CALL FOR SEED RESEARCH PROPOSALS BY
THE CENTER FOR INTEGRATED FACILITY ENGINEERING (CIFE)
SUBMISSION DEADLINE: May 14, 2019, 9:00 AM PDT

The overall interest of the CIFE community is in improving the design and construction as well as the use and operations phases of built facilities (buildings, industrial plants, infrastructure, etc.). Proposals that support this broad theme of research will be considered. CIFE is seeking seed proposals to address this broad area of research. Proposals must be led by a Stanford academic council member and should last one year with an expected budget in the range of $70k to $100k. The intent of these seed grants is to enable a small research team to explore the feasibility of a larger research effort. The following topics illustrate focus areas that have been identified by the CIFE community as particularly critical. However, proposals can cut across these topics or address other topics in the broad research area outlined above.

- Leveraging Computer Science methods (AI, machine learning, computer vision, AR/VR, robotics, etc.) to automate project processes, such as coordination between disciplines, connect all forms of communication on a project, understand complexity and make predictions in complex situations. Of particular interest are methods with the potential to improve the safety, quality, and schedule performance of facilities in all lifecycle phases.
- Building on IoT devices for tight coupling of facility performance with facility users to fine-tune facility performance in near real time to support the needs of the facility users and to formalize and prototype data-driven socio-technical systems for facility operations.
- Reconfiguring the design process for multidisciplinary coordination with simultaneous, automated analysis and multi-objective optimization, redefining design quality and design completion.
- Formalizing metrics to incentivize all parties and investigating business models for the project participants – architects, engineers, builders, insurance companies, etc. – leveraging the opportunities from integration and automation. Studying how projects can bring breakthrough innovation to practice.
- Creating novel education concepts and approaches for all blue-collar and white-collar disciplines.

Timetable and requirements for projects for funding during AY 2019-20

| April 8 | Call for proposals available to the Stanford and CIFE communities. |
| May 7   | Last day to request the budget for your proposal from Engineering Research Administration for departments in the School of Engineering or your local research administration staff for other Stanford departments. Note that the majority of the requested funding should normally be allocated to research students. |
| May 7   | Request a proposal number from Teddie Guenzer at CIFE (cife-email@stanford.edu). |
| May 14 9:00 AM PDT | Submit your proposal in .docx, or .pdf format including the budget to cife-email@stanford.edu. Use the proposal template 2018 posted at https://cife.stanford.edu/2018Call_For_Proposals |
Submit the slides you plan to use for the presentation at the Technical Advisory Committee (TAC) meeting in .pptx format to cife-email@stanford.edu. Use the template posted at https://cife.stanford.edu/2018Call_For_Proposals.

Present your proposal to CIFE’s industrial members at the TAC meeting.

CIFE award decisions announced.

Earliest start date for the proposed research.

Typical start date.

Latest research start date.

At the requested funding time, CIFE will establish a skeleton project website which should then be completed by the research team. Continued funding for the second half of the project is contingent on updates to the website in accordance with the milestones listed in the proposal. The website should provide access to at least the following information: (1) A practical scenario illustrating the engineering or business problem addressed by the research and highlighting the potential impact of the research on practice, (2) the original proposal (except the budget), (3) explanations of test cases used for the project, and (4) presentations developed for this project.

Throughout AY 2019/20, PI(s) and RA(s) on funded seed projects are expected to be available occasionally to present the research at CIFE seminars and workshops or to visiting academics or industry professionals.

Latest date for research completion unless a no-cost extension is requested.

Submit final project report to CIFE for publication as a Technical Report, Working Paper, video, or website. Follow the guidelines for authors available on the CIFE website (https://cife.stanford.edu/AuthorInstructions).

**Intellectual Property Rights**

The research carried out through the CIFE Seed Research program is governed by the research and intellectual property guidelines and rules in effect at Stanford University.