2018 C²SMART Center Request for Proposals

Program Objectives

C²SMART is a Tier-1 University Transportation Center composed of a consortium of universities: New York University (NYU) (lead), City College of New York, Rutgers University, University of Texas El Paso, and University of Washington Seattle. The main research priority of the C²SMART is “Improving Mobility of People and Goods” with a focus on the topic area of “Smart Cities.” C²SMART’s mission is to build a solution-oriented research center that uses resources from a range of cities among its consortium members as a decentralized but comprehensive and connected living laboratory. The Center studies a number of challenging transportation problems and field tests novel solutions in close collaboration with end-users, local agencies, policy makers, private companies, and entrepreneurs.

Guidelines for Submitting a Proposal

The Center is soliciting proposals from its consortium members for research projects in 2018. The following key characteristics should be addressed in each proposal:

- How the research will contribute to one or more of the Center’s three primary Thrust Areas (Figure 1)
- How the researchers plan to work with local agencies and industry to test and benchmark their research, taking advantage of the consortium of connected cities
- How the research will translate into implementable projects by agencies, industry, or others
- How the research findings will be translated to measurable outreach and student training efforts
- Where the minimum 50% non-federal cost share comes from and how it will support the proposed research

Proposals that are part of a bigger multi-year project may be considered. In such cases the PI should clearly explain what prior research has been accomplished so far and what the long term goals are.

Proposals will be submitted to the PI’s institution, which are then sent to the Review Committee to evaluate and provide feedback on. Funding a proposed project may be provided on condition that the scope is modified to better meet the needs 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.

Center funding for selected proposals are limited to the following maximums, which include indirect costs, but exclude the minimum 50% non-federal cost share that must accompany the selected proposals:

- Single institution, single principal investigator (no co-principal investigator): $60,000
- Single institution, multiple co-principal investigators: $90,000
- Multi-institution, multiple co-principal investigators: $150,000
**Thrust Areas of Proposed Research**

The Center will seek proposals for projects to continue studying a number of challenging transportation problems. The research approach of the proposed projects should be the use of a system-of-systems (SoS) perspective that integrates data from roads, transport services, energy grids, financial information, and other urban networks.

The Center’s 3 Research Thrust Areas, selected based on the core competencies of the consortium members, cover 9 of 12 vision elements of USDOT’s Smart Cities, as shown in Figure 1.

The Center’s research activity is primarily concentrated in the following areas:

- Use big data generated by emerging field implementations and non-traditional multi-resolution sensing technologies to a) develop secure and interoperable data sharing platforms and system-oriented solutions and b) address a wide range of urban mobility problems involving people and goods from the multimodal perspective to achieve efficiency, resiliency, accessibility, and sustainability for a range of cities.
- Develop innovative solutions that focus on revolutionary transportation technologies such as connected travelers (vehicles and people), autonomous vehicles, shared mobility, and the Internet of Things.
- Work closely with city and state stakeholders, including government agencies, policymakers, the private sector, non-profit organizations, and entrepreneurs, to provide implementable solutions that address the needs of all stakeholders.
- Train the workforce of tomorrow to deal with these new problems with ways that are not covered in existing transportation curricula.
Proposal Submission Requirements
The proposal should be submitted in the format of the provided Research Project Description template in a PDF file along with a budget in the provided Microsoft Excel template, to each consortium institution’s representative. The template covers the following:

1. A 1-page cover in the prescribed USDOT format
2. A complete scope of work covering:
   a. Background and review of prior research, highlighting any previously conducted C²SMART Center research in the area
   b. Problem statement, research objectives, and proposed methodology
   c. Key project elements and milestones
   d. Deliverables or outputs that will come about as a result of this research
   e. Discussion of intellectual merit and broader impacts and benefits arising from implementing the proposed research
   f. How the research will be implemented and disseminated
   g. Plans for technology transfer (if applicable)
   h. Outreach activities (if applicable)
   i. The connection between the proposed research and C²SMART Center thrust areas and themes
   j. Identifying key functions and modes of the research
3. A detailed list of tasks and their proposed timeline, along with when deliverables or outputs will be produced
4. A description of project personnel involved and commitment
   a. Anticipated collaboration with consortium members, other partners, public agencies, or industry
   b. Research staff, students, and faculty time committed to this project
   c. A description of where the minimum 50% non-federal cost-sharing will come from
   d. A detailed breakdown of anticipated charged time and supplies, equipment, or travel associated with the project
5. Brief responses to additional evaluation questions included in the template (max 2 sentences each)

In addition, appendices should be included that provide the following:
I. 2-page max CVs of the PI and all key personnel (NSF style) highlighting relationship with prior C²SMART research and outcomes
II. 2-page max data management plan: how the data produced from the project will be managed, particularly in the case where personal identity, patents and/or a company with proprietary data may be involved
III. 2-page max budget justification
IV. Cost share commitment letters and other letters of support if agency or industry partners have been identified
V. If the research requires IRB approval for human subjects research, documentation should be included to indicate the plan to seek IRB approval if the proposal is funded
Connected Cities for Smart Mobility toward Accessible and Resilient Transportation

**Review Criteria**
Each consortium member institution will internally pre-screen submitted proposals prior to getting to the designated Review Committee to ensure proposals meet the minimum requirements. Based on submitted proposals, the Review Committee will seek a minimum of 2 peer reviews from outside of the Center. These reviews are meant to provide additional perspective only; the final decisions will be made by the Review Committee that are justifiable to the Center’s Advisory Board. The Review Committee will rank proposals in order of acceptance, after which funding will be allocated accordingly. Conditions to the scope of the project may be added in order for a project to be accepted.

The proposals will be judged along the following criteria:

1) Does the proposed topic have strong intellectual merit?
2) Does the proposed topic contribute to the mission and one or more of the thrust areas in C²SMART?
3) Does the project take advantage of prior C²SMART or other research to expand the scope and value of the research without replicating previously answered questions?
4) Does the project provide implementable outcomes including knowledge transfer to public agencies and professionals?
5) Does the project provide training to students and the academic community?
6) Does the project take advantage of industry resources including current C²SMART industry partners?
7) Does the project scope, budget, data, and schedule appear feasible?
8) Do the principal investigators have a good track record of providing deliverables per requirements and completing projects on-time?

**Deadlines and Schedule**
All responses to this RFP are due to consortium member representatives by November 18, 2017 with no exceptions. Review, follow-up, selection, and funding allocations will take place over December 2017 and January 2018, with notice of award occurring in February 2018. All projects will be expected to commence by March 1, 2018 with a scheduled completion date of February 28, 2019 (in the case of one-year projects).

Proposals should be submitted via email to the following consortium member representatives:
- **New York University**: Professor Joseph Chow (joseph.chow@nyu.edu)
- **Rutgers University**: Professor Hani Nassif (nassif@rci.rutgers.edu)
- **City College of New York**: Professor Camille Kamga (ckamga@utrc2.org)
- **University of Washington**: Professor Jeff Ban (banx@uw.edu)
- **University of Texas at El Paso**: Professor Kelvin Cheu (rcheu@utep.edu)