# Request for Proposals Translate Research to Practice
http://nitc.trec.pdx.edu/

# 1  Overview

The **National Institute for Transportation and Communities** (NITC) is a national University Transportation Center funded by the U.S. Department of Transportation. NITC is a Portland State-led partnership with the Oregon Institute of Technology, University of Arizona, University of Oregon, University of Texas at Arlington, and University of Utah.

This request for proposals is for projects that translate past NITC research into practice. This RFP will not fund additional original research. Researchers will build on previous research accomplishments and strengthen partnerships with transportation agencies and community organizations. We aim to demonstrate that NITC research is directly useful to practitioners and impacts transportation practice and policy regionally and nationally. Projects selected for funding will deliver products to practitioners.

As part of NITC's Technology Transfer plan submitted to the US DOT, we have a Technical Readiness Level (TRL) scale, as shown in Table 1. This funding will support projects that can attain Deployment (Level 4) and Implementation (Level 5) on the TRL scale. For example, it could help move past NITC research that resulted in Proving a Concept (Level 3) to take the research results to Deployment or Implementation or expand efforts of past projects at the Deployment or Implementation to other sites, cities or locations . (See Appendix for a detailed FHWA TRL scale.)

**Table 1: NITC's Technology Readiness Level (TRL) Scale**

| Scale | Level | Description | Action Required |
|-------|-------|-------------|-----------------|
| 1 | Basic Research | No implementation expected - basic research, syntheses, exploratory, etc. | Dissemination of results |
| 2 | Development | Research findings are not yet ready for deployment or implementation. Project aims to further develop research. | Dissemination of results |
| 3 | Proven Concept | Research findings are proven valid in a laboratory or individual environment, but not ready for deployment at a "larger" scale. | Dissemination of results |

| 4 | Deployment | Research project targets specific practice, application or agency. Examples include demonstrations, pilot projects, proof of concept, feasibility studies. | Dissemination of results, Implementation Plan |
|---|---|---|---|
| 5 | Implementation | Adoption of results into practice. Examples include: informing or updating policy, design guidance, specification updates, process change, commercialization. | Dissemination of results, Implementation Plan |

We estimate awarding up to $350,000. Individual project requests should range from $25,000 to $75,000. Projects should aim to take six to nine months. All awards require a 1:1.2 non-federal match as outlined in section 6.1.

Possible activities include:

1. Developing a tool (e.g. guidebook, software, spreadsheet) that translates the research findings to practice
2. Preparing a synthesis of research from several projects on a single theme that then can be directly used by practitioners in implementing the research
3. Conducting pilot projects with agencies to implement research results
4. Technical assistance or training materials to implement results
5. Documenting impacts of NITC research, including case studies, and sharing those results to further implementation
6. Curriculum development based off of NITC-funded research (e.g., university level, K-12, or professional development courses)

If you have any questions about whether your proposal topic is appropriate, please contact NITC staff in advance.

## 1.1  Key dates

- Proposals may be submitted for one of two deadlines: June 28, 2021 and September 1, 2021. NITC will have funding available to award for each deadline.
- Project review and selection will take about one month
- Earliest projects can begin: August 1, 2021
- Project task orders will be no longer than 12 months, including the time for review of final products

# 2  Eligibility

Faculty members and research faculty must be from Portland State University, Oregon Institute of Technology, University of Arizona, University of Oregon, University of Texas at Arlington, or University of Utah to be eligible to serve as PIs and submit proposals.  The lead PI must hold a primary, full-time, paid

appointment in a research or teaching position, with exceptions granted for family or medical leave, as determined by the submitting institution.

**Either the lead PI or a co-PI must have received past NITC funding for a research project that is the basis for their Translate Research to Practice proposal.** Proposals may include multiple investigators. Proposals including multiple investigators must identify one lead PI contact responsible for reporting and associated administrative tasks. NITC Executive Committee members are allowed to submit proposals, but are not allowed to be involved during deliberations and decisions related to their proposals and will not be privy to the information discussed.

# 3   Criteria for Evaluation

NITC will recruit a panel of practitioners, and each proposal will be reviewed by at least three practitioners. Proposals are also scored by NITC staff using the programmatic criteria. The external peer review and programmatic numerical scores are then used in the proposal selection process. The Executive Committee selects the final slate of proposals via consensus. Executive Committee members with conflicts of interest around specific projects will excuse themselves from discussions that could influence funding outcomes from which they would benefit.

## 3.1   Practitioner Review Criteria

The primary criterion for evaluation is whether the project will impact practice. This can be demonstrated as follows:

- The product and its intended outcomes are clearly defined
- The proposal demonstrates a clear understanding of practitioner needs
- The proposal explains how and why the product will achieve those outcomes.
- The timeline is reasonable and the steps are clear for achieving deployment or implementation
- The project involves product end-users (public agency and/or private sector partners)
- The project team has the necessary resources and expertise
- The product will have long-term usefulness

Reviews are single-blind and reviewers will remain anonymous. Reviewers are transportation practitioners from local, regional and national agencies, and the private sector. An established procedure for reviewer conflict of interest is followed.

## 3.2   Programmatic Criteria

The following criteria will also be used in proposal selection:

- What is the PIs past performance on other UTC projects (e.g., on time reporting, etc.)? NITC will not fund proposals from PIs or Co-PIs with incomplete projects and outstanding final reports.
- Does the project support equity in transportation?
- Is there potential national impact in application?
- Cash match is weighted more heavily

# 4   Project Requirements

PIs must provide semiannual progress reports on their funded project needed by NITC to meet federal reporting requirements. Adequate progress and performance on previously funded research are

overriding considerations for the funding of future grants, including this RFP. Those that have not submitted progress reports or final reports will not be considered for funding and risk having funds withheld from current grants. Similar restrictions will apply to any future NITC funding opportunities.

## 4.1  Progress Reports

Semiannual progress reports are required as long as the project is active. These reports will support NITC's federal reporting responsibilities. Reports will be submitted online and include: accomplishments, dissemination activities, products (e.g. submitted publications, conference presentations, etc.), impact of the project, and changes/problems. As part of each progress report, we will also require information regarding undergraduate and graduate students participating in the research.

## 4.2  Final Reports/Products

NITC expects that the PI will submit two project deliverables. The first is the "final product." This is the product that will be used in practice, e.g. the handbook, tool, pilot project documentation, training materials, etc. Your proposal must detail what the final product(s) will be. The second output is a brief "final report" documenting the approach and process and reflecting on its success. The final report is expected to be brief and no more than 10 pages long. The final report will be produced as part of a numbered report series, and will include the US DOT disclaimer and NITC funding attribution. All final reports will be posted online. NITC will work with PIs to post or link to final products on the NITC website and to include appropriate disclaimer language and attribution for final products. More details about project requirements can be found in the "*Principal Investigators' Handbook*" posted online.

# 5  Budget

Applicants must use the NITC Translate Research to Practice Budget Form. Proposal budgets should be cost-effective, and primarily direct new and original work. Funds should be spent in a manner that provides publishable and/or implementable results. In general, faculty salary (summer or academic year), student support, and tuition/fee reimbursement are allowable expenses. An appropriate amount of funding for travel for training practitioners, piloting a project, or data collection purposes is allowable but justification should be given. Materials and supplies are allowable provided that they are a direct expense related to completing the work. Federal indirect costs (overhead) specific to each NITC university and OPE (fringe benefits) should also be included in the budget.

Equipment purchases (equipment is generally defined as items over $5,000) and international travel are not permitted. Budget for expenses normally considered part of university F&A (phones, facilities, regular office supplies, computers, etc.) should not be included.

Non-NITC partners including private consultants may be only included in the proposal if the role is less than 20% of the requested project budget. Because the focus of these projects is transfer to practice, academic research partners outside of NITC are strongly discouraged. Priority will be to fund NITC PIs. If PIs anticipate the **sub-consultant role will be 20% or more** of the requested project budget, justification and budget details must be submitted to Brendan Williams (brendan.williams@pdx.edu) at least two weeks before the proposal deadline for approval by the Executive Committee. Approval is granted when it is determined that success of the project requires significant involvement, 20% or more of the budget from the sub-consultant and that the expertise and effort required of the sub-consultant is not available from within the NITC partner campuses.

Funding for salary that goes beyond normal academic or summer compensation will not be allowed. In the case of joint projects with faculty from other NITC universities, the second university activity should be budgeted as a separate budget for that university. In addition:

- For projects submitted by the June 28, 2021 deadline, projects should be budgeted to begin no sooner than August 1, 2021 and completed no later than September 15, 2022. Although the start date is flexible, each project can last no longer than 12 months. For projects submitted by the September 1, 2021 deadline, projects should be budgeted to begin no sooner than November 1, 2021 and completed no later than October 30, 2022. The project timeline and budget should include a plan to submit the draft final report no later than one month prior to the project end date. We do not plan on granting no-cost extensions for these projects.
- New awards to prior investigators will depend on successful completion of previously-funded projects and timeliness of research progress and reporting.
- NITC reserves the right to request reductions or other changes to budgets of submitted proposals.
- Awards are cost-reimbursable.

## 5.1   Matching Funds

All awards require 120% non-federal match in the form of cash or in-kind services from project partners—including universities, transportation and other public agencies, industry, and nonprofit organizations. Match funding is a good indication of partner commitment to the project and will be considered in the programmatic review.

In general, federal funds are not eligible as match with the following exceptions: specifically funds under U.S.C. Title 23, Sections 503, 504(b), or 505, which refer to technology deployment, local technical assistance, state planning and research (SPR) programs and National Cooperative Highway Research Program (NCHRP) managed by the Transportation Research Board.

PIs must indicate match on the Budget Form A*wards will not be finalized without confirmation of the match commitment*. Sample third party match commitment letters can be found on the NITC website. For more information regarding Match, please refer to the "Match FAQ" document found at https://nitc.trec.pdx.edu/for-researchers.

NITC follows the rules set forth in 2 C.F.R. 200.306, https://www.ecfr.gov/cgi-bin/text-idx?SID=74f820833867201a25d3f0148ada5daa&mc=true&node=se2.1.200_1306&rgn=div8, for the use of in-kind and cash contributions as matching funds. The start date of matching funds is November 30, 2016.

# 6   How to Apply

Applicants must submit their application package to the online Project Proposal Management System (PPMS). As you are getting ready to apply, please consider the following:

- Sign into your account: http://ppms.trec.pdx.edu. User guides for PPMS can be found in the Resource Section of NITC's For-Researchers webpage. If you have any issues, contact Brendan Williams (brendan.williams@pdx.edu).
- All investigators listed on the proposal form are required to provide an ORCID.

- To submit your proposal:
- Log into PPMS (http://ppms.trec.pdx.edu/)
- Select the 'NITC 16 Translate Research to Practice' grant cycle
- Create your proposal starts by submitting a title and abstract for your project

## 6.1    Project Proposals, Data Management Plan (DMP), and Budgets

Forms for the proposal and budget as well as a DMP guide that includes a DMP template can be found on the NITC website (http://nitc.trec.pdx.edu/for-researchers). **Do not use prior year forms.** The DMP is required for projects that are working with data and are limited to two pages. Please adhere closely to the template when creating your DMP. If your project does not include data, then submit a document as the DMP stating that no data will be used in this project.

To finalize and submit your application:
- Save the proposal form and DMP as a PDF (as separate documents) and the budget form as an Excel spreadsheet
- Log into PPMS, select the project, and enter the remaining project information (Co-PIs, Budget information, Match, etc.)
- Upload your Proposal, DMP, and Budget
- Submit your proposal by end of day, June 28 or September 1, 2021

**Proposals, budgets, and DMPs are required** to qualify for funding. Incomplete or late application packages will not be considered.

# 7    Institutional Approval

NITC grants should be treated similar to other external grants. Accordingly, at each institution, proposals should be reviewed and approved by their home institution's research administration office prior to submitting your proposal in PPMS. A specific Letter of Commitment from the PIs home institution will acknowledge this approval. The letter must indicate the institution's amount requested and the amount of match (including 3rd party) they will document. The letter must be signed by an institution's official authorized to obligate cost share. If applicable, 3rd party letters of intent or other documentation of match commitment should also be included with the Proposal Form. For Portland State University only, a Proposal Internal Approval Form will be submitted in lieu of an Institutional Letter of Commitment. Further questions regarding university approval should be directed to the home university research administration office or the home university Executive Committee member:

- **Oregon Tech:** Sponsored Projects and Grant Administration: http://www.oit.edu/faculty-staff/sponsored-projects-grants-administration
  Preliminary approval form: http://www.oit.edu/docs/default-source/spa/proposal-approval-form.pdf?sfvrsn=4
- **PSU:** Proposal Internal Approval Form (PIAF): https://nitc.trec.pdx.edu/for-researchers
- **UO:** Apply through Electronic Proposal Clearance System (E-PCS) and Sponsored Projects Services: http://orsa.uoregon.edu/
- **UA:** Engineering Research Administration Services (ERAS) or Sponsored Projects & Contracting Services (SPCS): https://rgw.arizona.edu/administration/getting-started
- **UTA:** Office of Grants and Contract Services: http://www.uta.edu/research/administration/departments/gcs/university-process/index.php
- **UU:** UU Office of Sponsored Project: http://www.osp.utah.edu/

# 8  Contact Information

For questions about research proposals, please contact Brendan Williams, Research Program Administrator, brendan.williams@pdx.edu. Each campus has a representative on NITC's Executive Committee who can discuss the process:

- Marc Schlossberg, University of Oregon, 541-346-2046, schlossb@uoregon.edu
- Keith Bartholomew, University of Utah, 801-585-8944, bartholomew@arch.utah.edu
- Roger Lindgren, Oregon Institute of Technology, 541-885-1947, roger.lindgren@oit.edu
- Liming Wang, Portland State University, 503-725-5130, limwang@pdx.edu
- Arlie Adkins, University of Arizona, 503-880-3110, arlieadkins@email.arizona.edu
- Stephen Mattingly, University of Texas, Arlington, 817-272-2859, mattingly@uta.edu

# 9  Proposal Checklist

- **Proposal Application** (PDF). *Did you include the ORCID of all investigators? Are the preparation of your data package and its documentation included in your tasks?*
  Does the proposal include the following documents?
    - Institutional Letter of Commitment – except PSU
    - Proposal Internal Approval Form (PIAF) – PSU only
    - If applicable, 3rd party match documentation
  *Proposals without university approval will not be considered.*
- **Budget** (Excel file; current year form – old forms will not be accepted).
  Be sure to review all the instructions listed on the worksheets of the budget template.  Work with your university research office to ensure the budget is correct.  The submitted budget must also include the partner's budget.
- **Data Management Plan** (PDF). *Did you follow the guidance provided in the template?*

Please contact the following regarding Institutional Letter of Commitment for your institution:

- o **Oregon Tech:** Sponsored Projects and Grant Administration
- o **UO:** Sponsored Projects Services (SPS)
- o **UTA:** Office of Grants & Contract Services
- o **UA:** Engineering Research Administration Services (ERAS) or Sponsored Projects & Contracting Services (SPCS)
- o **UU:** Office of Sponsored Projects (OSP)

# 10 Appendix

**TRL-H Scale[1]** www.fhwa.dot.gov/advancedresearch/trl_h.cfm

| | TRL | Description | To achieve the given TRL, you must answer yes to EVERY question. Discuss any uncertain answers. |
|---|---|---|---|
| **Basic Research** | 1 | Basic principles and research | Do basic scientific principles support the concept? |
| | | | Has the technology development methodology or approach been developed? |
| | 2 | Application formulated | Are potential system applications identified? |
| | | | Are system components and the user interface at least partly described? |
| | | | Do preliminary analyses or experiments confirm that the application might meet the user need? |
| | 3 | Proof of concept | Are system performance metrics established? |
| | | | Is system feasibility fully established? |
| | | | Do experiments or modeling and simulation validate performance predictions of system capability? |
| | | | Does the technology address a need or introduce an innovation in the field of transportation? |
| **Applied Research** | 4 | Components validated in laboratory environment | Are end user requirements documented? |
| | | | Does a plausible draft integration plan exist and is component compatibility demonstrated? |
| | | | Were individual components successfully tested in a *laboratory environment* (a fully controlled test environment where a limited number of critical functions are tested)? |
| | 5 | Integrated components demonstrated in a laboratory environment | Are external and internal system interfaces documented? |
| | | | Are target and minimum operational requirements developed? |
| | | | Is component integration demonstrated in a laboratory environment (*i.e.* fully controlled setting)? |
| **Development** | 6 | Prototype demonstrated in relevant environment | Is the operational environment fully known (*i.e.* user community, physical environment, and input data characteristics as appropriate)? |
| | | | Was the prototype tested in a realistic environment outside the laboratory (*i.e.relevant environment*)? |
| | | | Does the prototype satisfy all operational requirements when confronted with realistic problems? |
| | 7 | Prototype demonstrated in operational environment | Are available components representative of production components? |
| | | | Is the fully integrated prototype demonstrated in an *operational environment* (*i.e.* real world conditions, including the user community)? |
| | | | Are all interfaces tested individually under stressed and anomalous conditions? |
| | 8 | Technology proven in operational environment | Are all system components form, fit, and function compatible with each other and with the operational environment? |
| | | | Is the technology proven in an operational environment (*i.e.* meet target performance measures)? |
| | | | Was a rigorous test and evaluation process completed successfully? |
| | | | Does the technology meet its stated purpose and functionality as designed? |
| **Implementation** | 9 | Technology refined and adopted | Is the technology deployed in its intended operational environment? |
| | | | Is information about the technology disseminated to the user community? |
| | | | Is the technology adopted by the user community? |

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[1] FHWA Overview of Technology Readiness Assessment Work for EAR Program
www.fhwa.dot.gov/advancedresearch/trl_h.cfm