

To: List
From: Richard Sause, Co-Director and Chad Kusko, Co-Associate Director
Date: August 13, 2018
Subject: PITA Request for Proposals – **Fiscal Year 2019**

-PLEASE READ-

Funding for the FY2019 Pennsylvania Infrastructure Technology Alliance (PITA) program has been appropriated by the Commonwealth of Pennsylvania (PA) in its most recent budget. Administration of this program locally within Lehigh is transitioning from the ATLSS Engineering Research Center to Lehigh's Institute for Cyber-Physical Infrastructure and Energy (I-CPIE). I-CPIE is now soliciting proposals for PITA projects for the FY2019 funding period. Please review the key logistical information section below for details on the current cycle.

CPIE invites proposals that satisfy the PITA mission of assisting the Commonwealth of PA and its companies in increasing operating efficiency and enhancing economic development by:

- 1) Conducting technology development projects with PA companies;
- 2) Developing technology leading to new PA companies;
- 3) Conducting educational outreach programs for the benefit of PA companies and students;
- 4) Seeding research and technology development projects that attract funding from other sources;
- 5) Creating an environment linking PA companies, agencies and students to increase the creation and retention of high paying jobs in the Commonwealth; and
- 6) Enabling PA universities to remain at the forefront of engineering research and education.

Key logistical information pertaining to the current PITA RFP is provided below:

- Proposals **are due by Friday, October 26, 2018** via email to the attention of Chad Kusko at chk205@lehigh.edu.
- Approval memos for selected projects are targeted to be issued by January 1, 2019.
- The typical award period will run from January 1, 2019 to June 30, 2020.
- Typical project awards for PITA funds are expected in the range of \$20,000 to \$50,000 and require leverage (matching) funds at a minimum of \$2 for every \$1 of PITA funding.
 - Budgets for proposed projects should not exceed \$50,000
- Proposals should fit within one of the 7 technology focus areas listed below, which reflect key infrastructure domain areas of interest to the Commonwealth. Technical examples that would fit within each domain are provided in the Appendix to this letter. Proposals that do not fit into one of these Technology Focus Areas, but otherwise fulfill the PITA mission and have strong economic development potential in PA, may still be considered, and should be submitted under the "Other" category.
 - Transportation Systems
 - Telecommunications and Information Technology
 - Facilities
 - Water Systems
 - Energy and Environment
 - Public Health and Medicine
 - Hazard Mitigation and Disaster Recovery
- The PITA emphasis for FY2019 continues to focus on the "Active Participation of Pennsylvania

Companies” (see 1.a. below). For these collaborative projects, PIs are required to supply industry support letters from the participating PA companies as an attachment to the proposal. The support letter should discuss the impact of the research project on its organization and identify the financial leverage provided by the organization. **Note that for leverage funding to be considered as part of the budget proposal, the company support letter must quantify and build-up either the direct cash leverage value or in-kind donation value with supporting data.** Non-quantified in-kind leverage will not be considered as leverage funding. Additionally, PIs are required to submit a contact name and full address for a member of the participating company to serve as the company’s PITA point-of-contact for the duration of the project. The point-of-contact will be invited to attend PITA events during the course of the project, and will be asked to periodically provide feedback on the PITA program. Language from the support letter may be included in reports to the program sponsor.

- Seed projects to develop new research initiatives, foster research collaboration among faculty, facilitate developing follow-on funding opportunities and incubate collaborations with PA companies may be considered, but the focus of the PITA program for FY2019 will continue to be on collaborative programs. In lieu of current PA company participation, such seed projects should clearly define the technical objective as well as the strategy for using the outcomes to develop follow-on funding and future PA company collaborations.
- **Proposals that are continuations or extensions of a prior award should not exceed 2 funding cycles of PITA support.**

Proposal Templates

Attached are the required templates for FY2019 Technical and Cost proposals. All proposals must be submitted using these forms in the original Word and Excel formats, respectively.

Technical Proposals are limited to 4 pages, including no more than 2 pages for the technical description. Figures and tables and industry support letters are not included in this page limit. Proposed projects with strong technical content and/or innovation, significant impact on a PA organization, and with the following features have the best chance to be selected for funding (in general order of importance):

1. **a. Collaborative Projects**
 - i. **Active Participation of Pennsylvania Companies** with projects benefiting either established PA-based companies or start-ups with new technologies. Examples of active participation include: cash cost matching and in-kind use of company facilities, equipment, materials, and/or personnel to conduct experiments, demonstrations, or other research tasks directly related to the project. As noted previously, in-kind contributions from organizations must be quantified with supporting data on company letterhead to be considered as leverage funding. Cash cost matching is particularly encouraged for projects that partner with larger, more established PA companies. The support-letters from industry must explicitly list the type and amount of their participation. Any cost match that is provided by the industry participant should be administered through a Lehigh University account.
 - b. **Seed Projects**
 - i. **Clearly defined strategy** for using the project’s technical outcomes to generate follow-on funding and future collaborations with PA companies, and augmenting the follow-on funding plans described in item #5 below.
 - ii. **Clearly defined relationship** of project objectives with the PITA mission.
2. **Active Participation of Graduate and/or Undergraduate Students:** A key element of the mission of PITA is to link students with PA companies and agencies to increase the

retention of well-educated students in the Commonwealth. Projects with clear plans for interaction of graduate students and/or undergraduate students with PA companies are strongly encouraged.

3. **Leveraged Funds:** Leveraged funds fall into four broad categories (in general order of importance):
 - a. New cost matching from PA industrial partners (specific to the current PITA proposal)
 - b. Existing cost matching from PA industrial partners related to the proposed project goals (exist independent of the current PITA proposal)
 - c. New cost matching from non-PA sources (e.g. federal government, out-of-state industrial partners) (specific to the current PITA proposal)
 - d. Existing funds related to the proposed project goals that do not fall into the categories above and that are not from PA government sources (exist independently of the current PITA proposal).

As a guideline, the overall PITA program goal is \$2 of expended leveraged funds for each \$1 of expended PITA funds. The leveraged funds identified in a project proposal must be in place before PITA funds are released to the project and must be expended during the period of performance of the project. Also, the relationship of leveraged funds to the project must be stated in the proposal.

4. **Interdepartmental Collaboration and Clustering:** Projects with clear plans for collaboration with two or more PI's from different departments are encouraged. Additionally, technical interactions between two or more PITA proposals to promote research clustering may be proposed. However, each PITA proposal should target a unique description and anticipated results that can be achieved independent of other proposals.
5. **Follow-on Funds:** Follow-on funds are generated from future grants or contracts that result from concepts or technologies enabled by PITA funding. The proposal should briefly outline any existing plans to seek follow-on funds based on the project. PIs are also asked to submit information on follow-on funding enabled by PITA grants received in prior years.
6. **Budget:** PITA funds cannot be used to support faculty salaries for tenured or tenure-track faculty. Faculty academic year salary cannot be used as a leverage funding source for PITA projects. Faculty salary from non-PITA sources can be included as leverage funds for the project. Budgets should place an emphasis on graduate and undergraduate student effort. Leverage sources should be clearly identified. Unrecovered indirect cost is not an allowable form of leverage for PITA projects.
7. **Metric Participation:** The PITA Program is required by its sponsor, the PA Department of Community and Economic Development (DCED), to conduct project reporting and impact surveys every year during the project period, and to continue to update impact information for up to five years for each project. For PI's who have received prior PITA funding, responsiveness to providing metric information on past projects will be considered.

Metric Reporting and Final Reporting

If your project is funded, the PITA program will require project PIs to assist in identifying and measuring PITA program effectiveness **twice per year for up to five years (determined by DCED requirements) after the completion of the project**, including the following:

- Providing university impact information (e.g., students involved, patents, publications, presentations, leverages funds, follow-on funds)
- Assisting PITA staff in collecting economic impact information (PA companies and agencies involved and economic impact at these companies and agencies) for the project.
- Identifying PITA and DCED as project sponsors in all project presentations, publications, and discussions of the project with the media.

Please note that overdue metrics reports during and following the funding period may impact the PI and co-PIs from receiving new PITA awards.

A final project report will be required upon conclusion of the research, in addition to the metrics information noted above. Additionally, the PITA program may request project information from PI's for interim reports, newsletters, etc. in order to highlight program activities.

Please submit proposals electronically to Lehigh University's PITA Associate Director, Dr. Chad Kusko (chk205@lehigh.edu), using the attached Technical and Cost Proposal Forms. Questions regarding the proposal content should be addressed to Dr. Chad Kusko at chk205@lehigh.edu or 8-5299 or to Dr. Richard Sause at rs0c@lehigh.edu or 8-3565.

APPENDIX - Technology Focus Areas

PITA unites the physical and informational infrastructure expertise at Carnegie Mellon and Lehigh Universities with the capabilities and needs of Pennsylvania companies and agencies to develop solutions to some of the Commonwealth's most serious infrastructure problems which impact economic growth and quality of life. Strategic technology focus areas that have been developed in consultation with Industry Advisory Board members for FY2019 are as follows, along with some examples (note the examples are not all inclusive) for each area:

- **Transportation Systems:** Safe and efficient highways, bridges, tunnels, mass transit systems, railways and airports.
- **Telecommunications and Information Technology:** Secure information technology systems that can withstand both intentional attacks and accidental errors.
- **Facilities:** Facilities can include permanent and semi-permanent real property assets required to support a system, including studies to define types of facilities or facility improvements, location, space needs, environmental and security requirements, and equipment. It includes facilities for training, equipment storage, maintenance, supply storage, and so forth.
- **Water Systems:** Protection and restoration of water resources to provide an adequate drinking water supply; treatment and control tools to improve water quality; and innovative technology for monitoring, managing, and operating critical waterway infrastructure (dams, locks and bridges).
- **Energy and Environment:** Clean, affordable and sustainable energy sources; reliable delivery of energy through electrical grids and natural gas pipelines; and efficient transmission and use of energy.
- **Public Health and Medicine:** Healthcare technologies to save lives, to improve patient quality of life, and to reduce healthcare costs.
- **Hazard Mitigation and Disaster Recovery:** Mitigation of impacts from natural hazards (floods, hurricanes, tornados, earthquakes) as well as other hazards, such as explosions and fires; and infrastructure systems that permit continued operation after a hazardous event.