Transportation
Neal	Hawkins	Director, Center for Transportation Research & Education (CTRE)	Iowa State University	Institute for Transportation
Yefei	He	Associate Research Scientist/Engineer	University of Iowa	National Advanced Driving Simulator
Haowei	Hsieh	Assistant Professor	University of Iowa	School of Library & Information Science
Aemal	Khattak	Associate Professor	University of Nebraska-Lincoln	Civil Engineering
Kenneth	Klabunde	Professor of Chemistry	Kansas State University	Chemistry
Karla	Lechtenberg	Research Associate Engineer	University of Nebraska-Lincoln	Nebraska Transportation Center, Midwest Roadside Safety Facility
Hosin	Lee	Professor	University of Iowa	Public Policy Center & Civil & Environmental Engineering
Suzanna	Long	Assistant Professor	Missouri University of Science & Technology	Engineering Management & Systems Engineering
Ronaldo	Luna	Professor	Missouri University of Science & Technology	Civil Engineering
Adolfo	Matamoros	Associate Professor	University of Kansas	Civil, Environmental, & Architectural Engineering
Miwa	Matsuo	Assistant Professor	University of Iowa	Urban & Regional Planning
George	Morcous	Associate Professor	University of Nebraska-Lincoln	Durham School of Architectural Engineering & Construction
Charles	Nemmers	Program Director of Transportation Infrastructure Center & Research	University of Missouri	Civil & Environmental Engineering
Wilfrid	Nixon	Professor	University of Iowa	Civil & Environmental Engineering
Andrzej	Nowak	Professor of Engineering	University of Nebraska-Lincoln	Civil Engineering
Robert	Parsons	Professor	University of Kansas	Civil, Environmental, & Architectural Engineering
Brent	Phares	Associate Director, Bridge Engineering Center	Iowa State University	Institute for Transportation
Albert	Ratner	Assistant Professor	University of Iowa	Mechanical & Industrial Engineering
John	Reid	Professor	University of Nebraska-Lincoln	Mechanical & Materials Engineering Department
Kyle	Riding	Assistant Professor	Kansas State University	Civil Engineering

Stan	Rolfe	Distinguished Professor	University of Kansas	Civil, Environmental, & Architectural Engineering
Steven	Schrock	Assistant Professor	University of Kansas	Civil, Environmental, & Architectural Engineering
Chris	Schwarz	Associate Research Engineer	University of Iowa	National Advanced Driving Simulator
Jennifer	Shane	Director for the Construction, Materials, & Technology Center	Iowa State University	Institute for Transportation (InTrans)
Hamid	Sharif	Professor	University of Nebraska-Lincoln	Computer & Electronics Engineering
Anuj	Sharma	Assistant Professor	University of Nebraska-Lincoln	Civil Engineering
John	Stansbury	Associate Professor	University of Nebraska-Lincoln	Civil Engineering
Carlos	Sun	Associate Professor	University of Missouri	Civil & Environmental Engineering
Geb	Thomas	Associate Professor	University of Iowa	Mechanical & Industrial Engineering
Eric	Thompson	Associate Professor & Director	University of Nebraska-Lincoln	Economics & Bureau of Business Research
Curt	Elmore	Associate Professor of Geological Engineering	Missouri University of Science & Technology	Geological Engineering
David	Jeong	Associate Professor	Iowa State University	Civil, Construction and Environmental Engineering
Dawn	Marshall	Staff Research Assistant	University of Iowa	Cognitive Systems Engineering
Dincer	Konur	Assistant Professor	Missouri University of Science & Technology	Engineering Management & Systems Engineering
Doug	Gransberg	Donald F. and Sharon A. Greenwood Professor	Iowa State University	Civil, Construction, and Environmental Engineering
Hayder	Rasheed	Professor	Kansas State University	Structural Engineering
Hongyi	Cai	Assistant Professor	University of Kansas	Civil, Environmental, and Architectural Engineering
J. Toby	Mordkoff	Associate Professor	University of Iowa	Psychology
Jing	Dong	Assistant Professor	Iowa State University	Civil, Construction, and Environmental Engineering
John	Myers	Assistant Professor	Missouri University of Science & Technology	Civil Engineering
Joseph	Turner	Professor	University of Nebraska-Lincoln	Mechanical and Materials Engineering
Maria	Szerszen	Associate Professor	University of Nebraska-Lincoln	Civil Engineering
Massoum	Moussavi	Associate Professor	University of Nebraska-Lincoln	Civil Engineering
Phuong	Nguyen-Hoang	Assistant Professor	University of Iowa	School of Urban and Regional Planning
Ryan	Yeung	Assistant Professor	State University of New York College at Brockport	Public Administration
Salam	Rahmatalla	Associate Professor	University of Iowa	Civil and Environmental Engineering
Scott	Rosenbaugh	Research Associate Engineer	University of Nebraska-Lincoln	Midwest Roadside Safety
Simon	Laflamme	Assistant Professor	Iowa State University	Civil, Construction, and Environmental Engineering
Stefan	Bossmann	Professor	Kansas State University	Chemistry
Yao-Jan	Wu	Assistant Professor	University of Arizona	Civil Engineering and Engineering Mechanics
Yelda	Turkan	Assistant Professor	Iowa State University	Civil, Construction and Environmental Engineering
Ying	Huang	Assistant Professor	North Dakota State University	Civil and Environmental Engineering
Yong-Rak	Kim	Associate Professor	University of Nebraska-Lincoln	Civil Engineering
Christopher	Tuan	Professor	University of Nebraska-Lincoln	Civil Engineering
Glenn	Washer	Associate Professor	University of Missouri	Civil & Environmental Engineering
Chris	Williams	Professor	Iowa State University	Civil, Construction & Environmental Engineering

Brent	Rosenblad	Associate Professor	University of Missouri	Civil and Environmental Engineering Department
Chris	Albrecht	Transportation Research Specialist	Iowa State University	Civil Engineering
Zhaozheng	Yin	Assistant Professor	Missouri University of Science & Technology	Computer Science
Tian	Zhang	Professor	University of Nebraska-Lincoln	Civil Engineering
Reza	Zoughi	Professor	Missouri University of Science & Technology	Electrical & Computer Engineering

#### 4. IMPACT

##### **What is the impact on the development of the principal discipline(s) of the program?**

Activities conducted during the current reporting period are expected to have an impact upon the transportation engineering discipline in the future. The results from a number of research projects have been developed into courses for the public that will shape future knowledge of specific transportation-related technologies.

##### **What is the impact on other disciplines?**

Many of MATC's educational activity outputs offer an interdisciplinary experience in which students, faculty, and staff from various institutions may interact and gain professional networking opportunities with transportation sector leaders. These activities increase channels of communication between participants in the workforce and individuals from many academic fields while facilitating a more interconnected body of future transportation professionals and creating a highly responsive and skilled next generation within the field.

##### **What is the impact on the development of transportation workforce development?**

A number of educational and technology transfer activities utilize MATC-sponsored research to develop the transportation workforce.

##### **What is the impact on physical, institutional, and information resources at the university or other partner institutions?**

There is currently nothing new to report regarding MATC's impact on physical, institutional, and information resources at the university or other partner institutions.

##### **What is the impact on technology transfer?**

MATC research projects at all campuses will be disseminated in the form of instructional courses and direct implementation. Additionally, researchers are currently cultivating partnerships that will enable successful technology transfer in the future.

##### **What is the impact on society beyond science and technology?**

We anticipate that K-12 students participating in the after-school programs and summer institute program will significantly benefit from their experiences. The interdisciplinary projects completed during program activities bolsters students' conceptual and practical skills in mathematics, science, and technology. By the time many students reach high school, they have formed ideas about their academic

competence in STEM subjects, often deciding that those subjects are not for them. Involvement in the Roads, Rails and Race Cars club encourages students to reconfigure their expectations of math and science as well as extends their interest beyond classroom experiences.

#### 5. CHANGES/PROBLEMS

There are no changes or problems to report.

#### 6. SPECIAL REPORTING REQUIREMENTS

There is nothing to report.