



Region 2
University Transportation Research Center

2013 UTRC REQUEST FOR PRE-PROPOSALS

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UTRC Contact:

Penny Eickemeyer, Associate Director for Research

Email: peickemeyer@utrc2.org

Phone: (212) 650-8074

or

Ellen Thorson, Ph.D., Senior Research Fellow

Email: ethor@utrc2.org

Phone: (212) 650-8144

ALL AWARDS ARE SUBJECT TO THE AVAILABILITY OF APPROPRIATED FUNDS.

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SECTION A - Introduction

Background:

The Region 2 University Transportation Research Center (UTRC) is one of ten original University Transportation Centers established in 1987 by the U.S. Congress. These Centers were established with the recognition that transportation plays a key role in the nation's economy and the quality of life of its citizens. University faculty members provide a critical link in resolving our national and regional transportation problems while training the professionals who address our transportation systems and their customers on a daily basis.

The UTRC was established in order to support research, education and the transfer of technology in the field of transportation. Success in many competitions for designation as a University Transportation Center in the U.S. Department of Transportation (US DOT) program has provided continued funding. The theme of the Center is "Planning and Managing Regional Transportation Systems in a Changing World." UTRC represents USDOT Region 2, including New York, New Jersey, Puerto Rico and the U.S. Virgin Islands. Functioning as a consortium of seventeen major Universities throughout the region, UTRC is located at the CUNY Institute for Transportation Systems at The City College of New York, the lead institution of the consortium. The Center, through its consortium, an Agency-Industry Council and its Director and Staff, supports research, education and workforce development, and technology transfer under its theme.

UTRC Consortium Members:

- City University of New York (CUNY)
- Clarkson University (Clarkson)
- Columbia University (Columbia)
- Cornell University (Cornell)
- Hofstra University (Hofstra)
- New Jersey Institute of Technology (NJIT)
- New York University (NYU)
- Polytechnic Institute of NYU (Poly)
- Rensselaer Polytechnic Institute (RPI)
- Rochester Institute of Technology (RIT)
- Rowan University (Rowan)
- Rutgers University (Rutgers)
- State University of New York (SUNY)
- Stevens Institute of Technology (Stevens)
- Syracuse University (SU)
- The College of New Jersey (TCNJ)
- University of Puerto Rico - Mayagüez (UPRM)

UTRC conducts an open, broad-based process for soliciting and selecting proposals. High-quality proposals that best match the results of the needs assessment and the objectives and research emphasis areas of the consortium will be selected for funding.

The Region 2 University Transportation Research Center (UTRC) is pleased to announce the 2013-14 UTRC Call for Proposals competitive matching grant programs for faculty-initiated projects. Funds are available in the categories of research, education, workforce development, and technology transfer. This year, UTRC will be seeking proposals in a two-part process including pre-proposal and final proposal phases. Pre-proposals will be reviewed and for those accepted, applicants will be invited to submit a full proposal, which will also undergo review.

Only faculty at institutions of the UTRC consortium are eligible to submit a proposal. Pre-proposals and full proposals will be evaluated on a **competitive basis**. Final awards will be subject to the governing requirements of the U.S. DOT University Transportation Centers Program and the Research Foundation of the City University of New York.

Program Objectives:

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

The objectives of the UTRC Call for Proposals are to:

1. Promote **excellent and innovative research projects, education, and technology transfer activities** on transportation problems relevant to U.S. DOT's Region 2 as well as the nation.
2. Provide practical and workable **contributions and solutions to the region's transportation community**.
3. Encourage **multi-disciplinary** and **multi-university** approaches to research on these problems.
4. Promote **collaboration** between traditional fields of transportation expertise (e.g. civil engineering and urban planning) and academic research centers in advanced technologies (e.g. nanotechnology, photonics, wireless communication technologies).
5. **Further the education** of transportation students by involving them in scholarly research.
6. **Encourage faculty** in the UTRC consortium to compete for research funds.

7. Promote high-quality research on the ***development, demonstration, or implementation of advanced technologies*** in the transportation field.
8. ***Encourage partnerships*** among universities, public agencies, and the private sector.

Section B – Pre-proposal Categories

The program is divided in six funding categories and each proposal must clearly specify the category, in which the proposal is submitted, addresses our research focus areas, and responds to at least one of the USDOT strategic goals.

Funding Categories:

*Below are the **four categories** of projects to be considered for funding:*

1. Faculty-Initiated Research:

The primary purpose of this program is to ***fund novel and exciting ideas from faculty*** in the area of transportation. The projects funded should seek to promote excellent and innovative research on transportation problems relevant to U.S. DOT's Region 2. Proposals will be peer-reviewed by an ad-hoc committee of researchers at other UTCs, and by practicing professionals at agencies within Region 2. Reviewers will score proposals according to the quality of the research plan; qualifications of the team; relationships of proposed work to other work in the field; degree of innovation; degree of support given to students; collaboration across disciplines and/or universities; feasibility of schedule and work plan; and relevance to Region 2's needs, UTRC's Theme, and USDOT strategic goals.

Projects funded in this category will be limited to a maximum of \$80,000 of UTRC funds.

2. Emerging Investigators Program*:

This program is to ***assist faculty (especially junior faculty)*** at UTRC member institutions to learn to write competitive research proposals and to develop relationships with funding agencies. This program will help fund ***exploratory*** research by faculty. This program would support faculty throughout the UTRC Consortium. The grant will support the development of a paper on an emerging transportation issue of the proposer's choice.

Projects funded in this category will be limited to a maximum of \$15,000 of UTRC funds.

3. Research Cluster Teams*:

The Center will support collaborative Research Focus Teams consisting of faculty, students, and transportation professionals, drawn from throughout the UTRC consortium and organized around a specific transportation issue. The teams should be composed of leading researchers, faculty, students, and institutions engaged in transportation research and the synergistic exchange of ideas and resources.

The purpose of these teams will be to develop consensus statements of research needs in collaboration with the region's public agencies and to further promote dialogue between the universities and transportation professionals in the region and nationally.

UTRC will accept proposals from one or a group of faculty that seek to initiate and lead a focus area group. Research clusters should include researchers from multiple institutions. The proposal should clearly describe the focus areas of the team, potential participants, activities, and expected products generated by the team.

Teams may spend UTRC grant funds on workshops, trips to speak to funding agencies, release time, collaborator forum meetings, or other ways to bring a diffuse but related group of research entities into sustainable, productive collaboration.

Proposals funded in this category will be limited to a maximum of \$15,000 of UTRC funds.

4. Education and Technology Transfer*:

Projects under this category include **outreach activities** to advance the awareness of the general public, policy makers and transportation organizations on the issues, consequences, objectives and resources, associated with the USDOT strategic goals.

Examples of activities**:

- **Research Conferences** – Expenses associated with hosting transportation research conferences and workshops. (No funding will be provided for travel or registration to participate in conferences elsewhere, foreign travel, and meals).
- **Workforce Training Programs / Research Implementation Workshops / Technology Transfer Seminars** – Travel and other costs associated with providing training to public agency employees on the outcomes of university research.
- **Curriculum Development Workshops and Other Initiatives** – Exploring new fields and areas of transportation knowledge. Bringing faculty together to discuss new approaches to course and curriculum design.

- **Community Partnerships** – Grants to facilitate student coursework that directly addresses a real transportation need in a local community, e.g. a studio class organized in partnership with a public agency or community group.
- **Exchange Programs** – Funding to allow students and faculty to collaborate across universities by spending time in residence at another campus within UTRC or the USDOT University Transportation Centers program.

Proposals funded in this category will be limited to a maximum of \$15,000 of UTRC funds.

* A minimum of 50% of no Federal-matching fund is required.

**If awarded, costs eligible for the UTRC grant must be explicitly discussed with the UTRC Program coordinator.

Strategic Goals and Focus Areas:

UTRC has defined eight research focus areas that combine the diversity of UTRC knowledge to address the articulated problems facing our region and the nation, responding to the five USDOT's strategic goals and pursuing our Center's theme of "Planning and Managing Regional Transportation Systems in a Changing World".

USDOT Strategic Goals:

Safety

Improving transportation safety remains DOT's top priority. DOT's goal is to bring a department-wide focus on reducing transportation-related fatalities and injuries. DOT highlights roadway safety for all users; combating distracted driving and other dangerous behaviors; the need for a more effective Federal role in transit safety; and addressing the most serious safety risks in other surface transportation modes and in aviation.

State of Good Repair

Recent reports on the condition of key facilities—highways, bridges, transit systems, passenger rail and airport runways—reveal that many fall short of a state of good repair and thus compromise the safety, capacity, and efficiency of the U.S. transportation system. DOT will bring a strong programmatic emphasis and new resources to improving the condition of US infrastructure. DOT will encourage its government and industry partners to make optimal use of existing capacity, minimize life-cycle costs, and apply sound asset management principles throughout the system.

Economic Competitiveness

With demand for both freight and passenger transportation expected to more than double by 2050, DOT's goal is to support the U.S. economy by fostering smart, strategic investments that will serve the traveling public and facilitate freight movement. DOT's central strategies for achieving maximum economic returns on its policies and

investments include leading the development of intercity, high-speed passenger rail and a competitive air transportation system; increasing travel time reliability in freight-significant highway corridors; improving the performance of freight rail and maritime networks; advancing transportation interests in targeted markets around the world; and expanding opportunities in the transportation sector for small businesses.

Livable Communities

Fostering livable communities—places where coordinated transportation, housing, and commercial development gives people access to affordable and environmentally sustainable transportation—is a transformational policy shift for DOT. Over the last 50 years, transportation spending has often been poorly coordinated with other infrastructure investments resulting in auto-dependent residential communities where access to job opportunities and key amenities is inadequate and expensive. DOT will pursue coordinated, place-based policies and investments that increase transportation choices and access to public transportation services for all Americans.

Environmental Sustainability

Transportation is crucial to the U.S. economy and quality of life, but building, operating, and maintaining transportation systems clearly have significant environmental impacts on U.S. air, water, and natural ecosystems. The transportation sector is a significant source of greenhouse gas (GHG) emissions, accounting for 33 percent of total U.S. GHG emissions in 2009. DOT will address these challenges through strategies such as fuel economy standards for cars and trucks, more environmentally sound construction and operational practices, and by expanding opportunities for shifting freight from less fuel-efficient modes to more fuel-efficient modes.

UTRC Research Focus Areas:

UTRC focus areas represent major research areas critical to the needs of Region 2 within the federal objectives that pre-proposals should focus on. They include: economic competitiveness, financing, freight productivity, system modernization through information technologies, safety through communications and other technologies, Infrastructure state of good repair, livable communities, and planning for extreme events.

Focus Area 1: Enhancing understanding of the economic impacts of transportation investment

Transportation infrastructure investment has a direct impact on economic activity due to direct job creation of a project and the following macroeconomic impact of regional multipliers. Achieving the maximum net economic benefit from our transportation investments is essential in this period of economic hardship and difficult budget choices at the Federal, State, and local levels. DOT is committed to fostering policies and investments, including investment in the transportation workforce of the future that will

produce the greatest economic benefit for the broadest number of citizens and businesses and will lay the groundwork for long-term economic growth and prosperity.

Focus Area 2: Practices, partnerships, and mechanisms for financing transportation systems

Currently, federal, state, local, and private system operators are struggling to finance transportation infrastructure and operations. Limited funding at both the federal and state levels due to an inability to find alternative sources of revenue has led to poor maintenance of transportation infrastructure which in turn, leads to potentially dangerous conditions on many older bridges and road facilities. In considering new financing approaches, a number of fiscal and administrative challenges will need to be addressed.

Focus Area 3: Promoting freight productivity, efficiency, and sustainability through multi-modal policy, planning, and logistics

Freight transportation is critical to support livable communities and economic competitiveness. At the same time, freight vehicles and facilities are not without impacts on surrounding communities, infrastructure, and the environment. Mirroring the broader US system, Region 2 is home to a vast, multi-modal freight infrastructure that includes highways, rail, marine ports, airports, and international border crossings. The region is challenged to provide multi-modal freight access to support industry productivity and safe, reliable, and efficient movement of goods between shippers and receivers while at the same time minimizing the impact of freight on infrastructure, traffic conditions, and the environment.

Focus Area 4: System modernization through implementation of advanced and information technologies

Recent technology advances have revolutionized the methods of communications between transportation system operators and users, and between infrastructure and system users. Through implementation of roadside, station, and in-vehicle technologies, and especially with rapid integration of smartphones and other handheld computers, users now have the ability to receive transportation information in real-time. Continued research can result in implementation of significant advancements, particularly through partnerships between private developers, transportation agencies and academic researchers.

Focus Area 5: Planning, monitoring, and implementation of communications and other technologies to understand and improve multi-modal transportation safety

Safety remains the top priority in development and operation of national, regional, and local transportation systems. Accidents result from both human errors and environmental factors. Significant research is still needed to understand contributing variables and to implement solutions through vehicle and infrastructure design improvements or through operational and communications improvements.

Focus Area 6: Infrastructure design, monitoring, inspection, and management to ensure a State of Good Repair

The United States has invested trillions of dollars in what is arguably one of the finest transportation systems in the world. As the country continues to grow, there will be continued pressure to expand this system to handle the increase in personal and freight mobility that characterizes economic prosperity. However, perhaps the most significant need and challenge facing the Nation's transportation system is keeping the existing highways, bridges, transit facilities/equipment, ports and airports in a state of good repair.

Focus Area 7: Promoting livable and sustainable communities through quality of life improvements and diverse transportation development

In its draft Strategic Plan, USDOT defines livable communities as "places where transportation, housing and commercial development investments have been coordinated so that people have access to adequate, affordable, and environmentally sustainable travel options." Achieving livability requires integration of land-use and transportation planning, as well as economic development, to ensure that residents have access to needed goods and services.

Focus Area 8: Securing transportation systems and improving planning for and response to extreme events

Transportation systems are highly vulnerable to extreme events by virtue of several properties associated with their design and use. A key transportation characteristic contributing to both to its attractiveness and vulnerability is the concentration of facilities and users in ways that potentially maximize consequences of extreme events.

Section C – Guidelines for Submitting a Pre-proposal

In addition to research, education and workforce development and technology transfer components could be built into the proposed research work. Pre-proposals specifically focusing on education, workforce development or technology transfer may also be submitted.

Pre-Proposal Submission:

1. Complete the UTRC Pre-proposal Submission Form and provide a two-page write-up of the project you are proposing. The Pre-proposal submission form is posted with the RFP at <http://www.utrc2.org/research/rfps>
2. Prepare an estimated budget total, including the institution(s) indirect cost rate, and a justification for the budgeted items. For collaborative pre-proposals, a separate budget should be provided for each participating university. The template for the budget is available at www.utrc2.org/resources: [Template for Faculty Initiated Proposals - Budget Tables](#)

3. Include the name of the source that you anticipate will provide matching funds. For collaborative pre-proposals, this must be included for each university.
4. **Pre-proposals** must be submitted **electronically in Microsoft Word or pdf format** and **Budgets** in **Microsoft Excel format**, through the [UTRC Online Submission System](http://www.utrc2.org) (visit www.utrc2.org).
5. Instructions for the full proposal submission process will be provided when invitations are made and will be posted on the UTRC website.
6. Include brief curricula vitae of all principals responsible for the study (not to exceed two pages each).

A non-Federal match of not less than 100% of the UTRC funds is required for all funding categories except for categories as indicated above with a (*) which require a 50% match.

Pre-Proposal Evaluations

Pre-proposals require submission of a general information form (see appendix) and a two-page statement of work along with an estimate of the proposed budget. If the proposed work is collaborative, the pre-proposal must include separate budgets from each participating institution.

The pre-proposals will be evaluated by external reviewers knowledgeable in the respective subject. These reviewers will evaluate the pre-proposals (according to specific criteria) and provide UTRC with their recommendations. A subset of the pre-proposals will be selected and invitations for full proposals will be announced.

The reviewers will be asked to evaluate the pre-proposals based on the following criteria:

- Relevance to the UTRC themes and priorities
- Collaborative activities
- Innovation and originality
- Soundness of method
- Personnel, facilities, budget, and other resources
- Educational component
- Transferability of results and products
- Technology transfer component
- Workforce development component