Guide to FY2016 Research Funding at the U.S. Department of Transportation (DOT)
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Executive Summary and Index
This document provides succinct insights into the various DOT funding opportunities for University research, with special attention to changes anticipated in FY2016.

DOT research addresses various modes of transportation including: airlines and airports, highway, maritime, multimodal sources, pipeline and hazardous materials, rail, transit.
DOT has a number of administrations with research programs that engage Universities, including the Office of the Assistant Secretary for Research and Technology (OST-R) which houses the Research and Innovation Technology Administration (RITA), the Federal Highway Administration (FHWA), the Federal Aviation Administration (FAA), the National Highway Traffic Safety Administration (NHTSA) and the Federal Transit administration (FTA).

Descriptive of research funding opportunities pages 2- 8
Most of the research funding at Universities is done through Center programs (evident from the budget requests and the University funding levels in Table 1).
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Overview
The mission of the U.S. Department of Transportation (DOT) is to ensure a fast, safe, efficient, accessible and convenient transportation system. The various modes of transportation include: Airlines and Airports, Highway, Maritime, Multimodal Sources, Pipeline and Hazardous Materials, Rail, Transit. Most of the research funding at Universities is done through Center programs (evident from the budget requests and the University funding levels in Table 1).

The DOT has a number of administrations with research programs that engage Universities including:

- **Office of the Assistant Secretary for Research and Technology (OST-R)**
  - **Research and Innovation Technology Administration (RITA)**
    - Focus: Advance innovative technologies, including intelligent transportation systems
- **Federal Highway Administration (FHWA)**
  - Focus: Maintain and improve the safety, condition, and performance of national highways
- **Federal Aviation Administration (FAA)**
  - Focus: Provide the safest and most efficient aerospace system
- **National Highway Traffic Safety Administration (NHTSA)**
  - Focus: Vehicle and highway safety
- **Federal Transit administration (FTA)**
  - Focus: Address aging transit infrastructure, and rail/bus repair and replacement
- **Federal Railroad Administration (FRA)**
  - Focus: passenger and freight rail services and infrastructure

**Research and Innovation Technology Administration (RITA)**
http://www.rita.dot.gov/about_rita
RITA is now part of the Office of the Asst. Secretary for Research and Technology (OST-R). It coordinates the DOT research programs and is charged with advancing the deployment of crosscutting technologies to improve our Nation's transportation system. RITA manages a number of agency wide efforts including the Univ. Centers of Excellence and the Intelligent Transportation Systems programs. (see MAPS DOT Charts 4-9).

**University Transportation Centers of Excellence (UTC)**
http://www.rita.dot.gov/utc/
The purpose of these Centers is to advance U.S. technology and expertise in the many modes and disciplines comprising transportation through the mechanisms of research, education, and technology transfer; to provide a critical transportation knowledge base outside the US DOT; and to address vital workforce needs for the next generation of transportation leaders. There are:

- Five National UTCs, up to $3.0 million per Center per fiscal year;
- Eight Regional UTCs, up to $2.75 million per Center per fiscal year; and
- 20 Tier 1 UTCs, up to $1.5 million per Center per fiscal year.

Each Center is required to obtain matching funds from non-federal sources. Specific objectives of the UTC Program and of each individual Center are: Research, Education and Workforce Development, and Technology Transfer. A FHWA budget line funds the UTC program but other DOT administrations participate in the selection process. (USC has a Tier 1 UTC addressing metropolitan transportation and participates in the National UTC on environmental sustainability led by UC Davis.)
Intelligent Transportation Systems (ITS) Joint Program Office
http://www.its.dot.gov/

The ITS program focuses on intelligent vehicles, intelligent infrastructure, and the creation of an intelligent transportation system through integration with and between these two components. Vehicle-to-vehicle and vehicle-to-infrastructure communications safety applications are designed to increase situational awareness, and reduce or eliminate crashes through data transmissions that support driver advisories, driver warnings, and vehicle and/or infrastructure controls. Areas of research are:

- Safety
- Connected Vehicle Research
- Mobility
- Short Term Intermodal Research
- Environment
- Cross-Cutting Research
- Road Weather
- Exploratory Research

The ITS Exploratory Research program is intended to provide an avenue to solicit creative ideas for new technology options that are deserving of further attention and that further the ITS Strategic Research Plan goals.

Federal Highway Administration (FHWA)
http://www.fhwa.dot.gov/research/about/

The highway Research and Technology (R&T) effort is comprised of multiple programs, including the FHWA R&T Program, State highway agency R&T programs, the National Cooperative Highway Research Program (NCHRP), University Transportation Center programs, the Intelligent Transportation Systems Program, and other nonprofit and private sector programs. (see MAPS DOT Charts 10-15)

Exploratory Advanced Research Program (EAR)
http://www.fhwa.dot.gov/advancedresearch/

This program is intended to spur innovation and focus on high risk and high pay-off research. Exploratory Advanced Research bridges basic and applied research; a specific application or product is not the goal of the work. Incremental advances and demonstrations or evaluations of existing technologies are not within the scope of this program. The five focus areas are:

- Connected Highway and Vehicle System Concepts
- Breakthrough Concepts in Material Science
- Human Behavior and Travel Choices
- Technology for Assessing Performance

CyberPhysical System (CPS) Program

FHWA participates in a joint program with NSF (and other agencies) on cyberphysical systems. The goal of the CPS Program is to develop the core system science needed to engineer complex cyber-physical systems upon which people can depend with high confidence. FHWA has identified specific technology-based requirements to support ongoing and anticipated research road maps including for multi-modal integrated corridor management, arterial traffic management, traffic signal management and control, traffic incident and event management, and passenger and freight data management.
The center houses more than 20 laboratories, data centers, and support facilities, and conducts in-house applied and exploratory advanced research in vehicle-highway interaction, and a host of other types of transportation research in safety, pavements, highway structures and bridges, human-centered systems, operations and intelligent transportation systems, and materials.

Federal Aviation Administration (FAA)
http://www.faa.gov/data_research/research/
The National Aviation Research Plan (NARP) outlines the FAA goals and commitment to research leading to a Next Generation Air Transportation System (NextGen). NextGen is a series of inter-linked programs, systems, and policies that implement advanced technologies and capabilities to dramatically change the way the current aviation system is operated. (See MAPS DOT Charts 16-19)

Research Grants Program
http://www.tc.faa.gov/contracts/grants/aviation_research_grants.htm
The FAA Research Grants Program encourages and supports innovative, advanced research of potential benefit to the long-term growth of civil aviation and Commercial Space Transportation. The areas that contribute to the FAA mission of improving aviation safety, capacity, efficiency, and security, are:

- Capacity and Air Traffic Control Technology
- Communications, Navigation, and Surveillance
- Aviation Weather Systems
- Human Factors and Aviation Medicine
- Aircraft Safety Technology
- Airports
- Environment and Energy
- Science/Operations Research
- Commercial Space Transportation

The FAA expects that grantees will share in the costs at a level that reflects their interest in the research, the potential benefits they may derive, and their ability to share in the cost of the project.

FAA Centers of Excellence
http://www.faa.gov/about/office_org/headquarters_offices/ang/offices/management/coe/
The FAA’s COE program is a cost-sharing research partnership between academia, industry and the federal government; there are presently 8 COE. A Center develops and implements transportation programs within a FAA specified ‘theme’ best suited for the Center to make the most significant contribution to the transportation community. The Centers have education, research, and technology transfer elements. (see MAPS DOT Chart 18).

William J. Hughes Technical Center (WJHTC)
http://www.faa.gov/about/office_org/headquarters_offices/ang/offices/tc/
WJHTC in Atlantic City NJ is the FAA’s in-house institution for the research, development, test, and evaluation of air transportation systems. It is strongly engaged in NextGen.

National Highway Traffic Safety Administration (NHTSA)
http://www.nhtsa.gov/Research
NHTSA supports safety programs and activities that ensure we keep pace with emerging roadway safety trends, such as distraction, vehicle electronics, and fuel economy. NHTSA’s National Advanced Driving Simulator (NADS) is the most sophisticated research driving simulator in the world; it is located at the University of Iowa. (see MAPS DOT charts 20-21)
Federal Transit Administration (FTA)
http://www.fta.dot.gov/
FTA is authorized to conduct research activities that improve the safety, reliability, efficiency, and sustainability of public transportation by investing in the development, testing, and deployment of innovative technologies, materials, and processes. FTA is also authorized to award grants to demonstrate and deploy new technologies that promote clean energy and improve air quality with low-emission or no-emission vehicles. (see MAPS DOT charts 22-23)

Federal Railroad Administration (FRA)
http://www.fra.dot.gov/Page/P0001
FRA's Research and Development Program provides science and technology support for the agency’s rail safety rulemaking, enforcement efforts, and state of good repair. It also identifies and develops emerging technologies for the rail industry to adopt voluntarily. The program focuses on the following areas of research:
- Track Program - Reducing derailments due to track related causes.
- Rolling Stock Program - Reducing derailments and minimizing hazmat releases.
- Train Control and Communication - Reducing collisions
- Human Factors Program - Reducing accidents caused by human error
- Railroad System Issues Program - Prioritizing R&D projects
(See MAPS DOT Charts 24-25)
Resources:
Website showing the DOT research programs:
http://www.rita.dot.gov/rdt/dot_research_programs.html

Database of the USDOT-sponsored research, devel and technology projects.
http://ntlsearch.bts.gov/researchhub/index.do

ITS 2015 -2019 Strategic Plan
http://www.its.dot.gov/strategicplan/index.html

Highways of the Future – A Strategic Plan for Infrastructure R&D

FAA report “Destination 2025”
http://www.faa.gov/about/plans_reports/media/Destination2025.pdf

National Aviation Research Plan (2013)
http://www.faa.gov/about/office_org/headquarters_offices/ang/offices/ct/about/campus/faa_host/RDM/

Mission Agency Program Summaries (MAPS)
The DC Office of Research Advancement has created the Federal Mission Agency Program Summaries website to:
1. connect PIs with appropriate funding agency programs/program officers
2. assist in development of white papers/charts/elevator speeches
The website (http://web-app.usc.edu/web/ra_maps) can be accessed using one’s USC NetID and Password.

MAPS will have the following resources:
1. **Search Tab** for a searchable database of programs/program officers
   One can do keyword searches to locate many of the associated mission agency (DHS, DOD, DOE, DOT, ED, EPA, NASA, NIST, NOAA and USDA) programs and program officers.
2. **Mission Agency Tab** (DHS, DHHS, DOD, DOE, DOJ, DOT, ED, EPA, INTEL, NASA, NIST, NOAA, and USDA)
   Guide to Agency Funding for FYXX
   Agency Research Program Charts
   Agency Planning Documents
   Chart numbers in the “Guides to Funding” reference the Agency Research Program Chart file.
3. **Presentation Tab** for charts from recent USC Center of Excellence in Research workshops
4. **Proposal Tab** for reports / guides on writing proposals
5. **Email Alerts Tab** for URLs at which one can arrange for automatic solicitation updates
6. **Grantee Tab** for URLs at which one can find previous agency/program officer awardees
7. **Visiting DC Tab** for information about DC Office services

**Assistance in Locating Funding and Preparing Proposals**
Dr. James S. Murday DC Office of Research Advancement
Tel: 202 824 5863 Email: Murday@usc.edu
Table 1: 2011 / 2013 DOT funding ($M) for Basic and Applied Research at Universities and Colleges

<table>
<thead>
<tr>
<th></th>
<th>2011 Basic</th>
<th>2011 Applied</th>
<th>2013 Basic</th>
<th>2013 Applied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for DOT</td>
<td>632</td>
<td></td>
<td>722</td>
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<tr>
<td><strong>Total at Universities</strong></td>
<td>56</td>
<td></td>
<td>75</td>
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<tr>
<td>FHWA total</td>
<td>4</td>
<td>295</td>
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<td>333</td>
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<tr>
<td>At Universities</td>
<td>0</td>
<td>11</td>
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<td>22</td>
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<tr>
<td>FAA total</td>
<td>210</td>
<td></td>
<td>223</td>
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<tr>
<td>At Universities</td>
<td>19</td>
<td></td>
<td>20</td>
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<tr>
<td>NHTSA total</td>
<td>71</td>
<td></td>
<td>111</td>
<td></td>
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<tr>
<td>At Universities</td>
<td>8</td>
<td></td>
<td>13</td>
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<tr>
<td>FTA total</td>
<td>23</td>
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<td>31</td>
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<tr>
<td>At Universities</td>
<td>6</td>
<td></td>
<td>11</td>
<td></td>
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<tr>
<td>FRA total</td>
<td>20</td>
<td></td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>At Universities</td>
<td>9</td>
<td></td>
<td>5</td>
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Basic 2011 Tables 30
Applied Research 2011 Tables 44
Basic 2013 Table 32
Applied Research 2013 Table 46
### Table 2: DOT requested R&D Funding Pertinent to Universities

<table>
<thead>
<tr>
<th></th>
<th>FY14 Actual ($M)</th>
<th>FY15 Est. ($M)</th>
<th>FY16 PBR ($M)</th>
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<td><strong>Office of Research, Development and Technology (OST-R, in FHWA budget)</strong></td>
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<tr>
<td>University Transportation Centers</td>
<td>69</td>
<td>68</td>
<td>82</td>
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<tr>
<td>Intelligent Transportation Systems</td>
<td>95</td>
<td>94</td>
<td>158</td>
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<tr>
<td>Bureau of Transportation Statistics</td>
<td>26</td>
<td>26</td>
<td>29</td>
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<tr>
<td><strong>Federal Highway Administration</strong></td>
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<td></td>
</tr>
<tr>
<td>Highway Research and Development Program (includes EAR)</td>
<td>109</td>
<td>108</td>
<td>130</td>
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<tr>
<td>Technology and Innovation Deployment Program</td>
<td>59</td>
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<td>70</td>
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<tr>
<td>Training and Education</td>
<td>23</td>
<td>23</td>
<td>27</td>
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<tr>
<td></td>
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<tr>
<td><strong>Federal Aviation Administration</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Engineering and Development</td>
<td>159</td>
<td>159</td>
<td>166</td>
</tr>
<tr>
<td>A11 Improve Aviation Safety</td>
<td>87</td>
<td>91</td>
<td>97</td>
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<tr>
<td>A12 Economic Competitiveness</td>
<td>24</td>
<td>22</td>
<td>25</td>
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<tr>
<td>A13 Environmental Sustainability</td>
<td>42</td>
<td>38</td>
<td>39</td>
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<tr>
<td>A14 Mission Support</td>
<td>6</td>
<td>6</td>
<td>6</td>
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<td>Next Gen Portfolio (included in Res, Engn and Development)</td>
<td>60</td>
<td>60</td>
<td>61</td>
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<tr>
<td>A11m Alternative Fuels (under Safety)</td>
<td>2</td>
<td>6</td>
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<tr>
<td>A12a Wake Turbulence (under Economic Competitiveness)</td>
<td>10</td>
<td>9</td>
<td>9</td>
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<tr>
<td>A12b Air Ground Integration</td>
<td>7</td>
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<td>9</td>
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<tr>
<td>A12c Weather in the Cockpit</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>A13b Envn Res, Aircraft Technol, Fuels &amp; Metrics</td>
<td>22</td>
<td>27</td>
<td>24</td>
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<td><strong>National Highway Traffic Safety Administration</strong></td>
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<tr>
<td>Vehicle Safety Research (Research and Analysis)</td>
<td>32</td>
<td>29</td>
<td>40</td>
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<tr>
<td>Highway Safety Res and Development (Res and Anal) - NCSA</td>
<td>34</td>
<td>33</td>
<td>46</td>
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<tr>
<td><strong>Federal Transit Administration</strong></td>
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<td></td>
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<tr>
<td>Transit Research and Training</td>
<td>43</td>
<td>38</td>
<td>60</td>
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<tr>
<td>Research and University Research Centers</td>
<td>12</td>
<td>45</td>
<td>45</td>
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<tr>
<td><strong>Federal Railroad Administration</strong></td>
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<td></td>
</tr>
<tr>
<td>Research and Development</td>
<td>32</td>
<td>39</td>
<td>39</td>
</tr>
</tbody>
</table>
Appendix 1:
FY2016 DOT Research Programs with significant change (from FY15 to FY16 in $M)

OST-R / RITA
University Transportation Centers (UTC) from 73 to 82
As directed by MAP-21, a competition was held in FY 2013 to select a new cadre of UTCs. These Centers will receive FY15 and FY16 funds, depending on availability.

Intelligent Transportation Systems Accelerated Automation Research from 0 to 49
The requested funding level will allow programs to be executed as described in the ITS Strategic Research Plan 2015 to 2019, and will support the multitude of transportation stakeholders that rely on technology solutions to meet the challenges that face our transportation systems. The funding will allow the program to accelerate deployment of ITS technologies through demonstration programs, grants, incentives, and other strategies.

FHWA
Exploratory Research Solicitation from 2.4 to 6
This is part of the Research, Technology, and Education Program; no explicit insights into the solicitation topics in the Budget Request

FAA
Nothing in the Budget Request that clearly identifies changes to programs involving University research outside of the existing Center of Excellence.

NHTSA
Nothing in the Budget Request that clearly identifies changes to programs with solicitations involving University research

FTA
Nothing in the Budget Request that clearly identifies changes to programs with solicitations involving University research

FRA
Nothing in the Budget Request that clearly identifies changes to programs involving University research outside of the existing Center of Excellence.
Appendix 2: Illustration of DOT Program Manager Data Sheet

Mr. David E. Kuehn  
Team Director/Program Manager  
Office of Corporate Research, Technology, and Innovation Management, HRTM-30  
DOT Federal Highway Administration  
david.kuehn@fhwa.dot.gov  
(202) 493-3414

Biosketch:  
National expert in transportation policy, transportation and land use, local land use and zoning, environmental justice, public involvement, transportation performance measurement, program evaluation and community-level measures. Responsible for research program development and communication of national policy on behalf of the Federal Highway Administration.

Specialties: facilitation; workplace mediation; instructional development and instructor

Education  
BA in Philosophy from University of California, Irvine  
MPA in Public Administration from University of Southern California

Program: Exploratory Advanced Research (EAR)  

Exploratory advanced research focuses on long-term, high-risk research with a high payoff potential. It matches opportunities from discoveries in science and technology with the needs of specific industries. The uncertainties in the research approach and outcomes challenge organizations and researchers to be innovative problem-solvers, which can lead to new research techniques, instruments, and processes that can be applied to future high-risk and applied research projects.
### Appendix 3: Acronym and Abbreviation Glossary

#### Agency Specific

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAR</td>
<td>Exploratory Advanced Research (program in FHWA)</td>
</tr>
<tr>
<td>FAA</td>
<td>Federal Aviation Administration</td>
</tr>
<tr>
<td>FHWA</td>
<td>Federal Highway Administration</td>
</tr>
<tr>
<td>FRA</td>
<td>Federal Railway Administration</td>
</tr>
<tr>
<td>FTA</td>
<td>Federal Transit Administration</td>
</tr>
<tr>
<td>HRD</td>
<td>Highway Research and Development (program in FHWA)</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>ITS</td>
<td>Intelligent Transportation Systems (Joint Program Office in RITA)</td>
</tr>
<tr>
<td>MAP-21</td>
<td>Moving Ahead for Progress in the 21st Century Act (P.L. 112-141)</td>
</tr>
<tr>
<td>NADS</td>
<td>National Advanced Driving Simulator (program in NHTSA)</td>
</tr>
<tr>
<td>NARP</td>
<td>National Aviation Research Plan (in FAA)</td>
</tr>
<tr>
<td>NCHRP</td>
<td>National Cooperative Highway Research Program (in FHWA)</td>
</tr>
<tr>
<td>NCSA</td>
<td>National Center for Statistics and Analysis (NHTSA in house center)</td>
</tr>
<tr>
<td>NHTSA</td>
<td>National Highway Traffic Safety Administration</td>
</tr>
<tr>
<td>OST-R</td>
<td>Office of the Assistant Secretary for Research and Technology</td>
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<td>RITA</td>
<td>Research and Innovative Technology Administration (in OST-R)</td>
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<tr>
<td>RD&amp;T</td>
<td>Research, Development and Technology</td>
</tr>
<tr>
<td>R&amp;T</td>
<td>Research and Technology</td>
</tr>
<tr>
<td>SHRP</td>
<td>Strategic Highway Research Program (in FHWA)</td>
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<tr>
<td>TIDP</td>
<td>Technology and Innovation Deployment Program (in FHWA)</td>
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<tr>
<td>TFHRC</td>
<td>Turner-Fairbank Highway Research Center (FHWA in-house lab)</td>
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<td>UTC</td>
<td>University Transportation Centers (Program in RITA)</td>
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<tr>
<td>WJHTC</td>
<td>William J. Hughes Technical Center (FAA in-house lab)</td>
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#### General

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMNPO</td>
<td>Advanced Manufacturing National Program Office</td>
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<tr>
<td>AMP</td>
<td>Advanced Manufacturing Partnership</td>
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<td>ASEE</td>
<td>American Society for Engineering Education</td>
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<tr>
<td>BAA</td>
<td>Broad Agency Announcement</td>
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<tr>
<td>BRAIN</td>
<td>Brain Research through Advancing Innovative Neurotechnologies</td>
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<tr>
<td>CA</td>
<td>Congressional add</td>
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<td>CFDA</td>
<td>Catalog of Federal Domestic Assistance Number</td>
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<td>CMOS</td>
<td>Complementary Metal Oxide Semiconductor (electronics)</td>
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<td>COE</td>
<td>Center of Excellence</td>
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<td>CSI</td>
<td>Congressional Special Interest</td>
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<td>DHS</td>
<td>Department of Homeland Security</td>
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<td>DNI</td>
<td>Director of National Intelligence</td>
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<td>DOC</td>
<td>Department of Commerce</td>
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<td>Department of Justice</td>
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<td>Department of Education</td>
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<td>Environmental Protection Agency</td>
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<td>FAA</td>
<td>Federal Aviation Administration</td>
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<td>Acronym</td>
<td>Full Form</td>
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<td>FDA</td>
<td>Food and Drug Administration</td>
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<td>FFO</td>
<td>Federal Funding Opportunity</td>
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<td>FFDRC</td>
<td>Federally Funded Research and Development Center</td>
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<td>FHWA</td>
<td>Federal Highway Administration</td>
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<td>FOA</td>
<td>Funding Opportunity Announcement</td>
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<tr>
<td>FY</td>
<td>Fiscal Year (1 Oct to 30 Sep for Federal government)</td>
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<tr>
<td>HBCU/MI</td>
<td>Historically Black Colleges/Universities and Minority Institutions</td>
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<tr>
<td>HTM</td>
<td>Hierarchical Temporal Memory</td>
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<td>IHE</td>
<td>Institutions of Higher Education</td>
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<td>IMI</td>
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<td>INTEL</td>
<td>The various agencies that gather intelligence</td>
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<td>Infra-Red</td>
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<td>MRL</td>
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<td>NASA</td>
<td>National Aeronautics and Space Administration</td>
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<td>NDI/E</td>
<td>Non-Destructive Inspection/Evaluation</td>
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<tr>
<td>NIST</td>
<td>National Institute for Standards and Technology (in DOC)</td>
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<td>NNMI</td>
<td>National Network for Manufacturing Innovation</td>
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<td>NRC</td>
<td>National Research Council</td>
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<td>NRI</td>
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<td>National Reconnaissance Office</td>
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<td>National Science Foundation</td>
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<td>NSTC</td>
<td>National Science and Technology Council</td>
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<td>OSTP</td>
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<tr>
<td>PCAST</td>
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<tr>
<td>PTSD</td>
<td>Post-traumatic Stress Syndrome</td>
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<tr>
<td>RD&amp;I</td>
<td>Research, Development and Innovation</td>
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<td>RDT&amp;E</td>
<td>Research, Development, Test and Evaluation</td>
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<td>RF</td>
<td>Radio-frequency</td>
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<td>RFA</td>
<td>Request for Application</td>
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<td>Science and Technology</td>
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## Index to Charts: Guidance to US Department of Transportation (DOT)

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The DC Office of Research Advancement has created the Federal Mission Agency Program Summaries (MAPS) website to:

1. Connect PIs with appropriate funding agency programs/program officers
2. Assist in development of white papers/charts/elevator pitches

The website can be accessed using one’s USC NetID and Password.

It has the following resources:

1. Search Tab for a searchable database of programs/program officers
   At that website one can do keyword searches to locate the associated mission agency (DHS, DOD, DOE, DOT, ED, EPA, INTEL, NASA, NIST, NOAA and USDA) programs and program officers.

2. Mission Agency Tab (DHS, DHHS, DOD, DOJ, DOE, DOT, ED, EPA, INTEL, NASA, NIST, NOAA, USDA)
   Guide to Agency Funding for FYXX
   Agency Research Program Charts
   Agency Planning Documents
   Chart numbers in the text above reference the Agency Research Program Chart files.

3. Presentation Tab for charts from recent USC Center of Excellence in Research workshops

4. Proposal Tab for report / guides on writing proposals

5. Email Alerts Tab for URLs at which one can arrange for automatic solicitation updates

6. Grantee Tab for URLs at which one can find previous agency awardees

7. Visiting DC Tab for information about DC Office services
DOT Research Programs
http://www.rita.dot.gov/rdt/dot_research_programs.html

Aviation
Federal Aviation Administration (FAA) Data and Research

Highway
Federal Highway Administration (FHWA) Research
Turner-Fairbank Highway Research Center

Maritime
Maritime Administration (MARAD) Research and Development Activities

Motor Carrier
Federal Motor Carrier Safety Administration (FMCSA) Analysis, Research and Technology

Hazardous Mat’ls
Pipeline and Hazardous Materials Safety Administration (PHMSA) Research & Development

Highway Traffic Safety
National Highway Traffic Safety Administration (NHTSA) Highway Safety Research and Evaluation Program
NHTSA Vehicle Safety Research

Pipeline
PHMSA Research & Development

Railroad
Federal Railroad Administration (FRA) Research and Development

Transit
Federal Transit Administration (FTA) Research, Technical Assistance & Training

Intermodal Research
Intelligent Transportation Systems Joint Program Office
DOT Climate Change Center

Cooperative Research Programs
Airport Cooperative Research Program (ACRP)
Hazardous Materials Cooperative Research Program (HMCRP)
National Cooperative Freight Research Program (NCFRP)
National Cooperative Highway Research Program (NCHRP)
Transit Cooperative Research Program (TCRP)
Office of the Assistant Secretary for Research and Technology
includes the Research and Innovative Technology Administration - (RITA)
http://www.rita.dot.gov/rdt/
What: The ITS program focuses on intelligent vehicles, intelligent infrastructure and the creation of an intelligent transportation system through integration with and between these two components. Vehicle-to-vehicle and vehicle-to-infrastructure communications safety applications are designed to increase situational awareness and reduce or eliminate crashes through data transmissions that support driver advisories, driver warnings, and vehicle and/or infrastructure controls.

The Federal ITS program invests in major research initiatives, exploratory studies and a deployment support program including technology transfer and training. See more at: http://www.its.dot.gov/its_jpo.htm#sthash.ZdMXrfay.dpuf

Areas of Research:
- Connected Vehicle Research
  Connected vehicle research aims to enable safe, interoperable net-worked wireless communications among vehicles, the infrastructure, and passengers' personal communications devices.
- Short Term, Intermodal Research
  Research in a set of Short Term Intermodal research programs is expected to further the Department's goal of leveraging technology to maximize safety, mobility, and environmental performance.
- Cross-Cutting Research
  The ITS Program's Cross-Cutting Support are functions that ensure the effective and successful implementation and use of ITS.
- Exploratory Research
  The ITS Exploratory Research Program solicits creative ideas for new technology options that address connectivity, safety, mobility, and environmental mitigation.

Request for Information (RFI) Solicitations - frequently a prelude to a request for proposals.
  May 2013  The Second Strategic Highway Research Program (SHRP2) Safety Data System
  Aug 2013   Connected Vehicle - Next Stage Certification Environment

How Much: The FY 2016 budget request for the Intelligent Transportation Systems (ITS) program is $158M (in the FHWA budget line).

Where: http://www.its.dot.gov/procurement.htm
Near-Term Research Themes (2015 – 2016)

Maturing Connected Vehicle Systems

- Vehicle-Focus Standards – Craft the set of standards that support vehicle communications for all vehicle and other device (pedestrian/bicycle) types after production begins and that support a low-vehicle penetration environment.
- On-board Driver Enhancements – Establish solutions that support the intermediate stage between connected vehicles and automated vehicles.
- Secured Vehicles – Ensure implementation of a secure connected vehicle environment with the capability to perform system-wide upgrades to counter evolving threats.

Piloting and Deployment Readiness

- Business Model Development – Establish the value proposition and seek mechanisms for public-private coordinated investment in connected vehicles, including resource sharing.
- Data Exchange Facilitation – Coordinate, internationally and domestically, information-sharing specifications, architecture, and standards necessary for enhanced data sharing across the public and private sectors.
- Multimodal Operations – Establish new levels of coordinated operations that extend beyond the achievements of Integrated Corridor Management, including urban and rural environments.
- Truck Route Optimization – Examine optimized truck route optimization for cross-urban and inter-urban freight movements. Address the geometric challenges trucks face on many non-limited-access routes that could function as alternate routes and identify railroad crossings that pose safety hazards.
- Expanded Regional Pilots – Demonstrate data management capabilities to support multimodal operations and data fusion, including crowd-sourced information.

Integrating with the Broader Environment

- Decision Support Systems – Develop the intelligent logic needed at transportation management centers to produce greater value in the connected vehicle environment.
- Data Fusion/Modeling/Standards – Extend the value of legacy ITS tools to continue providing support during the connected vehicle transitional stage.
- EV Fleets – Support the deployed EV fleets by leveraging increased information needs via longer connect times (i.e., recharging provides longer connectivity to high-speed/high-volume data communications).

Long-Term Research Themes (2017 – 2019)

Maturing Connected Vehicle Systems

- Automated Vehicle – Define how an automated vehicle fleet can be introduced with limited or no impact to current infrastructure and other legacy transportation assets.
- Vehicle Automation Enablers – Define enabling technologies and redundancies required to progress toward control intervention and vehicle automation in a connected vehicle environment.
- Automation Risk Factors – Research risk profile changes with increased vehicle automation in traffic and liability implications for stakeholders.

Integrating With the Broader Environment

- Digital Society – Advance coordination of public infrastructure assets with transportation assets to enable operation of alternatively powered vehicles through data integration with the private sector, other state department of transportation agencies, and other public agencies.
- Always Connected Users – Accommodate the transportation information needs of always-connected users and augmented-reality applications.
- Redefining Roadway Planning, Geometry, Modeling, and Operations – Assess the opportunity to redefine current transportation infrastructure assets due to changed requirements from the presence of automated vehicles.
DOT RITA
Office of Research, Development and Technology (RDT-30)
University Transportation Centers
RFP-12-20-2012

**What:** Advance U.S. technology and expertise in the many modes and disciplines comprising transportation through the mechanisms of research, education, and technology transfer; to provide a critical transportation knowledge base outside the US DOT; and to address vital workforce needs for the next generation of transportation leaders.

Specific objectives of the UTC Program and of each individual Center are:

- **Research:** To conduct basic and applied research, the products of which are judged by peers or other experts in the field of transportation to advance the body of knowledge in transportation.
- **Education and Workforce Development:** To provide an education program relating to transportation that includes multidisciplinary course work, participation in research, and workforce development activities and programs to expand the workforce of transportation professionals.
- **Technology Transfer:** To deliver an ongoing program of technology transfer that makes transportation research results available to potential users in a form that can be implemented, utilized, or otherwise applied.

It may be a single university or a consortium of two or more universities. Each Center is required to obtain matching funds from non-federal sources. National and Regional UTCs must obtain matching funds in an amount at least equal to the US DOT grant amount.

**How Much:** over 4 year period (total FY2016 budget estimated at $82M in the FHWA budget line)

- Five National UTCs, up to $3M per Center per fiscal year
- Ten Regional UTCs, up to $2.7M per Center per fiscal year
- Twenty Tier 1 UTCs, up to $1.5M per Center per fiscal year

**When:** Solicitations at roughly four year intervals, most recent in FY2013 with Mar 2013 due date

**Where:** [http://utc.dot.gov](http://utc.dot.gov)

USC has a Tier I UTC on Metropolitan Transportation in the FY14-18 time frame (as well as from FY05-09); it also contributes to the National Center for Sustainable Transportation UTC led by UC Davis.
National UTCs
Economic Competitiveness  Univ of MD, National Center for Strategic Transportation Policies, Investments, and Decisions
Environmental Sustainability  University of California, Davis, National Center for Sustainable Transportation
Livable Communities  Portland State University, National Institute for Transportation and Communities
Safety  Carnegie Mellon University, Technologies for Safe and Efficient Transportation Center
State of Good Repair  Rutgers, Center for Advanced Infrastructure and Transportation

Regional UTCs
Region 1  Massachusetts Institute of Technology, Safety New England University Transportation Center
Region 2  City University of New York, Economic Competitiveness University Transportation Research Center
Region 3  to be competed in Fall 2013
Region 4  University of Tennessee, Safety Southeastern Transportation Center
Region 5  University of Minnesota, Safety Center for Roadway Safety Solutions
Region 6  University of Oklahoma, State of Good Repair  Southern Plains Regional Transportation Center
Region 7  Iowa State University, State of Good Repair Midwest Transportation Center
Region 8  North Dakota State University, State of Good Repair Mountain-Plains Consortium
Region 9  University of California, Berkeley, Economic Competitiveness UC Center on Economic Competitiveness in Transportation
Region 10  to be competed in Fall 2013

Tier 1 UTCs
Economic Competitiveness
University at Buffalo, State University of NY  Transportation Informatics University Transportation Center
University of Arkansas  Maritime Transportation Research and Education Center
University of Illinois, Urbana-Champaign  National University Rail Center
University of Southern California  Metropolitan Transportation University Transportation Center
University of Texas, Austin  Data-Supported Transportation Operations and Planning Center

Environmental Sustainability
Maine Maritime Academy  Marine Engine Testing and Emissions Laboratory
University of Alaska, Fairbanks  Center for Environmentally Sustainable Transportation in Cold Climates
University of Central Florida  Electric Vehicle Transportation Center

Livable Communities
Montana State University  Small Urban and Rural Livability Center
University of South Florida  National Center for Transit Research
Western Michigan University  Transportation Research Center for Livable Communities

Safety
Florida State University  Center for Safe and Accessible Transportation for an Aging Population
Ohio State University  Crash-Imminent Safety University Transportation Center
University of Iowa  Safety Research Using Simulation Center
University of Michigan  Center for Advancing Transportation Leadership and Safety
University of Nevada, Reno  Institute for Safety and Operations of Large-Area Rural-Urban Intermodal Systems
University of Texas, Pan American  University Transportation Center for Railway Safety

State of Good Repair
Florida International University  Accelerated Bridge Construction University Transportation Center
Michigan State University  University Transportation Center for Highway Pavement Preservation
Missouri Univ of Science and Technology  University Transportation Center for Research on Concrete Applications for Sustainable Transportation
The Sun Grant Initiative is charged with conducting a competitive research program for land-grant universities and their partners. Working with the Sun Grant Initiative, the Department of Transportation Research and Innovative Technology Administration (RITA) convened a team of federal agency specialists to identify the nation’s leading research priorities to be addressed in order to develop renewable bio-based transportation fuels. DOT took a comprehensive “systems” approach, looking at the total bioenergy production process from feedstock development and logistics through conversion processes. DOT also looked at crosscutting issues, such as examining ways to produce and process bio-based transportation fuels to minimize the impacts of the transportation sector on the environment. To address these national research priorities in their regional and local contexts, with support from DOT, the Sun Grant Initiative has developed and implemented a national program of peer-reviewed regional competitive grants to conduct research on the development of bio-based transportation fuels.

Each of the five SGI Centers managed its own regional competitive grants program, to best meet the challenges of bioenergy and biomass research and education needs within their respective regions. Each Center utilizes approximately 75% of their total funding for these grant programs. As part of the development of the Regional Competitive Grants Program, each of the SGI Centers developed a solicitation for their region, consistent with national priorities identified by an ad hoc federal agency panel led by DOT/RITA with representatives from DOE, USDA, EPA and DOD. These national priorities for renewable transportation fuel development included: biofuel feedstock development; biofuels conversion processes; biofuel system analysis; economics, marketing and policy; and, environmental impacts. These national priorities were considered in the context of the unique biomass and biomass resources and challenges within each of the regions.

Some regions are holding new proposal calls annually while others will hold theirs biennially.
The Office of the Administrator includes the Administrator, Deputy Administrator, and the Executive Director. The Office of Innovative Program Delivery, Directors of Field Services (DFS), Office of Technical Services (OTS), Program Manager for Transportation Security, and the Executive Secretariat are extensions of the Executive Director's office. The DFSs provide administrative supervision and leadership on strategic initiatives to their constituent Federal-aid division offices. The Director of Technical Services is responsible for the Resource Center, the National Highway Institute, and Technology Partnership Programs.

The Intelligent Transportation Systems/Joint Program Office (ITS/JPO), which has a departmentwide role and authority for coordinating ITS program activities and initiatives, is organizationally located within FHWA. The Assistant Secretary for Research and Technology has primary responsibility for the strategic oversight and direction of the ITS/JPO, including but not limited to, providing policy guidance for ITS programs and activities and coordinating ITS research within the Department. The FHWA Administrator is responsible for ensuring the continuing availability of professional, technical, and administrative services to support the ITS/JPO.
DOT FHWA
Office of Research, Development and Technology

Office of Research, Development, and Technology Organizational Chart

Office of Infrastructure Research, Development and Development
- Program Management
- Bridge and Foundation Engineering Team
- Hazard Mitigation Team
- Infrastructure Management Team
- Long-Term Pavement Performance Team
- Pavement Design and Construction Team
- Pavement Materials Team

Office of Safety Research and Development
- Program Management
- Human Factors Team
- Roadway Team
- Safety Management Team

Office of Operations Research and Development
- Program Management
- Transportation Enabling Technologies Team
- Transportation Operations Applications Team
- Transportation Operations Concepts and Analysis Team

Office of Corporate Research, Technology, and Innovation Management
- Program Management
- Exploratory Advanced Research Team
- Innovation Management and Communications Team
- Research and Technology Program Development and Partnership Team

Office of Resource Management
- Program Management

Organization Chart with Names and Codes available at: http://www.fhwa.dot.gov/research/tfhrc/expertise/makepdf.cfm
Advanced Research Partnerships and Broad Agency Announcements and Other Contract Opportunities

As part of the Exploratory Advanced Research program, the Federal Highway Administration issues Broad Agency Announcements soliciting proposals for high–risk, high–payoff research and innovations to help solve critical highway challenges.

Communities of Practice

One way is through the Federal Highway Administration's (FHWA) Highway Community Exchange "Community of Practice" (CoP). This CoP is dedicated to the open exchange of information and knowledge about issues that are important to the transportation community, including highway research and technology deployment.

International Activities

Through its Office of International Programs (OIP), FHWA works to improve the technological and institutional base of highway transportation system performance and program delivery in the United States and abroad. OIP's programs and activities include:

- International Visitor Program
- Coordination of U.S. International Road Activities
- International Highway Technology Scanning Program
- Global Technology Exchange Program
- Emerging Markets/Opportunities

Research, Technology, and Education Partnerships

The highway community has numerous opportunities for formal and informal partnerships. For those seeking to become directly involved in highway research and technology deployment, please review the diverse opportunities identified in the partnerships at the Web site.

Scientific Peer Review

Get involved through participation in the U.S. Department of Transportation's (USDOT) scientific peer review process.
Connected Highway and Vehicle System Concepts — Emphasizes the longer-term needs to reach critical FHWA safety and mobility goals by developing the theory and assessing feasibility for systems that leapfrog current technological approaches for linking infrastructure with future vehicle and personal mobility technology.

Breakthrough Concepts in Material Science — This focus area leverages new approaches in materials science to produce innovative new highway materials with characteristics that enable enhanced functionality (including multi-functionality), constructability, sustainability, cost effectiveness or operating characteristics of highway infrastructure and system monitoring sensors to enhance highway safety, reliability, and resilience.

Human Behavior and Travel Choices — This focus area leverages research concepts from the social sciences including psychology and economics along with more traditional research for improving safety, reducing congestion, and improving the livability of the nation’s communities.

Technology for Assessing Performance — This focus area seeks novel approaches and breakthrough technology that will revolutionize the use of performance management in the highway sector.

New Technology and Advanced Policies for Energy and Resource Conservation — This focus area cuts across infrastructure, operations and societal and complex natural systems to support innovative methods for reducing highway industry costs and move towards sustainability.
What:
This program is intended to spur innovation and focus on high risk and high pay-off research. Exploratory Advanced Research bridges basic and applied research. In contrast to applied research, a specific application or product is not the goal of the work. Incremental advances and demonstrations or evaluations of existing technologies are not within the scope of this program.

The announcement includes the following topics:
  Topic 1: Virtual Nondestructive Evaluation (NDE) Laboratory for Highway Structures
  Topic 2: Applications of Massive Data and Data Mining Techniques Relevant to Safety Data
  Topic 3A: Behavioral based (or agent based) National Freight Demand Modeling
  Topic 3B: Freight Data Development and Enhancement to Support National Freight Transportation Analysis, Modeling and Forecasting Practices

The FHWA may award either contracts or cooperative agreements as a result of the BAA

Offerors should prepare proposals with a baseline period of performance up to 12 months, and if needed, with one or more options, each with a 12-month period of performance.

For the EAR program flyer, see Publication Number: FHWA-HRT-13-071

How Much: Depends on topic, but typically a topic has ~$1-2M available

When:
For FY14 Released Mar 4, 2014
Proposals Due 4:00 pm EST Apr 23, 2014

The goal of the NSF CPS Program (http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503286) is to develop the core system science needed to engineer complex cyber-physical systems upon which people can depend with high confidence. The FHWA Exploratory Advanced Research (EAR) Program provides the opportunity to translate advances in basic science in order to solve mission critical issues for highway transportation through partnerships with and beyond traditional highway research stakeholders. Successful advances in cyber-physical systems are critical for the FHWA and the entire U.S. highway transportation industry to meet increasingly complex and difficult goals from increasing safety, to reduce energy dependence, to support sustainable economic growth and increased quality of life.

FHWA has identified specific technology-based requirements to support ongoing and anticipated research road maps including for multi-modal integrated corridor management, arterial traffic management, traffic signal management and control, traffic incident and event management, and passenger and freight data management. These requirements will advance system capabilities in positioning, timing, and navigation, onboard and infrastructure-based sensors and actuators, with the aim of improving environmental awareness and responding to changing conditions, vehicle-infrastructure communications, shared human-machine control systems, data management and system performance assessment, and energy efficiency. Consideration of integration with legacy systems and equipment will be a critical component.

The program is solicited under NSF 15-541 (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503286)

Based on recent research results, anticipated results from continued research investments, and ongoing scanning of scientific and engineering advances, the FHWA EAR program has identified an area where a coordinating investment with NSF would best advance both the fundamental science of CPS and speed the application of scientific advances into the highway industry: enabling technology and scaling cyber-physical highway systems. FHWA particularly has interest in foundational technologies that can accelerate innovation, reduce cost, and lower risk of technology adoption.
Aerospace Medical and Human Factors Research
  • Aerospace Human Factors Research
  • Aerospace Medical Research

Environment and Energy R&D
  • Science and Integrated Modeling
  • Aircraft Technologies
  • Sustainable Alternative Jet Fuels
  • Operations
  • Environmental Standards, Market Based Measures and Policy Options

Modernization Highlights
  • Cost Sharing Partnership Opportunities
  • Air Transportation Oversight System (ATOS)
  • GPS Implementation in Aviation
  • Operational Evolution Partnership (OEP)
What: The FAA's COE program is a cost-sharing research partnership between academia, industry and the federal government; there are presently 8 COE. A Center develops and implements transportation programs within a FAA specified 'theme' best suited for the Center to make the most significant contribution to the transportation community.

The purposes of the education element of the program are to: build upon the strengths of existing programs at the Centers, create new innovative programs, expand graduate level transportation education in the United States, and increase the opportunities for new entrants into the field of transportation.

The purpose of the research element is to: identify and conduct high quality research that will foster significant advances in transportation science and technology and generate basic, fundamental and applied knowledge in the appropriate disciplines.

The purpose of the technology transfer element is to: ensure that the results of the research program are widely disseminated, applied, implemented and utilized. This effort requires close interaction between the universities and the entire transportation community.

A fundamental goal of the program is to: establish close linkages between education and research activities. These linkages occur through carefully designed programs that provide continuing opportunities for faculty and students to interact in the classroom and on research projects.

How Much: In past competitions FAA has provided $0.5 - 4 million a year for up to 10 years. Requires 100% matching from non-Federal sources.

When: Periodic Competitions, the last several awards have been:
- Unmanned Aircraft Systems (Mississippi State, announced 8 May 2015) 2015
- Alternative Jet Fuels and the Environment 2013
- General Aviation 2012
- Partnership to Enhance General Aviation Safety, Accessibility and Sustainability 2012

Where: https://www.cfda.gov/?s=program&mode=form&tab=step1&id=71b65bce2f0cfdabb599573bc5a2a45
The FAA Research Grants Program encourages and supports innovative, advanced research of potential benefit to the long-term growth of civil aviation and Commercial Space Transportation. The intent is to encourage applied research and development to enhance technology assimilation, transfer, and development in the FAA. The agency encourages the submission of proposals that embrace the entire spectrum of physical, chemical, biological, medical, psychological, mathematical, and engineering sciences.

The areas which contribute to the FAA mission of improving aviation safety, capacity, efficiency, and security, are:

1. Capacity and Air Traffic Control Technology
2. Communications, Navigation, and Surveillance
3. Aviation Weather
4. Airports
5. Aircraft Safety Technology
6. Human Factors and Aviation Medicine
7. Environment and Energy
8. Systems Science/Operations Research
9. Commercial Space Transportation

The FAA expects that grantees will share in the costs at a level that reflects their interest in the research, the potential benefits they may derive, and their ability to share in the cost of the project. The potential grantee may contact the appropriate FAA organization in determining levels of cost sharing prior to submitting a proposal.

**When:** This solicitation will remain open until December 31, 2019

**Where:** Further information at 609-485-4781 or email to nicole.saiauskie@faa.gov
http://www.tc.faa.gov/logistics/grants
http://www.grants.gov
What:
NHTSA is responsible for reducing deaths, injuries and economic losses resulting from motor vehicle crashes. This is accomplished by setting and enforcing safety performance standards for motor vehicles and motor vehicle equipment, and through grants to state and local governments to enable them to conduct effective local highway safety programs. NHTSA conducts research on driver behavior and traffic safety, to develop the most efficient and effective means of bringing about safety improvements.

Research Topics of Interest:

- Biomechanics and Trauma [http://www.nhtsa.gov/Research/Biomechanics+&+Trauma]
- Crashworthiness [http://www.nhtsa.gov/Research/Crashworthiness]
- Driver Simulation [http://www.nhtsa.gov/Driver-Simulation]
- Event Data Recorder [http://www.nhtsa.gov/EDR]

Who: the solicitations appear focused on companies rather than University.
The FTA has periodic, if infrequent, competitions open to proposals from private University. Two examples are:

**Innovative Public Transportation Workforce Development Program** FTA-2015-001-TRI
FTA plans to fund nationally or regionally significant public transportation workforce projects that will assist in building ladders of opportunity for American workers to move into the middle class, as well as build the critical skillset needed in the public transportation industry. FTA has budgeted approximately $9M for the program. FTA will award grants of a minimum of $200K and a maximum of $1M.

**Pedestrian Collision Warning Demonstration Project** FTA-2012-010-TRI
The main objective of this pilot is to increase pedestrian/cyclist safety through demonstration of advanced pedestrian warning system on transit buses. FTA seeks applications to demonstrate innovative technologies that support the achievement of this objective. The applicant must be a transit agency or partner with a U.S. transit agency and obtain its commitment to participate in the project. The total available funding is $400,000.

**Transit Livability Performance Measures** FTA-2011-001-LMP-TBP
The Federal Transit Administration (FTA) plans to develop measures of how well transit systems meet the needs of people in the communities they serve. Such metrics are required for evaluating the success of livability enhancement programs, and for identifying where these programs are needed. The objective of this project is to define national livability performance measures and to develop the data resources to be able to calculate these measures on an annual basis so as to track trends and progress. The scope of this effort includes both urban and rural areas with specific direction towards measures that will allow FTA to gauge the effectiveness of Federal transit livability efforts. FTA will fund three projects under this program, one in each of the three specified subject areas. Funding for each cooperative agreement under this program will range from $50,000 to $125,000. The total available funding is $300,000.
* Approval of this change is pending the FY13 budget submission to Congress.
What: The purpose of this Broad Agency Announcement (BAA) is to solicit a variety of basic and applied technology research projects that will support the strategic objectives of Office of Research and Development and the research needs of the four FRA research divisions:

- Track
- Rolling Stock and Equipment
- Train Control and Communications
- Human Factors

Projects shall develop technologies that have a direct impact on the safety and efficiency of freight and passenger rail operations in the US. Such technologies will:

- Reduce the operational and program deployment risks associated with mixed use rail lines;
- Improve safety by reducing human and technology failures;
- Bring about capital cost reductions and economy in producing equipment and facilities;
- Reduce operating costs of rail service by providing more efficient operations;
- Improve the reliability of equipment and infrastructure components by reducing failures and/or reducing false failure detections;
- Enhance the social benefits and/or environmental aspects of rail transportation; and
- Facilitate the development of domestic manufacture of rail equipment and infrastructure components.

When: Open for two years starting 14 Feb 2013