

Program Progress Performance Report for University Transportation Centers



- **Federal Agency and Organization Element to which Report is Submitted**
United States Department of Transportation, Office of the Assistant Secretary for Research and Technology
- **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**
March 23, 2017
- **DUNS and EIN Numbers**
DUNS: 55-545-6995
EIN: 47-0049123
- **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**
January 31, 2017
- **Report Term or Frequency (annual, semi-annual, quarterly, other)**
Semi-annual - Final
- **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	Complete	100%
Applicable Slides, Handouts, Videos, Podcasts, etc., Posted/Linked on MATC Website	Complete	100%
Final Reports Due & All Research Projects Complete	Complete	100%
Leadership Activities		
Coordination with Region 7 UTC Directors	Complete	100%
Educational Activities		
Grad/Undergrad MATC Course Development & Implementation	Complete	100%
MATC Supported Certificate Programs in Transportation	Complete	100%
MATC Undergraduate Summer Internship Program (Summers 2012 - 2016)	Complete	100%
MATC Transportation Scholars Program: Graduate Seminar Course	Complete	100%
MATC Transportation Scholars Conference	Complete	100%
MATC/CUTC Student of the Year Program - Annually @ TRB	Complete	100%
MATC Summer Institute (Summers 2012 & 2013)	Complete	100%
MATC After-School Program (Summers 2012 & 2013)	Complete	100%
MATC Support of "GO/Vamos!" Online K-12 Publication	Complete	100%
MATC Transportation Student Chapter (ITE/ASCE/Etc.) related activities	Complete	100%
Underrepresented Student MATC Summer Intern Program	Complete	100%
MATC Scholars Program for Underrepresented Students (October 2012)	Complete	100%
Technology Transfer Activities		
MATC Supported Specialty Conferences, Workshops, and Short Courses	Complete	100%
Mid-Continent Research Symposium: August 15-16, 2013	Complete	100%
LTAP Regional Meeting - MATC Workshop: September 2013	Complete	100%
MATC Website Information Dissemination	Complete	100%
MATC Social Media Sites Information Dissemination	Complete	100%
US DOT RITA: Reporting		
Posting Directory of Key Center Personnel	Complete	100%
Posting Research Project Descriptions	Complete	100%
UTC Program Progress Performance Reports (Quarterly)	Complete	100%
Federal Financial Reports (Quarterly)	Complete	100%
Annual Performance Indicators Report	Complete	100%

What was accomplished under these goals?

All MATC-planned activities were completed. Several of the education and outreach activities will continue in the new UTC award that began December 15, 2016.

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

As indicated in the table above, there were multiple opportunities for training and professional development offered throughout the five years of the award.

Opportunities for contact hours with participants during the period of July 1, 2016 – January 31, 2017 included the Roads, Rails and Racecars After-School Program, the MATC 2016 Scholars Program and other MATC professional development activities. Summaries of these activities are provided below.

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

MATC continued to support the preparation and implementation efforts of the RRRC engineering after-school club for elementary and middle school students from August, 2016 to January, 2017.

2016-2017 Academic Year Programming:

The fall semester portion of the 2016-2017 academic year of RRRC was implemented at five (5) sites from August through December: Culler Middle School, Lefler Middle School, Goodrich Middle School, Mickle Middle School, and Maxey Elementary School. All of these sites are located in Lincoln, NE. Each site offered the club one day per week. The spring semester portion of the 2016-2017 academic year of RRRC was implemented at six (6) sites, beginning January 2017. In addition to Culler Middle School, Lefler Middle School, Goodrich Middle School, Mickle Middle School, RRRC was expanded to Dawes Middle School and Park Middle School, both located in Lincoln NE. Park Middle School will not be included in this report, because the club began in February, 2017. Finally, due to low enrollment numbers, RRRC was not offered at Maxey Elementary School for spring 2017.

For the fall semester, RRRC at Culler Middle School was offered on Wednesdays from 3:10 p.m. to 4:00 p.m., beginning on August 31st, 2016, and ending on December 7th, 2016. A total of fourteen (14) implementation dates were completed during the fall iteration, with the total attendance being 153 by 41 students. The typical weekly participation was approximately 11 students. Topics covered included: Introduction to Transportation Systems, with a penny boat activity; Introduction to Civil Engineering, with an activity on building straw bridges; Introduction to Structural Engineering, with an activity on building arch bridges out of sugar cubes; Structural Engineering pt. 2, with an activity on building marshmallow towers; Introduction to Mechanical Engineering, with an activity on building edible cars; an end of quarter celebration that included ice cream sundaes and a paper airplane flying contest; Designing for Disasters—Earthquakes, with an activity involving building a tower that can withstand a simulated earthquake; Designing for Disasters—Tsunamis, which included an activity of building stilts that can support a built structure as well as withstand a simulated flood; Designing for Disasters—Earthquakes pt. 2; with an activity on building bridges that can withstand a simulated earthquake; Designing for Disasters—Oil Spills, which included an experiment on testing which material out of a given selection can absorb the greatest amount of oil in a simulated oil spill; Designing for Disasters—

Personal Safety, which included an activity for designing a “helmet” for an egg; Designing for Disasters—Floods, which included an activity on building dams to withstand a simulated flood; and an end of quarter celebration which included a review of all the lessons and activities and a pizza party. For the spring semester, RRRC at Culler Middle School was offered on Wednesdays from 3:10 p.m. to 4:00 p.m., beginning on January 25th, 2017 and will end on April 26, 2017. A total of one (1) implementation date was completed before January 31st, with total attendance being seventeen (17) by seventeen (17) students. The topic covered Environmental Sustainability with an activity on paper recycling.

RRRC at Goodrich Middle School was offered on Thursdays from 3:15 p.m. to 4:15 p.m., beginning on September 1st, 2016, and ending on December 8th, 2016. A total of thirteen (13) implementation dates were completed during the fall iteration, with the total attendance being 164 by 41 students. The typical weekly participation was approximately 13 students. Topics covered included: Introduction to Transportation Systems, with a penny boat activity; Introduction to Civil Engineering, with an activity on building straw bridges; Introduction to Structural Engineering, with an activity on building arch bridges out of sugar cubes; Structural Engineering pt. 2, with an activity on building marshmallow towers; Introduction to Mechanical Engineering, with an activity on building edible cars; an end of quarter celebration that included ice cream sundaes and a paper airplane flying contest; Designing for Disasters—Earthquakes, with an activity involving building a tower that can withstand a simulated earthquake; Designing for Disasters—Tsunamis, which included an activity of building stilts that can support a built structure as well as withstand a simulated flood; Designing for Disasters—Earthquakes pt. 2; with an activity on building bridges that can withstand a simulated earthquake; Designing for Disasters—Oil Spills, which included an experiment on testing which material out of a given selection can absorb the greatest amount of oil in a simulated oil spill; Designing for Disasters—Personal Safety, which included an activity for designing a “helmet” for an egg; Designing for Disasters—Floods, which included an activity on building dams to withstand a simulated flood; and an end of quarter celebration which included a review of all the lessons and activities and a pizza party. For the spring semester, RRRC at Goodrich Middle School was offered on Thursdays from 3:15 p.m. to 4:15 p.m., beginning on January 19th, 2017 and will end on April 27, 2017. A total of two (2) implementation dates were completed before January 31st, with a total attendance being seventeen (30) by eighteen (18) students. Topics covered included Environmental Sustainability 1 with an activity on paper tables; and Environmental Sustainability 2, with an activity on paper recycling.

RRRC at Lefler Middle School was offered on Mondays from 3:10 p.m. - 4:00 p.m., beginning on September 12th, 2016 and ending on December 5th, 2016. A total of ten (10) implementation dates were completed during the fall iteration, with the total attendance being 96, by 26 students. The typical weekly participation was approximately 9 students. Topics covered included: Introduction to Civil Engineering, with an activity on building straw bridges; Introduction to Structural Engineering, with an activity on building marshmallow towers; Introduction to Mechanical Engineering, with an activity on building edible cars; an end of quarter celebration that included ice cream sundaes and a paper airplane flying contest; Designing for Disasters—Earthquakes, with an activity involving building a tower that can withstand a simulated earthquake; Designing for Disasters—Earthquakes pt. 2; with an activity on building bridges that can withstand a simulated earthquake; Designing for Disasters—Oil Spills, which included an experiment on testing which material out of a given selection can absorb the greatest amount of oil in a simulated oil spill; Designing for Disasters—Personal Safety, which included an activity for designing a “helmet” for an egg; Designing for Disasters—Floods, which included an activity on

building dams to withstand a simulated flood; and an end of quarter celebration which included a review of all the lessons and activities and a pizza party. For the spring semester, RRRC at Lefler Middle School was offered on Mondays from 3:10 p.m. - 4:00 p.m., beginning on January 23th, 2017 and will end on April 25, 2017. A total of two (2) implementation dates were completed before January 31st, with total attendance being thirteen (13) by ten (10) students. Topics covered included Environmental Sustainability 1 with an activity on paper tables; and Environmental Sustainability 2, with an activity on paper recycling.

RRRC at Maxey Elementary School was offered on Mondays from 3:30 p.m. - 4:30 p.m., beginning on October 3rd, 2016 and ending on November 14th, 2016. A total of six (6) implementation dates were completed during the fall iteration, with the total attendance being 40, by 7 students. The typical weekly participation was approximately 7 students. Topics covered included: Introduction to Transportation Systems, with a penny boat activity; Introduction to Civil Engineering, with an activity on building straw bridges; Introduction to Structural Engineering, with an activity on building arch bridges out of sugar cubes; Structural Engineering pt. 2, with an activity on building marshmallow towers; Introduction to Mechanical Engineering, with an activity on building edible cars; an end of quarter celebration that included ice cream sundaes and a paper airplane flying contest; and an end of quarter celebration which included a review of all the lessons and activities, a pizza party, and a paper-airplane flying contest.

RRRC at Mickle Middle School was offered on Wednesdays from 3:10 p.m. to 4:00 p.m., beginning on September 7th, 2016, and ending on December 7th, 2016. A total of nine (9) implementation dates were completed during the fall iteration, with the total attendance being 56 by 16 students. The typical weekly participation was approximately 6 students. Topics covered included: Introduction to Transportation Systems, with a penny boat activity; Introduction to Civil Engineering, with an activity on building straw bridges; Introduction to Structural Engineering, with an activity on building marshmallow towers; Introduction to Mechanical Engineering, with an activity on building edible cars; Designing for Disasters—Earthquakes, with an activity involving building a tower that can withstand a simulated earthquake; Designing for Disasters—Earthquakes pt. 2; with an activity on building bridges that can withstand a simulated earthquake; Designing for Disasters—Personal Safety, which included an activity for designing a “helmet” for an egg; Designing for Disasters—Floods, which included an activity on building dams to withstand a simulated flood; and an end of quarter celebration which included a review of all the lessons and activities and a pizza party. For the spring semester, RRRC at Mickle Middle School was offered on Wednesdays from 3:10 p.m. - 4:00 p.m., beginning on January 18th, 2017 and will end on April 25, 2017. A total of two (2) implementation dates were completed before January 31st, with total attendance being twenty (20) by fourteen (14) students. Topics covered included Environmental Sustainability 1 with an activity on paper tables; and Environmental Sustainability 2, with an activity on paper recycling.

RRRC began at Dawes Middle School on January 10th, 2017. For the spring semester, RRRC at Dawes was offered on Tuesdays from 3:30 p.m. - 4:30 p.m. and will end on April 24, 2017. A total of three (3) implementation dates were completed before January 31st, with total attendance being nineteen (19) by ten (10) students. Topics covered included: Introduction to Transportation Systems, with a penny boat activity; Introduction to Civil Engineering, with an activity on building straw bridges; and Introduction to Structural Engineering, with an activity on building marshmallow towers.

Additional RRRC tasks completed during the Fall 2016 semester included club promotion and recruitment at Culler Middle School and Maxey Elementary School, developing a curriculum schedule for Quarters 1 and 2, attending tri-weekly meetings with mentors to develop strategies and track progress of the lessons and activities, and communication with mentors, teachers, CLC staff, and NTC staff.

Additional RRRC tasks completed during the spring 2017 semester included club promotion and recruitment at Culler Middle School, developing a curriculum schedule for Quarter 3, daily meetings with mentors to develop strategies and track progress of the lessons and activities, and communication with mentors, teachers, CLC staff, and NTC staff.

For Fall 2016 the after-school club employed: one (1) new educational programs coordinator, one (1) graduate assistant focused on maintaining attendance records, updating social media, and maintaining the club's photo archive, five (5) returning teachers, and five (5) new undergraduate 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 alternate working with the club throughout the 2016-2017 school year. During this report period, the first teacher worked from September to October, and the second teacher worked from October to January. For spring 2017, two (2) undergraduate engineering student mentors returned, and four (4) more were hired. In total, fifty-two (52) program days were completed during the fall iteration, with the total attendance being 509 by 131 individual students. For spring, a total of ten (10) program days were completed, with the total attendance being ninety-nine (99) by sixty-nine (69) students.

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

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

MATC 2016 Scholars Program

The MATC Scholars Program is a three-day conference designed to promote graduate study among underrepresented groups and women in STEM fields, which is accomplished through targeted seminars, workshops, and networking opportunities. Seven (7) undergraduate students were selected from Native American Colleges and University and other partner institutions from across the country to attend the 2016 program, which took place October 27 – 30, 2016. Faculty, students, and staff convened on October 27, 2016 for informational sessions covering the graduate school experience and advice on how to succeed. During the rest of the program, sessions continued, students toured campus, and heard success stories from graduate and post-graduate students of similar backgrounds. At the end of the conference, students and faculty participated in post-surveys that showed that students would recommend the program to other students.

More information about the 2016 Scholars Program can be found at:

<http://matc.unl.edu/education/scholars-program2016.php>

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.

Name	Destination	Conference Name	Dates
Yashu Kang	Washington	TRB	1/7/2017
Larry Rilett	Washington	TRB	1/7/2017
Li Zhao	Washington	TRB	1/7/2017
Huiyuan Liu	Washington	TRB	1/7/2017
Ernest OA Tufuor	Washington	TRB	1/7/2017
Jianan Zhou	Washington	TRB	1/7/2017
Lavania Siva	Washington	TRB	1/7/2017
Lavania Siva	North Platte	MATC Intern Field Trip	1/8/2017
Chris LeFrois	Omaha	MATC Scholars Program	10/26/2016
Bret Evert	Omaha	MATC Scholars Program	10/26/2016
Kimberly Soares	Lincoln	MATC Scholars Program	10/26/2016
Erik Ryan Peaches	Lincoln	MATC Scholars Program	10/26/2016
Kimonee Machekeo Burke	Lincoln	MATC Scholars Program	10/26/2016
Kianna Mist Burke	Lincoln	MATC Scholars Program	10/26/2016
Otakuye Conroyben	Lincoln	MATC Scholars Program	10/26/2016
Nancy B Jackson	Lincoln	MATC Scholars Program	10/26/2016
Stanley Atcitty	Lincoln	MATC Scholars Program	10/26/2016

How have the results been disseminated?

Electronic distribution and social media were used to disseminate MATC activities. PowerPoint presentations have also been given.

MATC connected with approximately 82 newspaper, TV, and radio organizations located in all eight partner institutions and across the nation, and developed a press release template to announce respective project results and highlights for each location. The goal was to develop a product that easily translated into a story for media personnel to quickly and effectively report the activities in which MATC was engaged so that MATC and US DOT OST-R were visible and accurately represented to the public.

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

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

Currently, MATC maintains 5 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 July 1st, 2016 through January 31st, 2017. By understanding and capitalizing this knowledge, we are able to make our homepage engaging, relevant, and resourceful to our viewers.

Visits: 14,205	Page views: 21,106	Pages per visit: 1.49	Average visit duration: 00:45
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Slideshare

Our total views have increased by 4,451 since our last metric. This increase has expanded our global reach; the top 5 countries that view our presentations are: the United States, Russian Federation, India, 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/>

Lifetime Views: 12,830	Downloads: 49	Social Shares: 2
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Facebook

The Mid-America Transportation Center (MATC) Facebook page 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: 3,130	Likes: 17	Reach: 11,919	Total Countries: 25	Total Languages: 14
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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: <http://twitter.ie/MATCNews>. The highlighted numbers for MATC’s Twitter activity can be seen below.

New Followers: 6	Tweet Impressions: 1,059	Profile Visits: 146	Tweets: 4
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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. This site will feature one participating Region 7 university per quarter.

New Videos: 12	Views: 2,740	Minutes Watched: 5,688
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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	http://trid.trb.org/view/2012/P/1265564
Iowa State University	Evaluation of Thermal Integrity Profiling for Deep Foundations	Ashlock, Jeremy	http://trid.trb.org/view/2012/P/1250790
Iowa State University	Statewide Heavy Truck Crash Assessment	Hans, Zachary	http://trid.trb.org/view/2012/P/1265566
Iowa State University	Safety and Mobility Impacts of Winter Weather - Phase 3	Hans, Zachary	http://trid.trb.org/view/2012/P/1265563
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	http://trid.trb.org/view/2012/P/1265562
Iowa State University	Sustainable Asphalt Pavements Using Bio-Binders from Bio-Fuel Waste	Williams, R. Christopher	http://trid.trb.org/view/2012/P/1265565
Iowa State University	Systemic Safety Improvement Risk Factor Evaluation and Countermeasure Summary	Knapp, Keith	http://trid.trb.org/view/2013/P/1265561
Iowa State University	Evaluation of Air-Coupled Impact-Echo Test Method	Ashlock, Jeremy	http://trid.trb.org/view/2013/P/1257006
Iowa State University	Study of the Regulatory Issues Affecting Truck Freight Movement in Region VII	Dong, Jing	http://trid.trb.org/view/2013/P/1257005

Iowa State University	Development of Railroad Highway Grade Crossing Closure Rating Formula	Hans, Zachary	http://trid.trb.org/view/2013/P/1324546
Iowa State University	Digital Documentation of Element Condition for Bridge Evaluation	Turkan, Yelda	http://trid.trb.org/view/2013/P/1257003
Iowa State University	Modeling Multi-Modal Freight Transportation Network Performance Under Disruptions	Dong, Jing	http://trid.trb.org/view/2013/P/1257002
Iowa State University	Framework for Advanced Daily Work Report System	Jeong, David	http://trid.trb.org/view/2013/P/1257001
Kansas State University	Sustainable Asphalt Pavements Using Bio-Binders from Bio-Fuel Waste	Klabunde, Ken	http://trid.trb.org/view/2012/P/1305391
Kansas State University	Evaluation of Bonding Agent Application on Concrete Patch Performance	Riding, Kyle	http://trid.trb.org/view/2012/P/1251902
Kansas State University	New Generation Bio-Binder Formulation	Bossmann, Stefan H.	http://trid.trb.org/view/2013/P/1286098
Kansas State University	Reducing Work Zone Duration, Comparison of Nighttime vs. Daytime Crashes and Effectiveness of Lighting in Highway Work Zones	Dissanayake, Sunanda	http://trid.trb.org/view/2013/P/1286097
Kansas State University	KDOT Column Expert: Ultimate Shear Capacity of Circular Columns using the Modified Compression Field Theory	Rasheed, Hayder A.	http://trid.trb.org/view/2013/P/1286096
Kansas State University	Evaluation of Low-Cost Intersection Countermeasures to Reduce Red Light Running Violations	Dissanayake, Sunanda	http://trid.trb.org/view/2012/P/1251903
Missouri University of Science & Technology	Unbonded Concrete Pavement/Overlay Monitoring	Chen, Genda	http://trid.trb.org/view/2013/P/1256992
Missouri University of Science & Technology	Quantifying Economic Benefits for Rail Infrastructure Projects	Long, Suzanna	http://trid.trb.org/view/2013/P/1256990
Missouri University of Science & Technology	Develop a UAV Platform for Automated Bridge Inspection	Yin, Zhaozheng	http://trid.trb.org/view/2013/P/1256989
Missouri University of Science & Technology	Freeway Travel Time Estimation using Existing Fixed Traffic Sensors – A Computer-Vision-Based Vehicle Matching Approach	Yin, Zhaozheng	http://trid.trb.org/view/2013/P/1256988

Missouri University of Science & Technology	Evaluation of Pile Load Tests for Use in Missouri LRFD Guidelines	Luna, Ronaldo	http://trid.trb.org/view/2012/P/1251897
Missouri University of Science & Technology	Splice Performance Evaluation of Enamel-Coated Rebar for Structural Safety	Chen, Genda	http://trid.trb.org/view/2012/P/1251896
Missouri University of Science & Technology	Work Zone Safety: Physical and Behavioral Barriers in Accident Prevention	Long, Suzanna	http://trid.trb.org/view/2012/P/1331590
Missouri University of Science & Technology	Longitudinal Useful Life Analysis and Replacement Strategies for LED Traffic Indicators	Long, Suzanna	http://trid.trb.org/view/2012/P/1331591
Missouri University of Science & Technology	Nondestructive Evaluation of Mechanically Stabilized Earth Walls with Frequency-Modulated Continuous-Wave (FM-CW) Radar	Chen, Genda	http://trid.trb.org/view/2012/P/1254337
Missouri University of Science & Technology	Quadcopter with Heterogeneous Sensors for Autonomous Bridge Inspection	Yin, Zhaozheng	http://trid.trb.org/view/2012/P/1251894
University of Iowa	Advanced Decision Modeling for Real Time Variable Tolling – Data Collection Trial	Hanley, Paul	http://trid.trb.org/view/2013/P/1257011
University of Iowa	Older Driver Acceptance of New Driving Safety Technology	Marshall, Dawn	http://trid.trb.org/view/2013/P/1257010
University of Iowa	Distracted Driving due to Visual Working Memory Load	Mordkoff, J. Toby	http://trid.trb.org/view/2013/P/1257009
University of Iowa	Dollars for Lives: The Effects of Capital Outlay and Maintenance	Nguyen-Hoang, Phuong	http://trid.trb.org/view/2013/P/1257008
University of Iowa	Integration of Human-in-the-Loop Driving Simulator with Microscopic Traffic Simulation	Chrysler, Susan	http://trid.trb.org/view/2012/P/1251918
University of Iowa	Developing and Refining Sustainability Tools for Winter Maintenance Operations	Nixon, Wilfrid	http://trid.trb.org/view/2012/P/1251916
University of Iowa	Mobility and Accessibility of Hispanics in Small Town and Rural Areas	Matsuo, Miwa	http://trid.trb.org/view/2012/P/1251915
University of Iowa	Towards Autonomous Vehicles	Schwarz, Chris	http://trid.trb.org/view.aspx?id=1251917

University of Iowa	Investigation of Synergistic Effects of Warm Mix Asphalt and High Fractionated Reclaimed Asphalt Pavement for Safe, Environmentally Sustainable Highway	Lee, Hosin	http://trid.trb.org/view/2012/P/1251914
University of Iowa	Improving Fire Safety: Modifying Droplet Behavior to Minimize Ignition	Ratner, Albert	http://trid.trb.org/view/2012/P/1251911
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	http://trid.trb.org/view/2013/P/1257007
University of Kansas	Repair of Skewed Steel Bridge Girders Damaged by Distortion-Induced Fatigue	Bennett, Caroline	http://trid.trb.org/view/2013/P/1257000
University of Kansas	Evaluation of an Electronic Safety Perimeter System for Kansas Temporary Work Zones	Mulinazz, Thomas	http://trid.trb.org/view/2013/P/1256999
University of Kansas	Methods for Field Identification of Fouled Railroad Ballast	Parsons, Robert	http://trid.trb.org/view/2013/P/1256998
University of Kansas	Evaluation of the Intersection Confirmation Light System to Reduce Red Light Running Violations at Freeway Ramp Intersections	Schrock, Steven	http://trid.trb.org/view/2013/P/1256997
University of Kansas	Geosynthetic Reinforcement to Protect Underground Pipes against Damage from Construction and Traffic	Han, Jie	http://trid.trb.org/view/2012/P/1251906
University of Kansas	Evaluation of Low-Cost Intersection Countermeasures to Reduce Red Light Running Violations	Schrock, Steven	http://trid.trb.org/view/2012/P/1251903
University of Kansas	Repair of Floorbeam-to-Stringer Connections Affected by Distortion-Induced Fatigue	Bennett, Caroline	http://trid.trb.org/view/2012/P/1251904
University of Kansas	Properties of Fouled Recycled Ballast	Parsons, Robert	http://trid.trb.org/view/2012/P/1251905
University of Missouri	Development of the Fourth Edition of The Manual for Identification, Analysis and Correction of High-crash Locations (HAL)	Sun, Carlos	http://trid.trb.org/view/2012/P/1251898
University of Missouri	Ground-based Interferometric Radar for Rockfall Hazard Monitoring	Rosenblad, Brent	http://trid.trb.org/view/2013/P/1256995
University of Missouri	Highway Safety Manual Applied in States II - Freeway/Software	Sun, Carlos	http://trid.trb.org/view/2013/P/1286094

University of Missouri	Nondestructive Evaluation Technologies for Bridge Inspection	Washer, Glenn	http://trid.trb.org/view/2013/P/1256993
University of Missouri	Investigation of Alternate Work Zone Merging Sign Configurations	Edara, Praveen	http://trid.trb.org/view/2013/M/1279838
University of Missouri	Highway Safety Manual Applied in States: Calibration and Training	Sun, Carlos	http://trid.trb.org/view/2012/P/1251901
University of Missouri	Evaluation of Alternative Geometric Designs on Highway Corridors - Case Study of J Turns	Edara, Praveen	http://trid.trb.org/view/2012/P/1251900
University of Missouri	Evaluation of Work Zone Software Programs: Phase 2 - Validation Using Field Data	Edara, Praveen	http://trid.trb.org/view/2012/P/1251899
University of Missouri	Nondestructive Evaluation Technologies for Bridge Inspection	Washer, Glenn	http://trid.trb.org/view/2012/P/1252087
University of Missouri	Effectiveness of Work Zone Intelligent Transportation Systems	Edara, Praveen	http://trid.trb.org/view/2012/P/1252086
University of Missouri	Analysis of Driver Merging	Edara, Praveen	http://trid.trb.org/view/2012/P/1252085
University of Nebraska-Lincoln	Optimizing Concrete Deck Removal in Concrete I-Girder Bridges	Morcous, George	http://trid.trb.org/view/2012/P/1251928
University of Nebraska-Lincoln	Safety Performance Evaluation of Posts for use in a New Short Radius Guardrail for Intersecting Roadways	Reid, John	http://trid.trb.org/view/2012/P/1251923
University of Nebraska-Lincoln	Investigation, Dynamic Testing, and Evaluation of Guardrail Posts for Use in Transitions between Temporary Concrete Barrier and Guardrail	Lechtenberg, Karla	http://trid.trb.org/view/2012/P/1251922
University of Nebraska-Lincoln	Investigation of Freight Data and Operations in Nebraska	Khattak, Aemal	http://trid.trb.org/view/2013/P/1256987
University of Nebraska-Lincoln	Impact of Truck Loading on Design and Analysis of Asphaltic Pavement Structures — Phase IV	Kim, Yong-Rak	http://trid.trb.org/view/2013/P/1257016
University of Nebraska-Lincoln	Testing and Evaluation of Guardrail Posts Installed in Mow Strips	Rosenbaugh, Scott	http://trid.trb.org/view/2013/P/1257015
University of Nebraska-Lincoln	Diffuse Ultrasound for Damage Detection in Concrete Railroad Ties	Turner, Joseph	http://trid.trb.org/view/2013/P/1257014

University of Nebraska-Lincoln	Effects of Sediments on BMPs for Highway Runoff Control	Zhang, Tian	http://trid.trb.org/view/2013/P/1257013
University of Nebraska-Lincoln	Protocol For Evaluation of Existing Bridges	Szerszen, Maria	http://trid.trb.org/view/2013/P/1257012
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	http://trid.trb.org/view/2012/P/1251929
University of Nebraska-Lincoln	Smart City Lincoln: Safe Intersections and Intelligent Enforcement	Sharma, Anuj	http://trid.trb.org/view/2012/P/1251919
University of Nebraska-Lincoln	Development of a Guide for Prioritization of Railway Bridges for Repair and Replacement	Rakoczy, Anna	http://trid.trb.org/view/2012/P/1251927
University of Nebraska-Lincoln	Distracted Highway Users at Highway-rail Grade Crossings	Khattak, Aemal	http://trid.trb.org/view/2012/P/1251926
University of Nebraska-Lincoln	Alternative Funding Mechanisms for State Transportation Systems in Predominantly Rural States	Anderson, John	http://trid.trb.org/view/2012/P/1251925
University of Nebraska-Lincoln	Dilemma Zone Protection on High-Speed Arterials	Naik, Bhaven	http://trid.trb.org/view/2012/P/1251924
University of Nebraska-Lincoln	Development of Shaker Test as a Standardized Test Protocol for Deicing Chemicals Evaluation	Tuan, Christopher	http://trid.trb.org/view/2012/P/1251921
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	http://trid.trb.org/view/2012/P/1251920

3. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What other organizations have been involved as partners?

During the current reporting period, the Mid-America Transportation Center 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, Shelly Cutsor, at mcutsor2@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 worked with numerous individuals at each of the organizations listed above. To contact individuals at any of the organizations, please email Shelly Cutsor at mcutsor2@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	Fitzsimmor	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 offered an interdisciplinary experience in which students, faculty, and staff from various institutions interacted and gained professional networking opportunities with transportation sector leaders. These activities increased 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 utilized 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 were disseminated in the form of instructional courses and direct implementation. Additionally, researchers cultivated partnerships that will enable successful technology transfer in the future.

What is the impact on society beyond science and technology?

We anticipate that all K-12 students who participated in the after-school programs and Summer Institute program will significantly benefit from their experiences. The interdisciplinary projects completed during program activities bolstered students' conceptual and practical skills in science, technology, engineering, and mathematics. 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 encouraged students to reconfigure their expectations of math and science and extend 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.