

Call for Research Project Proposals for Year Three

The National University Transportation Center (UTC), National Center for Transportation Infrastructure Durability & Life-Extension (<https://tridurle.wsu.edu/>), led by Washington State University (WSU), is now soliciting project ideas from researchers at [consortium member universities](#). Individual research projects are selected through a rigorous peer-review process, on an annual basis. For each proposed project with a single institution and a single principal investigator (PI), the project can be funded in the range of \$40,000 to \$90,000 (annual TriDurLE funds); whereas for each single- and multi-institution proposal with multiple co-PIs, this federal funding amount could be in the range of \$50,000 to \$100,000 per institution per year. A single proposal written by collaborating PIs should be submitted just once, which will cohesively integrate all technical and educational tasks required to complete the intended multidisciplinary or multi-institutional research.

Proposals that are part of a multi-year project may also be considered; in such a case the PI(s) should clearly explain the long-term goals, present phased tasks to accomplish project objectives, and provide the detailed scope of the tasks this year (i.e., Year Three) while briefly summarizing the scope for subsequent year (**Note: the availability of Year Four funding for TriDurLE remains uncertain at this stage**). If a project has been sponsored by TriDurLE or other UTCs for two years (typically in the form of Phase I and Phase II), then it is no longer eligible for funding by TriDurLE. If you have questions, please reach out to the TriDurLE Director for clarification before starting your proposal preparation.

The number of research projects to fund at each university site will be constrained by the total budget allocated for that site and the quality of proposals that year. At the discretion of the TriDurLE Director, we may also allow projects that are more than 16 months in length but with funds requested from TriDurLE less than the annual budget of that university site.

In all cases, a minimum of **100% non-federal match** is required. The Year Three projects will be solicited based on the Fixing America's Surface Transportation (FAST) Act research priority area of “**Improving the Durability and Extending the Life of Transportation Infrastructure**” by conducting multi-disciplinary, multimodal research, education and diversity, workforce development, collaboration, and technology transfer. The projects shall reflect the vision of TriDurLE: “*cost-effective innovations and holistic solutions to enhance multimodal infrastructure durability*”.

The research activities of TriDurLE will be categorized into six interrelated thrust areas as follows, which will be supplemented by educational and technology transfer activities to maximize synergies and adaptability across multiple disciplines or multiple transportation modes:

1. **Management:** Asset management and performance management for enhanced durability and life-extension of transportation infrastructure.

2. **Monitoring:** Condition monitoring, remote sensing, and the use of GPS for enhanced durability and life-extension of transportation infrastructure.
3. **Addressing corrosion** of transportation infrastructure assets
4. **Addressing aging** and other materials-related durability distresses of transportation infrastructure through the use of *new materials, technologies, and construction methodologies*.
5. **Addressing natural hazards and extreme disaster events** that threaten the durability and service life of transportation infrastructure.
6. **Maintenance intervention and rehabilitation** of transportation infrastructure through advanced materials, technologies, and construction methodologies.

All research proposals should be submitted to Dr. Xianming Shi at TriDurLE@gmail.com by 5:00 PM Pacific Time on Thursday, **June 30, 2022**. Funding for successful proposals may be available on or before **August 12, 2022**.

TriDurLE encourages researchers to submit competitive proposals pursuing innovative research that will further the mission of this National UTC.

Proposal Submission Guidelines

The proposal should be NO MORE THAN a total of **12 pages**, excluding references, Data Management Plan, and a one-page resume for each PI/Co-PI. In a Times New Roman font size at least 11, single spacing. The proposal should include the following sections:

1. Title of Proposed Project
2. Consortium Member University/Universities
3. PI/Co-PI(s): Name, title, affiliation, and contact information.
4. Project Abstract: No more than 300 words. An illustrative graphic is optional but desirable.
5. Problem Statement and Research Background: Justify the need for research with an adequate background, including state of the art, and clarify the proposed innovation. Explain relationship with completed or ongoing research so as to minimize the risk of duplication while leveraging the existing knowledge.
6. Project Goal and Objectives: State the overall goal of the project alongside the relevancy to **one or more of the six TriDurLE thrust area(s)** (see above), and the specific project objectives.
7. Work Plan: Describe a general framework with planned technical/educational tasks and approaches, and expected outputs.
8. Proposed Work Schedule and Milestones
9. Elements and/or Plan for Collaboration: Preference will be given to those involving collaboration across member universities, thrust areas, and disciplines. TriDurLE **requires** the proposed research to include at least one of the following collaboration features:
 - 1) Collaborations with other relevant UTCs



- 2) Collaboration with practicing engineers or industry organizations to effectively translate research into practice
 - 3) Collaboration with other funding sources (e.g., private sector, state DOTs, and national and international institutions)
 - 4) Collaboration with TriDurLE member universities to leverage experience, resources, and facilities
10. Plan for Student Involvement as well as Outreach and Diversity (required): Describe measurable outcomes from participating students (ideally from underrepresented groups) and outreach activities with an emphasis on fostering next-generation workforce. At a minimum describe one student engagement event and another outreach event that will be implemented during the project duration.
11. Research Results, Technology Transfer, and Potential Benefits: Provide expected deliverables from the proposed research project. Also, consider potential stakeholders and how the results can be implemented. Technology transfer should be an important part of the proposal in order to facilitate the implementation and holistically benefit the transportation community.
12. Amount of UTC Funds Requested and Budget Details: Enumerate budget items to successfully conduct the proposed research tasks and provide the contribution of key personnel, staff, and students.
13. Non-federal Match: Demonstrate the source of non-federal matching funds. Examples are faculty research time (academic year salary), waived indirect costs, material donations, in-kind supports, and research expenses at collaborative institutions outside the UTC network. Non-university partners are particularly desirable, such as funds or in-kind contributions by state DOTs, local agencies, private industry, and foundations.
14. Data Management Plan: Summarize a plan for managing data acquired from research activities, particularly when personal identity, patents, and proprietary information are involved. If the research requires Institutional Review Boards (IRB) approval for human subject research, necessary documentation shall be included. This section will not be counted against the 10-page limit.
- Note: If funded, the PI will be asked to comply with the Data Management Plan developed by TriDurLE for consistency.
15. References: Provide literature cited in the proposal. This section will not be counted toward the 10-page limit. The format of references is not specified; however, it needs to be consistent within the proposal.
16. Appendix A. CV of PI/Co-PI: Provide a one-page resume for each PI or Co-PI. This section will not be counted against the 10-page limit.
17. Appendix B. Cost Share Commitment Letter(s) or Letters of Support (if collaborating agencies or industry partners have been identified). This section will not be counted against the 10-page limit.

Budget Considerations

- Proposal budget should be in the format as required by USDOT, which is provided on Page 5.
- The budget should include travel funds for attending the annual workshop/symposium of TriDurLE (location to be determined) to share research findings with the TriDurLE community and other attendees.

Review Process

- A peer-review process will be employed to select research projects for funding, and preference will be given to those that involve collaboration across member universities, thrust areas, and disciplines. The review will focus on immediate and practical impacts on the state of the art of transportation-related research
- An anonymous review committee, consisting of three members representing academia, government, and/or private sector, will conduct peer-reviews for each submitted proposal. **In the case of difficulty in securing three qualified reviewers, two reviewers would be allowed.** A **Site Director** of TriDurLE will subsequently review the results and make recommendations to the Center Director, for proposals submitted from his/her own institution. Reviews should be completed within three weeks after submission, and decisions will be announced thereafter (typically within a few days).
- For any proposal where any Site Director is part of the research team, the proposal peer review process will be managed by the TriDurLE Director. For any proposal where the TriDurLE Director is part the research team, the proposal peer review process will be managed by one of the Site Directors at non-WSU university. This serves to proactively avoid any actual or perceived Conflict of Interest and facilitates professional and high-quality peer reviews.

Review Criteria

The proposals will be evaluated according to the following criteria:

- 1) Does the proposed topic include collaborative subjects?
- 2) What type of non-federal match will the project offer? Hard cash is preferred over in-kind contributions or teaching salaries.
- 3) Does the proposed topic contribute to the mission and one or more of the TriDurLE's thrust areas?
- 4) Does the project demonstrate intellectual merits? The project should either tackle entirely new topics or take advantage of prior research to expand the scope and value of the research without replicating previously answered questions. Past projects (e.g., by State DOTs, other UTCs, FHWA, NCHRP, ACRP, and SHRP 2) and established knowledge should be leveraged wherever suitable to enhance the quality and efficiency of the research. PIs are encouraged to make every effort to minimize potential overlap and maximize synergies in research activities.

- 5) Does the project provide implementable outcomes including knowledge that is transferable to relevant agencies and professionals?
- 6) Does the project provide training **or outreach/diversity** opportunities to enrich the transportation community?
- 7) Does the project take advantage of industry resources and/or engage potential stakeholders, i.e., leveraging the UTC funds for other funding programs? The proposed project should leverage resources wherever appropriate and may engage stakeholders to facilitate implementation.
- 8) Do the project scope, budget, data, and schedule appear feasible?
- 9) Do the principal investigators have a good track record for providing deliverables and completing the project on-time?
- 10) Is the proposal well-written, easy to follow, and thorough?

Due dates for the current Request for Proposals

Email submission deadline for all project proposals: Thursday, **June 30, 2022. 5PM Pacific Time.**
Decisions to PIs: **Friday, July 22, 2022.** Funding of a proposed project may be provided on the condition that the scope is modified to better meet the needs and constraints of the Center. For example, if two projects are submitted separately that seem to be tackling a similar topic area, the Center may identify the opportunity for a joint proposal and ask the PIs to consider. For collaborative proposals from two or more institutions, a single proposal should be submitted; however, the match needs to come from each institution and should be reflected in each institution' budget. In some cases, the Center may ask the PI to modify or reduce the budget, scope, etc.

Revised Proposal (if a major revision is requested): **Friday, August 5, 2022. 5PM Pacific Time.**
Anticipated period of performance for the Year Three research: start date: **April 1, 2022 or later**; end date: up to **Sept. 30, 2023**).

Questions

If you have any questions please don't hesitate to contact the Director of TriDurLE, Dr. Xianming Shi at TriDurLE@gmail.com.

Budget Form (required by USDOT OST-R)

CATEGORY	Budgeted Amount from Federal Share	Budgeted Amount from Matching Funds	Explanatory Notes
Center Director Salary	DO NOT put any into this row unless you are the Director of TriDurLE.	DO NOT put any into this row unless you are the Director of TriDurLE.	DO NOT put any into this row unless you are the Director of TriDurLE.
Faculty Salaries			
Administrative Staff Salaries			
Other Staff Salaries			
Student Salaries			
Staff Benefits			
Total Salaries and Benefits			
Student Tuition			
Permanent Equipment ¹			
Expendable Property, Supplies, and Services ²			
Domestic Travel			
Foreign Travel ³			
Other Direct Costs (specify) ⁴			
Total Direct Costs			
F&A (Indirect) Costs			
TOTAL COSTS			

¹ Permanent Equipment includes any item of equipment having a unit acquisition cost of \$5,000 or more. Per the grant's *General Provisions* document, written permission must be obtained from OST-R prior to the purchase of such equipment.

² Expendable Property, Supplies, and Services include such tangible items as office and laboratory supplies and such intangible services as telecommunications.

³ Foreign Travel includes travel to or from any destination outside of the United States and its territories. Per the grant's *General Provisions* document, written permission must be obtained from OST-R prior to the initiation of such travel, or such travel may not be funded under the grant.

⁴ Itemize other anticipated direct costs not mentioned above.