Program Progress Performance Report
University Transportation Center - ATLAS Center

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Project Title:	University Transportation Center The Center for Advancing Transportation Leadership and Safety (ATLAS Center) *University of Michigan (U-M) Transportation Research Institute (UMTRI) (Lead Institution)* *Texas A&M Transportation Institute (TTI), a member of the Texas A&M University System (TAMUS)*
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Submitting Official:	Same as above
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Signature:	

1. ACCOMPLISHMENTS

1.1 What are the major goals of the program?

The ATLAS Center has five major goals:

- Sponsor/conduct high-quality, high-impact research.
- Engage in effective education and workforce development activities.
- Disseminate new traffic safety knowledge and information to a wide range of stakeholders through technology transfer efforts.
- Provide state, national, and international traffic safety leadership.
- Develop and maintain traffic safety collaborations.

1.2 What was accomplished under these goals?

1.2.1 Sponsor/conduct high-quality, high-impact research

The ATLAS Center conducts three programs of sponsored research. The first is the ***Research Excellence Program***. Under this program, the ATLAS Center partners (UMTRI and TTI) embrace the power of competition to produce the highest quality research results. Each institution uses a competitive selection process, whereby investigator-initiated research projects are reviewed and evaluated by experts. Projects are selected for sponsorship based on these reviews and the priorities of each ATLAS Center institution.

The ATLAS Center at UMTRI plans to initiate a third round of competitive projects under the Research Excellence Program starting in April. Sponsorship for these projects will begin September 1, 2015 and will continue for 8 months. The funded projects (detailed information and abstracts) will be posted on our website www.ATLAS-Center.org. Collectively, at UMTRI and TTI, 11 projects were funded from the previous two rounds of the Research Excellence Program; nine of these projects are ongoing and two have been completed. Full details on these projects can be found on the ATLAS Center website.

The second research program conducted by the ATLAS Center is the ***Cooperative Research Program***. A key strength of the ATLAS Center is the synergy created through collaboration between the Center's two institutional partners. Each year the Center supports one or more joint research projects that, at a minimum, include collaborative research conducted at UMTRI and TTI. The first project was awarded in January 2014 and is still underway. Also, to support a project awarded through the ATLAS Center at TTI Research Program, a small-scale UMTRI-based project is being sponsored through the ATLAS Center at UMTRI's Cooperative Research Program and is ongoing.

The third ATLAS Center research program is the ***Strategic Initiatives Program***. This program is designed to be flexible enough to take advantage of strategic and/or timely research opportunities that might not otherwise fall under the timeframes of the ATLAS Center's other research programs. During this period, results were disseminated from a completed project under the direction of TTI's Melisa Finley that was funded under this program. Specifically, final reporting requirements were submitted, distributed, and posted on our ATLAS Center website www.ATLAS-Center.org. Melissa Finley and the ATLAS Center Information Coordinator, Robert Sweet, compiled a one-page briefing available on the ATLAS Center website. ATLAS leadership is now working to identify the next Strategic Initiatives program research project.

1.2.2 Engage in effective education and workforce development activities

The ATLAS Center conducts several activities that promote education and workforce development activities in traffic safety each year. The following describes the activities conducted during this reporting period.

Summer Internship Program: The ATLAS Center at TTI is conducting a 10 week summer internship program at Texas A&M University. The program provides undergraduate students with the unique opportunity to work closely with a research scientist or engineer in a structured and intensive research environment. Student interests are matched with appropriate researchers at TTI and Texas A&M, and the program covers room and board and includes a stipend. The program coincides and is coordinated with other summer intern programs at TAMU funded by the National Science Foundation, providing interns with an opportunity to interact with students in other disciplines and participate in university wide seminars, tours, poster sessions and other events for interns. A call for interns was sent out to several universities and was posted to the ATLAS website. To date, one student from Texas A&M, one student from the University of Arkansas, one student from the Polytechnic University of Puerto Rico, and three students from the University of Michigan have been accepted into the program which begins in June, 2015.

Student of the Year: The ATLAS Center supports an annual Student of the Year Program to recognize student achievement. Students are selected through a competitive process and given awards. The ATLAS Center at TTI recognized Student of the Year Nathan Schultz with a stipend of $1,000 and support to travel to this year's CUTC and TRB meetings held in Washington D.C. Nathan is a Student Technician at the Roadside Safety and Physical Security Division of TTI. He is currently a senior level undergraduate student in Civil Engineering at TAMU. Mr. Schultz's research responsibilities include assisting with the ATLAS sponsored research project Heavy Truck Crashworthiness Occupant Protection that is being collaboratively conducted by TTI and UMTRI. On the basis of his proven research accomplishments while maintaining an outstanding academic record, Nathan was chosen to represent the ATLAS UTC and receive this award. The two runners-up were Adrian Contreras and George Gillette. Mr. Contreras is a graduate student at TAMU and is working towards an M.E. in Transportation Engineering with a focus on design. Mr. Gillette is enrolled as a sophomore in TAMU's B.S. program in Civil Engineering. He reduces data for TTI as a student worker. He is both an Engineering Honors and University Honors student.

Professional Education Program: The ATLAS Center at UMTRI supports the education of traffic safety professionals through various media, including on-site education, lectures and talks, conferences and seminars, and web-based media to reach a wide variety of transportation professionals. During this reporting period, the following educational presentations or panel participations were at least partially sponsored by the Center:

- Eby, D.W. and Molnar, L.J. (March, 2015). Transportation Needs and Preferences of Older Drivers in Michigan: Implications for Practitioners. *2015 ADED Midwest Chapter Meeting.* Ypsilanti, MI.
- Eby, D.W. (March, 2015). Vehicle Design and Advanced Technologies: Keeping Older Adults Driving Safely. *Michigan Traffic Safety Summit.* East Lansing, MI.
- Molnar, L.J. (March, 2015). Self-Regulation of Driving by Older Adults: What Do We Know. *Michigan Traffic Safety Summit.* East Lansing, MI.
- Molnar, L.J. (October, 2014). Center for Advancing Transportation Leadership and Safety (ATLAS Center) Overview. *Meeting for visit from S. Jack Hu, Interim Vice*

President for Research. University of Michigan Transportation Research Institute. Ann Arbor, MI.

- Molnar, L.J. (October, 2014). Panel member. *Driving: Staying Safe and Knowing When to Stop-Issues for Aging Series.* Jewish Family Services of Washtenaw County, Ann Arbor, MI.
- St. Louis, R.M. (March, 2015). Informal Caregivers, Older Adults and Transportation. Safely. *Michigan Traffic Safety Summit.* East Lansing, MI.

Student Participation in Research: Each research project awarded by the ATLAS Center through the Research Excellence program requires the participation of at least one student or post-doctoral fellow. Six students from TTI and three students from U-M are participating in ATLAS Center research projects. Collectively these students represent a broad range of academic departments including Biostatistics, Civil Engineering, Mechanical Engineering, Public Health, and Structural Engineering.

The Center also provides resources for undergraduate students. During this reporting period, the ATLAS Center sponsored three presentations for an upper-level undergraduate civil engineering course at U-M—*Introduction to Transportation Engineering*.

In addition to its formal research grant programs, the ATLAS Center provides resources for graduate students who are conducting transportation safety research for a thesis or dissertation. During this reporting period, the ATLAS Center at U-M provided office space, administrative support, and mentoring to a visiting student and doctoral candidate in industrial engineering, Liang Zhang, from Tsinghua University, Beijing, China. Her research has been in modeling drivers' car following and lane changing behaviors. She came to the ATLAS Center and UMTRI in October, 2014 to learn about and participate in research on maintaining safe mobility in an aging society. She will be continuing at UMTRI through this summer.

The ATLAS Center also provided funding for summer intern student, Ryan Stone, to travel to TRB's Annual Meeting in Washington DC in January to present a poster titled *Public Perceptions of Variable Speed Limits.* Mr. Stone, an Earth and Environmental Sciences undergraduate student at the University of Michigan, participated in the ATLAS Center's Summer Intern Program, working last summer with TAMU's Dr. Beverly Kuhn and Dr. Justin Yates.

STEM Outreach Program: This program is designed to facilitate UMTRI's ongoing outreach to primary and secondary school students to foster student interest in the STEM fields and encourage the pursuit of STEM careers. During this reporting period, ATLAS Center presented an overview and provided tour guide support for the Toyota Educational Initiative in STEAM (Science, Technology, Engineering, Arts and Mathematics) innovation who brought a group of Ann Arbor Public School District middle and high school students, and their educational partners from Singapore, to UMTRI.

ATLAS Symposium Series Program: Each year, the ATLAS Center plans to sponsor two faculty at each institution to travel to the partner institution to meet with researchers and make a research presentation. The intent of this program is to support collaboration between UMTRI and TTI, to assist in the development of high quality joint research projects, and facilitate the exchange of scholarly information.

During this reporting period (November of 2014), Dr. Chiara Silvestri-Dobrovolny, Associate Research Scientist in Roadside Safety at TTI visited UMTRI. She was hosted by Dr. Dan Blower, Associate Research Scientist in UMTRI's Vehicle Safety Analytics Group. Dr. Silvestri-Dobrovolny presented a luncheon symposium titled: *Roadside Safety: Design and Full-Scale Crash Testing of Roadside Barriers to Enhance Safety–Applications and Results.* Dr. Shan Bao, Associate Research Scientist in UMTRI's Human Factors group travelled to TTI in November, 2014. She was hosted by Robert Wunderlich. In addition to meeting with other researchers, Dr. Bao presented at a luncheon symposia *Naturalistic Driving Data Analysis: From Data to the Truth.*

Dr. Carol Flannagan, Associate Research Scientist and ATLAS researcher in UMTRI's Center for the Management of Information for Safe and Sustainable Transportation (CMISST) group gave a symposium presentation and met with researchers during her visit to TTI hosted by Mr. Wunderlich in January, 2015. Her talk was titled: *Big Data and Transportation Research at the University of Michigan*.

During the next reporting period, Dr. Mike Manser from TTI will be hosted by Dr. David W. Eby for a visit to UMTRI and will be a speaker at the ATLAS Center sponsored UMTRI 50th Anniversary Automated Vehicle Seminar Series in conjunction with ATLAS Center's Symposium.

Workforce Development and Education: The ATLAS Center has established a partnership with the Workforce Intelligence Network (WIN), a Southeast Michigan collaborative effort between nine community colleges, seven workforce boards and economic development partners. Its mission is to create a comprehensive and cohesive workforce development system in Southeast Michigan that provides employers with the talent they need for success. As part of the partnership, WIN is engaged in several research projects that will result in the following deliverables: a list of occupations related to transportation safety sub-categorized by occupational family (e.g., transportation infrastructure, construction, transportation manufacturing, transportation testing); a briefing document about the occupational groups with details on employment in Michigan and the region compared to the US and how employment has changed over time, a profile of the typical educational attainment, wages, skills, etc. of workers in each sub-category, and information on jobs that will be trending in the near future; a memo highlighting further opportunities for programming partnerships among institutions and between employers and educational institutions; a contact list of employers and educational institutions in the green transportation space; and a briefing document outlining training and educational needs for incumbent and future workers related to transportation safety.

*Student Travel Assistance Program***:** A portion of the ATLAS Center at TTI's funds is allocated to deserving graduate or undergraduate students to support travel to attend the Texas Traffic Safety Conference and TexITE meetings. Because the spring meeting of the Texas District of the Institute of Transportation Engineers is in College Station (home to TAMU), the

students will not need travel support to attend. Instead, we plan to support the students in attending the fall meeting in San Antonio in September, 2015.

*Advancement Via Individual Determination (AVID) Program Support***:** AVID is an in-school college readiness program for elementary through high school students, targeting underserved students (predominantly minority and economically disadvantaged) who fall in the academic middle, for college eligibility and success. The ATLAS Center at TTI incorporates transportation safety elements into existing TTI interactions with the AVID program in College Station Independent School District schools. This year's programs are scheduled for May 1, 2015 – Cypress Grove Intermediate School, and May 8, 2015 - Oakwood Intermediate School.

Summer Transportation Institute (STI) Program Support: STI program support entails two main outreach/educational efforts with Prairie View A&M University. The first is called the Undergraduate Transportation Experience**.** This effort provides one or possibly two undergraduate students at Prairie View A&M University the opportunity to conduct transportation-related research in an effort to encourage them to pursue an advanced degree in transportation studies. The second effort is called K-12 Outreach. For this effort, staff at PVAMU will reach out to high school students attending summer programs in the Roy G. Perry College of engineering at Prairie View A&M University to educate them about the transportation industry and it's every increasing energy demands and impact on the regional air quality. This effort will be incorporated into PVAMU's existing outreach programs in our center for Energy and Environmental Sustainability (CEES).

1.2.3 Disseminate new traffic safety knowledge and information to a wide range of stakeholders through technology transfer efforts

The following describes ATLAS Center technology transfer activities during this reporting period.

Knowledge Translation Program (UMTRI): This program is intended to facilitate the translation of knowledge and intellectual properties into practical applications for the marketplace to benefit the University, the community, and the general public. The program will coordinate its efforts with the U-M's Office of Technology Transfer to provide researchers with resources to help them successfully navigate the process required for technology transfer, product development, and technology commercialization.

In February, 2015, ATLAS Center staff met with the senior licensing manager of U-M Technology Transfer office and discussed the organizational responsibilities for getting University technology into the marketplace, the types of intellectual property rights, and how to encourage and educate our ATLAS Center researchers on the invention, and patent filing process. We will be distributing information to each of our researchers in the form of a brochure in the next quarter.

Website: The ATLAS Center website continues to update the information required by the UTC program. During this reporting period, ATLAS-Center.org, was updated on a regular basis. Analysis of the website use from Google Analytics showed that during this reporting period the website had more than 7,000 page-views from more than 1,800 users. Since the start of ATLAS Center the website has had more than 17,000 page-views from more than 4,200 users.

Newsletter. The ATLAS Express is currently sent electronically to more than 4,300 recipients, with new recipients continually added to our subscriber list.Two newsletters were produced in this reporting period and all newsletters can be found on the ATLAS center website.

Facebook Page: The ATLAS Center Facebook page continues to help disseminate our research results and keep stakeholders informed about Center activities. We regularly post to this site and are actively seeking more people to "like" our page.

Promotional Materials: During this reporting period, we have continued to use our banner at our symposium talks and researcher features. Our three-fold brochures are being distributed at conferences and seminars along with the lapel pins. Our safety flashlights with our website engraved have been given to participants in ATLAS Center sponsored programs.

Publication Support: The ATLAS Center encourages publication of research results in peer-reviewed journals or esteemed academic publications targeted at transportation and safety professionals by providing support to develop and/or publish articles. During this reporting period, we began planning for a special issue of a journal on a topic of interest to ATLAS Center investigators and partners.

Dissemination Plan for Research Results: Each ATLAS Center research project includes a detailed dissemination/technology transfer plan. Once the current round of research projects are completed, the ATLAS Center leadership will ensure that these plans are followed so that results can be widely disseminated.

ATLAS Center Annual Conference: A joint annual ATLAS Center and TTI conference is held each year. TTI's Center for Transportation Safety, in cooperation with the ATLAS Center and TxDOT will hold the 2015 Traffic Safety Conference at the Omni Corpus Christi June 8-10, 2015. This year's theme will be "Things that Work" maintaining a common goal of significant and permanent reductions in the deaths and injuries on our streets and highways. ATLAS Center, TTI, and UMTRI researchers will be presenting and leading sessions at the conference. Also, ATLAS Center will be sponsoring a student poster session where nine TAMU students and a U-M undergraduate and a visiting PhD student will present safety related research findings.

Community Outreach and Education Program: ATLAS Center Education Coordinator, Ms. Renée St. Louis, is a Certified Child Passenger Safety Technician and uses her skills and training to provide education to parents and caregivers of young motor vehicle passengers. During this reporting period, the ATLAS Center continued to support Ms. St. Louis's efforts to deliver individualized hands-on instruction to community members participating in monthly child safety seat inspection stations, expectant parent classes held at local businesses, and other community safety events.

Conference Presentations and Publications: During this reporting period, ATLAS Center members gave several presentations. Lists of these presentations are provided in section 2 of this report.

1.2.4 Provide state, national, and international traffic safety leadership

ATLAS Center faculty and staff are recognized state, national, and international leaders in traffic safety. This reputation for quality leadership is demonstrated by ATLAS Center members serving in leadership positions, on state/national/international committees, and involvement in

the scientific peer-review process. The following lists the leadership positions, committees, and peer-review activities of ATLAS Center members:

Leadership Positions:

- Daniel Blower: Chairman, Michigan Truck Safety Commission.
- Lisa Buckley: Assistant Director, Teaching and Education Core, U-M Injury Center.
- Dennis Christiansen: Board of Directors, ITS America.
- Chiara Silvestri-Dobrovolny: TTI/Trinity New Researcher Award – 2014.
- David W. Eby: Head, Behavioral Sciences Group, University of Michigan Transportation Research Institute.
- Thomas K. Ferris: Faculty Advisor, Texas A&M student chapter of Alpha Pi Mu, Industrial Engineering Honors Society.
- Melisa Finley: Texas District of Institute of Transportation Engineers (TexITE) – Immediate Past President – Board of Directors; Transportation Research Board of the National Academies – Chair – Work Zone Positive Protection Subcommittee; Member, Temporary Traffic Control Committee for the American Traffic Safety Services Association (ATSSA).
- Kay Fitzpatrick: Chair, Operational Effects of Geometrics Design Committee, TRB; President, Brazos Valley Institute of Transportation Engineers; Co-Chair, 2003, 2007, 2012, and 2017 Urban Street Symposiums; Chair, Local Arrangement Committee for the Texas District of Institute of Transportation Engineers (TexITE) 2015 Summer Meeting; Immediate Past-President, 2015 Brazos Valley ITE.
- Carol Flannagan: Co-Chair, SAE Data Analysis Committee of the TRB Data Analysis Committee.
- Paul A. Green: Executive Council Member of Board of Directors, Human Factors and Ergonomics Society; Member of Board of Directors, Board of Certification in Professional Ergonomics; Founder, Driver Performance Measures Committee, SAE DRIPOD; Chair, Automotive User Interface 2016 Conference.
- Dominque Lord: Associate Professor, Zachry Department of Civil Engineering, Texas A&M University Holder, Zachry Development Professor I; Division Head, Transportation and Materials.
- Michael Manser: Chairperson, Human Factors in Road Vehicle Automation Joint Subcommittee of the TRB.
- Lisa J. Molnar: Secretary, Safe Mobility for Older Adults Committee of the TRB; Panel Leader, When Seniors Transition From Driving TRB Conference session; Member, International Program Board, First International Conference on Human Aspects of IT for the Aged Population.
- Catherine Seay-Ostrowski: President-Elect, Michigan Society of Research Administrators International (MI-SRA); Co-Chair, Office of Research Future Business Operations Planning Group, The University of Michigan.
- Anuj K. Pradhan: Program Chair, Surface Transportation Technical Group, Human Factors and Ergonomics Society; Secretary, Joint Subcommittee on Human Factors in Road Vehicle Automation (AND10(3)); Session Co-Chair, Symposium on Cognitive Training and Driving, HFES, Chicago, IL;
- Peter F. Sweatman: Chair, ATLAS Advisory Board; Chair, Intelligent Transportation Society (ITS) of America Leadership Circle; Chair, National Research Council Planning Committee, European Commission-Transportation Research Board and U.S. Department of Transportation; Chair, Planning Committee, Symposium on Road and Vehicle Connectivity and Automation; Member, Board of Directors, 22nd ITS World Congress Bordeaux, France; Chair, External Review, University of California-Davis,

Institute of Transportation Studies; Member, U-M Energy Institute Executive (UMEI) Committee; Member, External Advisory Committee, U-M Global Challenges for a Third Century Proposal, Phase I and II.

- Melissa Tooley: Vice Chairperson at Large, The American Road and Transportation Builders Association (ARTBA); Chair, ARTBA, Women Leaders in Transportation Design and Construction Council; ENO Foundation – Member – Board of Regents.

Committees:

- Daniel Blower: Member, Panel on Research Methodologies and Statistical Approaches to Understanding Driver Fatigue Factors in Motor Carrier Safety and Driver Health, National Academy of Sciences.
- Chiara Silvestri-Dobrolvolny: Member, Roadside Safety Design Committee, TRB; Friend, Occupant Safety Committee, TRB.
- David W. Eby: Member, Occupant Protection Committee (ANB45) of the TRB; Member, Safe Mobility for Older Adults Committee (ANB60) of the TRB; Member, Michigan Senior Mobility Work Group; Member and Former Convener, Transportation and Aging Interest Group, Gerontological Society of America; UMTRI Internal Review Committee.
- Thomas Ferris: Activities Coordinator, Houston Human Factors and Ergonomics Society; Search Committee Member, Industrial and Systems Engineering Department; Undergraduate Committee Member, Industrial and Systems Engineering Department; Member, Human Factors and Ergonomics Society (HFES) Health Care Technical Group; Member, HFES Cognitive Engineering and Decision Making Technical Group; Member, HFES Education Technical Group; Member, Institute of Industrial Engineers (IIE); Member, HFES Perception & Performance Technical Group; Member, HFES Surface Transportation Technical Group.
- Melisa Finley: Member, Temporary Traffic Control Committee, American Traffic Safety Services Association (ATSSA); Member, Standing Committee on Traffic Control Devices; Member, Traffic Engineering Council, Institute of Transportation Engineers (ITE); Member, Transportation Education Council, Institute of Transportation Engineers (ITE); Work Zone Traffic Control Committee, Member, TRB.
- Kay Fitzpatrick: Friend, Geometric Design Committee, TRB; Friend, Managed Lane Committee, TRB; Friend, Pedestrians Committee, TRB; Friend, Highway Safety Performance Committee, TRB.
- Carol Flannagan: Member, Data Analysis Committee, TRB.
- Srinivas Geedipally: Young Member, Motorcycles and Mopeds Committee, TRB.
- Paul A. Green: Member, Society of Automotive Engineers (SAE) Safety and Human Factors Committee; Member, SAE J2364/J2365 Subcommittee; Member, SAE Process for Testing of In-Vehicle icons Task Force; Member, SAE IOS TC22 SC13 USAG, Ergonomics Applicable to Road; Member, SAE Visual Behavior and Metrics Committee; Member SAE, Definitions Measures Related to DV Behavior TF; Member, SAE, Controls and Displays Standards Committee; Member, SAE, SCAG-TSB Standards in the Classroom Advisory Group; Member, User Experience Professionals Association; Member, Society for Information Display; Member, Program Committee, Automotive User Interface 2015 Conference; Member, University of Michigan Advisory Committee, Center for Healthcare Engineering and Patient Safety; Fellow, Institute of Ergonomics and Human Factors; Member.
- Joan Hudson: Friend, Transportation Research Board, Bicycle Committee; Friend, Transportation Research Board, Pedestrian Committee**;** Member, City of Austin Vision Zero Task Force.

- Lidia P. Kostyniuk: Member, Gerontological Society; Member, American Society of Civil Engineers (ASCE); Member, Sigma Xi; Fellow, ITE; Member, Transportation and Aging Interest Group, Gerontological Society of America.
- Dominique Lord: Member, Safety Data, Analysis and Evaluation Committee, TRB; Member, Highway Safety Performance Committee, TRB.
- John Maddox: Member of Steering Committee, TRB UTC Spotlight Conference on Connected and Automated Vehicles; Member of Organizing Committee and Host, Automated Vehicle Symposium 2015, Ann Arbor; Member of Organizing Committee, Conference on Transportation, Economics, Energy, and the Environment (TE3).
- Michael Manser: Member, Vehicle User Characteristics Committee, TRB.
- Lisa J. Molnar: Member and Former Convener, Transportation and Aging Interest Group, Gerontological Society of America; Member, Driver Medical Review Subcommittee, TRB; Member, Education and Training (ABG20) Committee, TRB; Member, Michigan Senior Mobility Work Group.
- Catherine Seay-Ostrowski: Member, Research Administration Advisory Council Executive Committee, The University of Michigan; Member, Research Administration Advisory Committee Training Subcommittee, University of Michigan.
- Anuj K. Pradhan: Member, Technical Activities Standing Committee (ANB30) Operator Education and Regulation, TRB; Member, Technical Activities Standing Committee (AND30) Simulation and Vehicle and Operator Performance Measurement, TRB; Member, Subcommittee on Young Drivers (ANB30(1)), TRB; Member, Joint Subcommittee on Human Factors in Road Vehicle Automation (AND10(3)), TRB; Planning Committee Member, 2015 TRB workshop on Simulation and Naturalistic Driving; Planning Committee Member, 2015 TRB panel session on Young Drivers and Learning Skills; Planning Committee Member, 2015 Automated Vehicle Symposium, Ann Arbor.
- Jonathan Rupp: Member, AAAM Abbreviated Injury Scale Content Committee.
- Praprut Songchitruksa: Friend, Safety Data, Analysis, and Evaluation Committee TRB; Friend, Statistical Methodology and Statistical Computer Software in Transportation Research Committee, TRB; Friend, Traffic Signal Systems Committee, TRB.
- Peter F. Sweatman: Member, Together for Safer Roads Coalition; Member ubiMobility Review Team.
- Robert Sweet: Member, Information Services Committee, TRB; Member, Information Services Committee, Transportation Research Thesaurus Subcommittee, TRB; Member, Library and Information Science for Transportation Committee, TRB.
- Melissa S. Tooley: Member, Committee on the Role of Freight Transportation in Economic Competitiveness: The 8th University Transportation Center Spotlight Conference, TRB; Member, Transportation Education and Training Committee of the TRB.
- Robert C. Wunderlich: Member, Subcommittee on Global Road Safety, TRB; Member, Institute of Transportation Engineers Safety Council; Member, Technical Committee on Geometric Design, American Association of State Highway and Transportation Officials.
- Yunlong Zhang: Member, Standing Committee on Artificial Intelligence and Advanced Computing Applications, TRB.

Editorial Boards/Grant Review/Conference Review:

- Daniel Blower: Paper Reviewer, TRB.
- Lisa Buckley: Grant Reviewer, Auckland Medical Research Foundation; Editorial Board Member, *Journal of Safety Research*.
- Chiara Silvestri Dobrovolny: Paper Reviewer, TRB.

- David W. Eby: Associate Editor, *Accident Analysis & Prevention;* Editorial Board Member, *Journal of Safety Research*; Paper Reviewer, TRB; Abstract Reviewer, Gerontological Society of America Annual Conference.
- Tom Ferris: Editorial Board Member, *Human Factors*; Conference Reviewer, HFES 2015 International Symposium on Human Factors and Ergonomics in Health Care: Improving the Outcomes, Baltimore, MD; Conference Reviewer, Institute of Industrial Engineers (IIE) Industrial and Systems Engineering Research Conference, 2015, Nashville, TN.
- Kay Fitzpatrick: Paper Reviewer, TRB.
- Melisa Finley: Co-Chair paper reviews for the Joint Call for Papers related to Wrong Way Driving Incidents, Detection, and Countermeasures on Limited Access Highways and presentations for the 2015 TRB Annual Meeting, TRB.
- Srinivas Geedipally: Scientific Reviewer, Journal of the TRB, TRB; Scientific Conference Reviewer, International Conference of Road Safety and Simulation USA; Scientific Conference Reviewer, International SIIV Congress Conference, Italy.
- Paul Green: Reviewer, Driving Assessment Conference.
- Lidia P. Kostyniuk: Editorial Advisory Board, *Accident Analysis & Prevention*; Editorial Advisory Board, *Transportation*; Editorial Advisory Board, Journal of Safety Research; Grant Proposal Reviewer, Research Grants Council of Hong Kong; Reviewed papers for the Transportation Research Record: Journal of the TRB.
- Dominique Lord: Senior Associate Editor, *Analytic Methods in Accident Research*; Editorial Advisory Board, *Accident Analysis & Prevention;* Grant Reviewer, Fonds de recherché du Québec - Nature et technologies (Quebéc NSF); UTC Grant Reviewer, Pacific Northwest Transportation Consortium, University Transportation Center for Federal Region 9, UCCONNECT, and New England University Transportation Center.
- Michael Manser: Proceedings Reviewer, Human Factors and Ergonomics Annual Conference.
- Anuj K. Pradhan: Conference Reviewer, International Symposium on Human Factors in Drier Assessment, Training, and Vehicle Design; Conference Reviewer, Human Factors and Ergonomics Society Annual Conference; Conference Reviewer, TRB.
- Jonathan Rupp: Editorial Board Member, *Stapp Car Crash Journal;* Reviewer SAE Transactions, *Journal of Passenger Cars*; Reviewer, ASME Proceedings, *Journal of Biomechanical Engineering.*
- Praprut Songchitruksa: Editorial Board Member, International Journal of Information Technology Project Management; Conference Reviewer, IEEE Models and Technologies of Intelligent Transportation Systems (MT-ITS 2015); Reviewer, Transportation Research Record: Journal of the TRB.
- Robert C. Wunderlich: Abstract Reviewer for Transportation Safety papers, 1st International Conference on Transport and Health, University College London, England and the Transportation Public Health Link, London, England.

Ad-Hoc Reviews

ATLAS Center faculty are frequently asked to participate in the peer-review process by completing expert ad-hoc reviews of manuscripts submitted to trade journals. There are too many reviewed manuscripts to list individually.

1.2.5 Develop and maintain traffic safety collaborations

The ATLAS Center is actively seeking and establishing traffic safety collaborations. The following is a list of organizations for which the ATLAS Center has an existing collaboration or is working toward establishing a collaborative relationship:

- AAA Foundation for Traffic Safety
- Alamo Area Council of Governments
- Capital Metropolitan Transportation Authority, Dallas, Texas
- Centers for Disease Control and Prevention
- City of Austin, Texas
- Dallas Area Rapid Transit System
- East Carolina University
- Gerontological Society of America
- Lakehead University (Canada)
- Michigan Department of Transportation
- Monash University (Australia)
- North Texas Tollway Authority
- Please be Kind to Cyclists – Texas
- Precision Driving Research
- School of Public Health, Texas A&M University
- Southeastern Transportation Center, Knoxville, TN
- Southwest Research Institute
- Texas A&M University
- Texas Department of Public Safety
- Texas Department of State Health Services
- Texas Department of Transportation
- University of Connecticut, Department of Civil & Environmental Engineering
- University of Massachusetts, Boston
- University of Nevada, CATER
- University of Ottawa (Canada)
- University of Texas Health Science Center – San Antonio
- University of Texas Health Science Center, Center for Translational Injury Research, Hermann-Memorial Hospital, Houston, TX
- University of Toronto
- University of Utah Psychology
- USAA Insurance

1.3 How have the results been disseminated?

As discussed previously, the Center has a range of activities that we undertake to disseminate research results and to increase awareness of our activities. Because research projects are still in their early phases, there are no research results to disseminate. Once these projects are completed, the results will be disseminated through conference presentations, published articles, and interviews with news media. The Center activities are disseminated through a wide range of outlets including a website, a Facebook page, a newsletter, and presentations by Center leadership.

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

A number of activities are planned for the next reporting period that will facilitate accomplishing the goals of the ATLAS Center. These activities are:

- Conducting the Annual TTI Safety Conference and sponsor of student poster presentations.

- Collecting U-M and TTI quarterly project summaries and posting them on our website.
- Tracking and adding publications to our website.
- Developing and disseminating the next issue of the ATLAS Express newsletter.
- Collection and review of Final Research reporting to be distributed to national transportation libraries and OST-R, web briefs, and one page briefs -- all to be posted on ATLAS website.
- Hold our next ATLAS Center Symposium.
- Host and sponsor speakers for UMTRI's 50th Anniversary Automated Vehicle Seminar Series.
- 2015 Student Internship at TTI support and disseminating information on website and Facebook.
- Student Internship U-M presentation luncheon on their return.
- Research Excellence Program competition awards and beginning of research 8 month period.
- Continue presenting at conferences related to ATLAS Center's theme of integrated solutions for safety.

2. PRODUCTS

The ATLAS Center was established on October 1, 2013 and since that time we have placed considerable effort into hiring staff, working through cost-match funding issues, and establishing our various programs. As such, the creation of products from these efforts is necessarily relatively modest. We anticipate increases in our products as our programs become better established.

2.1. Publications, conference papers, and presentations

The following are lists of publications, conference papers, and presentations that were at least partially sponsored by the ATLAS Center:

2.1.1 Presentations:

- Bao, S. (2014). Naturalistic Driving Data Analysis: From Data to the Truth. *ATLAS Center Symposium Series, TTI.* College Station, TX.
- Bingham, Pradhan, et al (2014) Experimental Effects of Passenger Pressure and Norms on Simulated Risky Driving Among Teenage Males.*142nd APHA Annual Meeting and Exposition.* New Orleans, LA.
- Blower, D. (2015). Identifying the Riskiest Situations for Pedestrians. *Michigan Traffic Safety Summit.* Lansing, MI.
- Buckley, L. & Watson, B. (2014). Best practice in peer-led curriculum content: Informing an interactive program to improve passenger safety among high school seniors. *Australasian Road Safety Research, Policing and Education Conference*. Melbourne, Australia.
- Buckley, L., Chapman, R, Sheehan, M., Reveruzzi, B., Dingli, K. (2014). A randomized controlled trial of a program to reduce adolescent road-related medically-treated injuries. *American Public Health Association Annual Meeting.* New Orleans, LA.
- Brooks-Russell, A., Buckley, L., Pradhan, A.K., Shope, J.T. (each author providing individual presentations, listed in alphabetical order). Symposia. How do peer passengers influence teenagers' driving behaviors? *Society for the Advancement of Violence and Injury Research.* New Orleans, LA.

- Carter, P., Flanagan, C., Buckley, L.,Rupp, J., Cicchino, J. & Bingham, C.R. (2014). Motorcycle Crash Helmet Use and Injuries Following Repeal of Michigan's Motorcycle Helmet Law. *American Public Health Association Annual Meeting.* New Orleans, LA.
- Clark, H., Buckley, L., Bingham, C.R., Hu, F., Giordani, B., Monk, C., Pradhan, A.K. (2014). Risk Taking Behaviors and Prefrontal Cortex Activity of Male Adolescents in the Presence of Peer Passengers during Simulated Driving: An fNIRS Study. *University of Michigan Injury Center 1st Annual Symposium Poster Session.* Ann Arbor, MI.
- Eby, D.W., Molnar, L.J., & Kostyniuk, L.P. (2014). Feasibility, Health Impacts, and Perceptions of Lowering the BAC Standard in the US. *Closeout Meeting*. Motor Vehicle Injury Prevention Team, Division of Unintentional Injury Prevention, Centers for Disease Control and Prevention. Atlanta, Georgia.
- Eby, D.W. (2014). Driving and Early-Stage Dementia: An Instrumented Vehicle Study. *CAEE Seminar*. Civil, Architectural, and Environmental Engineering Department, Illinois Institute of Technology. Chicago, Illinois.
- Ferris, T.K. (2014). Designing to Support the Human Component in Healthcare Systems. Invited lecture for the *Healthcare Design Conference*. San Diego, CA.
- Ferris, T.K. (2014). Evaluating communication effectiveness and designing to support human-machine system performance in cognitively-challenging environments. Invited seminar for the Department of Industrial Engineering, Clemson University. Clemson, SC.
- Ferris, T.K. (2015). Supporting human information processing and performance in cognitively-challenging environments. *Texas A&M Department of Kinesiology Seminar.* College Station, TX.
- Ferris, T.K. (2015). Evaluating communication effectiveness and designing to support human-machine system performance in cognitively-challenging environments. *Research seminar sponsored by Texas A&M INFORMS Student Chapter.* College Station, TX.
- Ferris, T.K**.**, C. Yager, S. Dinakar, M. Sanagaram (2015). Emergency vehicle operator on-board device distractions. Invited webinar for the Transportation Safety Advancement Group (TSAG) of the Intelligent Transportation Society of America (ITSA). Webinar available for download at: http://www.itsa.org/events/webinarseries
- Ferris, T.K. (2015). Quantifying the effectiveness of displays in human-machine systems. Invited panelist for "Current Issues and Future Trends in Human-Systems Engineering Research". *Institute of Industrial Engineers (IIE) Industrial and Systems Engineering Research Conference (ISERC'15)*. Nashville, TN.
- Fitzpatrick, K. (2015). TCRP Report 175: Guidebook on Pedestrian Crossings of Public Transit Rail Services. *National Transportation Safety Board, Trains and Trespassing: Ending Tragic Encounters Conference*. Washington, DC.
- Fitzpatrick, K. (2015). Pedestrian Fatal Crashes on Freeways in Texas. *94th Annual TRB Conference*. Washington, DC.
- Fitzpatrick, K. (2015). Analysis of Injury Severity in Pedestrian Crashes Using Classification Regression Trees. *94th Annual TRB Conference*. Washington, DC.
- Fitzpatrick, K. (2015). Rapid-Flash Yellow Beacons Used with Pedestrian Crosswalks: Anticipated Changes Webinar. *Institute of Transportation Engineers Annual Meeting.* Seattle, WA.
- Flannagan, C. (2015). Motorcycle Crashes in Michigan After the Helmet-Law Change. *Lifesavers Conference*. Chicago, IL.
- Flannagan, C. (2015). Statewide Data Needs of the Future: How You Will Be Reporting Serious Injuries. *Lifesavers Conference*. Chicago, IL.
- Flannagan, C. (2015). Big Data and Transportation Research at the University of Michigan. *ATLAS Symposium Series, TTI.* College Station, TX.

- Geedipally, S. (2015). Traffic Safety: How Important is It? *Indian Institute of Technology*, Kharagpur, India.
- Green, P.A., H. Jeong, T. Kang (2014). Using an OpenDS Driving Simulator for Car Following: A First Attempt. *Proceedings of the 6th International Conference on Automotive User Interfaces and Interactive Vehicular Applications.* Seattle, WA.
- Imberger, K., A. Cavallo, I. Hughes, J. Hagston, L. Buckley, G. Spencer, B. Ariens, K. Montero (2014). The Year 11 Fit2Drive workshop – from evidence-based research to a new program. In *Australasian Road Safety Research, Policing and Education Conference.* Melbourne, Australia.
- Iragavarapu, V., S.H. Khazraee, D. Lord, and K. Fitzpatrick (2015) Pedestrian Fatal Crashes on Freeways in Texas*. 94th Annual TRB Conference.* Washington, D.C.
- Kostyniuk, L.P. (2015). ATLAS Center Research and Education Programs**.** *A Summit of University Transportation Centers for Safety.* Pittsburgh, PA.
- Maddox, J. (2015). Michigan Mobility Transformation Center Roadmap. *USDOT NHSTA and OST-R Meeting*. Washington, D.C.
- Maddox, J. (2015). Michigan Mobility Transformation Center Roadmap. *U.S. Congressional Members and Staff Meeting.* Washington, D.C.
- McDonald, Goodwin, Pradhan, Romoser, Williams. (2015). Review of Hazard Recognition Training Programs for Young Drivers. *94th Annual TRB Conference.* Washington, D.C.
- Mehta, R., T.K. Ferris (2015). Mental workload assessment methods. Invited webinar given for the *Abnormal Situation Management (ASM) Consortium*.
- Ouimet, A. Pradhan, Brooks-Russell, Ehsani, Berbiche, Simons-Morton. (2015). Systematic Review of Epidemiological Studies on Young Drivers' Crash Risk with Passengers: Final Results. *94th Annual TRB Conference.* Washington, D.C.
- Park B.-J., C. Lee, D. Lord, D-G. Kim. (2014). Finite Mixture Modeling Approach for Developing Crash Modification Factors in Highway Safety Analysis.*19th International Conference of Hong Kong Society for Transportation Studies*. Hong Kong, China.
- Pradhan, A., R. Bingham. (2015). Connected and Automated Vehicle Systems: State of the Art & Relevance for Teen Driver Research. *94th Annual TRB Conference*. Washington, D.C.
- Pradhan, A. (2015). Teen Drivers and Peer Passengers: Examining Prefrontal Cortex Activity using fNIRS and Driving Simulation. *SAVIR 2015 Conference*. New Orleans, LA.
- Rupp, J. (2014). The Biomechanics of Lower Extremity Injuries. *John W. Melvin Memorial Lecture Series: Stapp Car Crash Conference*. San Diego, CA.
- Silvestri-Dobrovolny, C. (2014). Roadside Safety: Design and Full-Scale Crash Testing of Roadside Barriers to Enhance Safety – Applications and Results. *ATLAS Center Symposium Series, UMTRI.* Ann Arbor, MI.
- Silvestri-Dobrovolny, C. (2015). Design and Full-Scale Crash Testing of Anchored Temporary Concrete Barrier and Its Transition System for Use on Asphalt Pavement. *94th TRB Annual Conference.* Washington, D.C.
- Silvestri-Dobrovolny, C. (2015). Finite Element Analysis Investigation of Stacked W-Beam Transition Design to Concrete Parapet for Use with 31-in. Guardrail Height. *Roadside Safety Design Poster Session, 94th TRB Annual Conference.* Washington, D.C.
- Songchitruksa, P. (2015). Assessment of Safety Performance Monitoring at Signalized Intersections Using Connected Vehicle Vehicle-to-Infrastructure Data. *94th TRB Annual Conference.* Washington, D.C.

- Stone, Ryan. (2015). Public Perceptions of Variable Speed Limits*. 94th TRB Annual Conference Poster Session.* Washington, D.C.
- Sweatman, P. (2014). Expectations for Future Mobility Systems. *2014 North America Open Meeting, BETA CAE Systems, S.A*. Plymouth, MI.
- Sweatman, P. (2014). Connected Vehicles, Automated Transportation and Their Infrastructure. *Economic Dinner Group.* Ann Arbor, MI.
- Sweatman, P. (2014). Plenary Panel Discussion and Keynote. *Austroads--Australasian Road Safety Conference.* Melbourne, Australia.
- Sweatman, P. (2015). Connected Infrastructure to Support Automated Driving. *94th Annual TRB Conference.* Washington, D.C.
- Sweatman, P. (2015). Transforming Transportation. *CARtalks Public Policy Forum. 94th Annual TRB Conference.* Washington, D.C.
- Sweatman, P. (2015). Future of the U.S. Automotive Industry. *Detroit Association of Business Economists.* Detroit, MI.
- Sweatman, P. (2015). Connected Vehicle Program. *Econolite Group Conference.* Anaheim, CA.
- Sweatman, P. (2015). Michigan Leadership in Future Mobility. *Kiwanis Club of Ann Arbor.* Ann Arbor, MI.
- Sweatman, P. (2015). Panel: The Internet of Things, Automation of a Cloud Discussion. *IT Security Entrepreneurs Forum (ITSEF).* Mountain View, CA.
- Sweatman, P. (2015). Testify. *Senate Committee on Commerce, Science, and Transportation.* Washington, D.C.
- Sweatman, P. (2015). Invited presentation on ITS and Connected Vehicles. *Southeast Michigan Council of Governments (SEMCOG).* Detroit, MI.
- Sweatman, P. (2015). Panel: An Exploration of Connected and Autonomous Vehicle Initiatives. *Telecommunications Industry Association's Workshop.* Concord, CA.
- Sweet, R. (2015). Effective Literature and Search Reviews: tools and Tricks for the Trade (panelist). *94th Annual TRB Conference. Washington, D.C*.
- Sweet, R. (2015). TRB Electronic Circular E-C194: Literature Searches and Literature Reviews for Transportation Research Projects. *94th Annual TRB Conference.* Washington, D.C.
- Vangala, P., D. Lord, S.R. Geedipally. (2015). An Application of the Negative Binomial-Generalized Exponential Model for Analyzing Traffic Crash Data with Excess Zeros. *94th TRB Annual Conference*. Washington, D.C.
- Wu, L., D. Lord, Y. Zou. (2015). Validation of CMFs Derived from Cross Sectional Studies Using Regression Models. *94th TRB Annual Conference*. Washington, D.C.
- Wunderlich, R. (2014). Safety Culture and the Engineer. *Brazos Valley Section of the Institute of Transportation Engineers.* College Station, TX.

2.1.2 Conference Papers:

Maddox, J. (2015). Intelligent Vehicles + Infrastructure to Address Transportation Problems - A Strategic Approach. ESV Conference and Proceedings.

2.1.3 Publications:

Carter, P. M., Flannagan, C. A., Bingham, C. R., Cunningham, R. M., & Rupp, J. D. (2015). Modeling the Injury Prevention Impact of Mandatory Alcohol Ignition Interlock Installation in All New US Vehicles. *American Journal of Public Health*, (0), e1-e8.

Wei, C., Becic, E., Edwards, D., Graving, J., & Manser, M. (2014). Task analysis of transit bus drivers' Left-turn maneuver: Potential countermeasures for the reduction of collisions with pedestrians. *Safety Science*, 68, 81-88.

2.2 Website(s) or other internet site(s)

- The ATLAS Center website link is: www.ATLAS-Center.org.
- The ATLAS Center Facebook page: https://www.facebook.com/ATLASCenter

2.3 Technologies and techniques

Nothing to report for this period.

2.4 Inventions, patent applications, and/or licenses

Nothing to report for this period.

2.5 Other products

Nothing to report for this period.

3. PARTICIPANTS AND COLLABORATING ORGANIZATIONS

The ATLAS Center places great value on multidisciplinary, collaborative activities. Indeed, collaboration is the hallmark of our Center. We are working to establish several collaborations.

3.1 What organizations have been involved as partners?

The ATLAS Center is a collaboration between UMTRI in Ann Arbor, Michigan and TTI in College Station, Texas. Several of the Center's programs are designed to facilitate collaborative efforts among the two institutions.

As part of some of the ATLAS Center research projects, partners outside these two institutions have been brought in as research collaborators. These partners include: Mr. Will Bozeman (Texas Department of Transportation – Austin District); Dr. Joel Cooper (University of Utah and Precision Driving Research); Mr. Mack Cowan (Texas Department of Public Safety); Ms. Elizabeth Hilton (Federal Highway Administration); Dr. John Ivan (University of Connecticut); Dr. Paul Milgram (University of Toronto); Mr. David Mitropoulos-Rundus (Hyundai-Kia); Ms. Tina Sayer (Toyota Motor Corporation); Dr. Bruce Simons-Morton (National Institute for Child Health and Development, NIH); Ms. Lisa Southwick (Hyundai Kia); Ms. Kaye Sullivan (Ford Motor Company); and Dr. Zong Tian (Center for Advance Transportation Education and Research, University of Nevada).

The ATLAS Center at UMTRI has a commitment from the Michigan Department of Transportation for cost match funding for the first 2 years of operation. We are working with this organization to determine how this funding can be utilized.

3.2 Have other collaborators or contacts been involved?

In addition to collaboration with organizations outside of U-M and Texas A&M University (TAMU), the ATLAS Center intends to take full advantage of the breadth of expertise available within these two universities. The following is a list of departments/institutes for which ATLAS Center has collaborated with during the reporting period: Chemical Engineering (U-M); Civil Engineering (U-M and TAMU); C.S. Mott Children's Hospital (U-M); Department of Asian Languages and Culture (U-M); Department of Communication Studies (U-M); Department of

Earth and Environmental Sciences (U-M); Department of Health Behavior and Health Education (U-M); Department of Health Management and Policy (U-M); Department of Psychiatry (U-M); Department of Psychology (U-M and TAMU); Department of Statistics (U-M); Department of Surgery (U-M); Economics Department (U-M); Geriatrics Center (U-M); Industrial and Manufacturing Systems Engineering (U-M); Industrial and Operations Engineering (U-M); Industrial and Systems Engineering (TAMU); Landscape Architecture and Urban Planning (TAMU); Institute for Gerontology (U-M); Institute for Social Research (U-M); Materials and Science Engineering (U-M); Mechanical Engineering (U-M); and School of Public Health (TAMU).

4. IMPACT

The ATLAS Center is beginning to have impacts on all three of its focus areas – research, education, and technology transfer. These impacts are discussed in the following sections.

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

Our impact has been to further the development of the field of transportation safety in multiple ways. First, our ongoing research program has created new knowledge about how to improve safety. Second, our outreach to students in a variety of fields has been instrumental in bringing new talent into the field or encouraging students to become more fully engaged in the field of transportation safety. For example, one of the students who participated in last year's summer intern program is now working as an intern for WIN and is directly involved in the workforce development project WIN is engaged in as part of our partnership. Her continuing journey into the transportation safety field is a direct impact of the Center's commitment to student learning and involvement. Another student who participated in the summer intern program came from the field of Earth and Environmental Sciences. As a result of his involvement in a project on variable speed limits during his internship, he became more interested in transportation safety and presented his peer-reviewed research at TRB.

4.2 What is the impact on other disciplines?

Advancements in transportation safety clearly require a multi-disciplinary and multi-faceted approach. Through its research, education, and technology transfer programs and initiatives, the ATLAS Center has broadly reached out to variety of disciplines (as evidenced elsewhere in this report) and by doing so, has raised the awareness in these disciplines about transportation safety and the potential roles they can play in finding integrated solutions to transportation problems.

4.3 What is the impact on transportation workforce development?

During this reporting period, the ATLAS Center initiated a partnership with the WIN program intended to have important impacts on the development of the transportation workforce including: a better understanding of the workforce related to transportation safety and green mobility; clearer definitions of what workers in this space do and how new occupational codes might be development to better align with the transportation workforce; identification of training gaps for workers; and the contribution to future program develop to address training gaps.

The ATLAS Center also supported several student activities with the long-term goal of fostering increased interest in and commitment to pursuing transportation related careers. Specifically the Center:

- Provided the opportunity for a high performing student to attend the Transportation Research Board meeting and present research results at a committee meeting.
- Provided support to several undergraduate students to participate in a summer research internship program focused on transportation.

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

The Center, while still early in its life, has already strategically positioned itself to have a strong impact on transportation safety because of the synergy it has created, and the breadth and depth of knowledge it has brought together through the partnership of UMTRI and TTI. The Center has begun to harness the wealth of transportation expertise and information resources residing in each institution into a single entity, which will lead to integrated, innovative solutions for improving the transportation system within all of the areas of safety within our scope. In addition, by adding a formalized structure to the partnership between the institutions, we are achieving significant operational efficiencies by reducing duplication in research, education/ workforce development, and technology transfer efforts. Establishment of the Center has also led to UMTRI and TTI partnering on other transportation related initiatives that likely would not have come about in the absence of the Center. Similarly, through the Center's outreach to other U-M departments (e.g., the research and student grant competitions), we have increased awareness of and interest in transportation safety in departments that otherwise would have limited involvement in this area.

4.5 What is the impact on technology transfer?

The ATLAS Center's research program is poised to have a significant impact on technology transfer. Much of the Center's current research portfolio is focused on outcomes that represent indirect technologies (e.g., new processes, procedures, assessment data sets, training materials) rather than direct research technologies (e.g., tools or software). There are identified stakeholders and industry partners waiting to apply these research outcomes to practice and policy. For example, two ATLAS projects being directed by Dr. Paul Green will produce time estimates for a comprehensive set of in-vehicle tasks that drivers engage in (e.g., tuning a radio station, finding a song, entering a destination into a navigation system) including the time it takes for each element of the task (e.g., each reach, each button press and so forth). These results will be used to revise the SAE Recommended Practice J2365 which is the procedure that the automotive industry uses to estimate task times and therefore distraction. This is critical to the industry because of the potential of many in-vehicle tasks to distract the driver from the driving task; both vehicle manufacturers and drivers need to know how long such tasks take so decisions can be made about what should and should not be done when a driver is engaged in the task of driving.

4.6 What is the impact on society beyond science and technology?

It is too early to assess ATLAS Center's impact on society beyond science and technology. However, given the centrality of transportation safety in the movement of people, goods, and services, the Center clearly has an opportunity to impact society through its research, educational, and technology transfer outcomes, particularly with regard to the economic, health, and social costs that accrue from motor vehicle crashes and their associated injuries.

5. CHANGES/PROBLEMS

5.1 Changes in approach and reasons for change

There are no changes in the approach during this reporting period.

5.2 Actual or anticipated problems or delays and actions or plans to resolve them
Nothing to report.

5.3 Changes that have a significant impact on expenditures
Nothing to report for this period.

5.4 Significant changes in use or care of human subjects, vertebrate animals, and/or biohazards
There are no changes in the use or care of human subjects. There are no plans for the use of vertebrate animals or biohazards in any center activities.

5.5 Change of primary performance site location from that originally proposed
There have been no changes in the primary performance sites and no changes are anticipated in the future.

5.6 Additional information regarding Products and Impacts
Nothing to report for this period

6. SPECIAL REPORTING REQUIREMENTS

There are no special reporting requirements.