



## Centers of Excellence Grants Program, part II: FY2021 Faculty Initiation and Career Opportunity

Center for Excellence in Applied Computational Science & Engineering (CEACSE)

**Letter of Intent to Apply (required for Career Opportunity applicants): 5:00pm on June 7, 2020**

**Proposal Submission Deadline: 5:00pm on July 5, 2020**

**RFP Version 3.1**

### Purpose & Overview

The Center of Excellence in Applied Computational Science and Engineering (CEACSE) is issuing a supplementary call for research proposals for FY2021. The strategic goal of CEACSE is to provide seed funding to enhance and expand UTC's strength in all aspects of applied computational science and engineering, thereby gaining national recognition for the SimCenter as a premier **multidisciplinary research and education** center for applied computational science and engineering.

These funds will be awarded on a competitive basis via a review of the funding criteria below and the strategic merit of each proposal. The primary goal of this program is to enable development of **new capabilities and extramural projects in the area of Computational Sciences**. Thus, any proposal that does not require significant computational modeling or simulation will be **returned without review**.

The primary audience for applicants is professors beginning their tenure-earning position between July 1, 2020 and February 1, 2021. The secondary audience is tenured professors who seek to "restart their research programs." **Any tenure-earning professors who started at UTC after January 1, 2020, and did not apply to the CEACSE Faculty Initiation grant in FY2020 are eligible to apply in FY2021.**

Proposals will be reviewed by UTC administrators and scored based on scientific merit, capacity building, and strategic excellence. We will be looking for proposals that fulfill the following three key goals:

1. Relate to modeling and simulation, big data, and/or analytics
2. Will result in high-impact, peer-reviewed publications
3. Can "seed" larger, long-term extramural funding

There are eight priority areas for funding, aligned with the research thrusts of the SimCenter: Advanced Modeling & Simulation, Cybersecurity & Cyber-physical Systems, Digital Twins, Energy, Environment, Extreme Systems, Health & Biosystems, and High-Performance Computing & Algorithms. Projects that fall outside of these eight areas are still eligible for funding, provided they are oriented toward the three key goals listed above. Regardless of area, proposals that leverage community assets and partners are strongly encouraged.

The maximum individual award amount is \$15,000, with no matching.

An additional \$10,000 may be proposed with a **required** real-dollar match of \$5,000, which can be from startup funding or from the faculty member's department chair and/or their unit's Dean with a letter of commitment to accompany the proposal submission. The maximum award is \$25,000 plus \$5,000 of matching.

The start date for most projects will be September 1, 2020. The maximum budget period will be nine months: September 1, 2020 – May 31, 2021. If the faculty member starts at the university in the spring semester, then the period of performance will be January 1, 2021 – June 30, 2021, or six months.

A maximum of eight awards in the range of \$15,000 – \$25,000 is anticipated.

## Selection Criteria for Funding

All projects proposed must fit within a timeframe of six to nine months and meet all award constraints noted below in “Application Details and Requirements.” Proposals will be reviewed and scored based on the following major criteria:

- 1) **Intellectual Merit.** Proposals should demonstrate intellectual/scientific merit.
- 2) **Capacity Building.** Proposals should document a strong potential to directly transform anticipated results into NEW extramural funding initiatives.
- 3) **Strategic Excellence.** Proposals should clearly articulate how they align with strategic goals of the PI’s department, college, and institution, as well as CEACSE.

Any PI uncertain whether their research project meets the above criteria should contact Dr. Anthony Skjellum (Director, SimCenter; [tony-skjellum@utc.edu](mailto:tony-skjellum@utc.edu)) **before preparing an application.**

## Application Details and Requirements

The following requirements apply to all applications and should be read carefully.

### Eligibility

Tenure-track faculty from all disciplines are eligible to serve as PI, provided he or she is on staff no later than the first day of the period of performance. Tenured faculty may also apply; see below for additional requirements under “Career Opportunity.” **A faculty member is eligible to be the lead PI on only one award in both phases of the CEACSE award program each fiscal year. PIs on declined proposals to the main CEACSE program are eligible to apply for this program, if they meet all other eligibility requirements. There are no co-PIs allowed on this proposal program.**

### Use of Funds

Requested funds must be used solely to complete the project as outlined in the budget. Budgets must be well justified and appropriate to the type and extent of the proposed project; they will be carefully evaluated. Changes in scope or budget revisions of more than 25% of the award amount require prior approval.

### *Allowable costs include the following:*

- Student hourly wages
- UTC faculty or staff release/replacement costs
- Up to two months of UTC faculty summer salary
- Other personnel costs
- Fringe benefits associated with requested salary/wages
- Equipment (items valued at \$5,000 or more)
- Software
- Travel
- Publication fees
- Materials and supplies
- Sensitive minor equipment

### *Unallowable costs include the following:*

- Extra services compensation during the academic appointment term
- Non-student administrative or clerical support costs
- Indirect or F&A costs
- Supplantation of costs (e.g., lab space) typically covered by other institutional sources

## Career Opportunity

Proposers who have already reached tenure and seek to “reboot” their research programs may also apply. Such applicants require a letter of support (in addition to a letter of matching, if applicable) signed by the applicant’s department chair, the applicant’s dean, or the Vice Chancellor for Research.

## Application Requirements

Each application must follow the requirements outlined in this section. Before submitting a full proposal, each PI may submit a letter of intent, also outlined below. This

### OPTIONAL: Letter of Intent (LOI)

A notice of intent is **requested but only required for career opportunity applicants**. The LOIs will be used to help with planning. The following information should be provided in an email to [CEACSE@utc.edu](mailto:CEACSE@utc.edu) by 5:00 pm Eastern time on Sunday, June 7, 2020:

- Principal Investigator
- PI’s start date at UTC
- Working title of project
- “Faculty Initiation” or “Career Opportunity” (choose one)
- Planned period of performance
- Planned budget amount and matching (if applicable)
- Brief summary

### Full Application

Applications are to be submitted **as a single PDF file** of the complete application, plus the Excel budget file, to [CEACSE@utc.edu](mailto:CEACSE@utc.edu) by 5:00 pm Eastern time, Friday, July 5, 2020. The email subject line should include “mini-CEACSE FY2021 Submission” and the PI last name. A completed application includes the following components:

- A CEACSE **Cover Form** signed by the Lead PI’s department/unit head. The form appears on page 6 of this RFP and is also available online in machine-readable form.
- A **Proposal Summary and Narrative** describing the proposed research within the context of the three review criteria (intellectual merit, capacity building, and strategic excellence). This section should include the following components:
  - A summary<sup>1</sup> that describes the proposal (importance, timeliness, and team qualifications), Intellectual Merits, Broader Impacts, and Keywords. Minimum 0.5 page and maximum 1 page.
  - A proposal narrative of up to three pages<sup>2</sup> that answers the following questions:
    - 1) What is/are the scientific merit/innovative claims of the research?
    - 2) What are the broader impacts of the research (technical, interpersonal, and societal)?
    - 3) What is the originality of the work compared to others?
    - 4) What is the technical approach?
    - 5) How does this proposed project accelerate the PI’s research?
    - 6) How will this proposal develop findings that enable the PI to pursue follow-on external funding (which will then be described in the Extramural Funding Plan)?
    - 7) What will be the end product of the proposed project?
    - 8) What are risks associated with the proposed project (e.g., risks to validity of research, timing risks)?

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<sup>1</sup> This page is similar to the Project Summary on an NSF proposal and is **separate** from the abstract on the Cover Form. It should be one column, single spaced, with 1 in. (2.54 cm) margins and 11pt type minimum (e.g., Times New Roman).

<sup>2</sup> This section should be one column, single spaced, and paginated, with 1 in. (2.54 cm) margins and 11pt type minimum (e.g., Times New Roman).

- A references list (not counted in the three-page limit)
- OPTIONAL: A figure such as an overall concept or architectural diagram that abstracts the project or innovation and puts in context the work as part of the greater body of work in the PI's discipline. Optimally, such a figure would appear on page 1 of the narrative.
- An **Extramural Funding Plan** of up to one page in length. This document should include the following components:
  - A detailed plan to obtain extramural funding after the completion of the proposed effort
  - A list of potential sponsors and funding programs to sustain/extend proposed activities
  - A timeline and benchmarks associated with seeking external funds
  - A brief narrative description of each funding opportunity and how it is a good fit for the described research
- A **Curriculum Vitae** for the PI, limited to two pages. This vitae should meet current NSF Biosketch criteria for format and content.
- For Career Opportunity applicants ONLY: A one-page **Appendix** that explains how the PI intends to refactor their career and to explore research on a sustained basis. This appendix does not apply to Faculty Initiation applicants.
- A **Budget & Budget Justification**, created in the required Excel form available on the CEACSE web page at <http://www.utc.edu/simcenter/ceacse>. This document should include the matching amount, if applicable, and how it will be spent, broken out separately. The budget should be submitted in Excel format, not in the PDF document.

### Important Notes

All applicants should carefully consider the following additional points:

- 1) These funds cannot be used to supplant funds or resources that are available from other sources.
- 2) When relevant, investigators are strongly encouraged to submit IRB and/or IACUC applications when they submit their proposals to minimize delays in initiating funded projects.
- 3) The Extramural Funding Plan is a critical element of the proposal and the review process. The extramural funding plan should be carefully thought out and written up. Applicants must include a strong, realistic, and carefully considered extramural funding plan to be competitive.
- 4) Applications will be reviewed by a UTC internal panel, including the Vice Chancellor for Research, the SimCenter Director, other individuals identified to support the review procedure.

## Award Requirements

CEACSE Faculty Initiation and Career Opportunity awards represent a significant investment from the institution and, by submitting a proposal and accepting an award, awardees agree to fulfill the required terms and conditions.

### Budget & Award Management

The PI is responsible for monitoring and managing the award budget, in collaboration with departmental Administrative Specialists and the Department Head. The PI is also responsible for ensuring that fund "spend rates" are appropriate across the period of performance of the project to complete the project activities on time and within budget. This responsibility will include developing mechanisms with collaborators to monitor the project budget and expenditures.

### Meetings & Reporting

PIs are expected to complete the following activities if they receive funding:

- Participate in an orientation session to be held in Fall or Spring
- Submit a midterm status report (halfway through the period of performance). This report can be a PDF report of 1-2 pages describing progress, plans, outcomes, and spending status.

- Present their research activities at the annual ReSEARCH Dialogues conference (April 2021 or April 2022, depending on when there are sufficient results to present)
- Submit a final report within 60 days of the award closing that includes a comprehensive summary of project activities and specific future funding plans

### **Grant Submission**

A key requirement of the award is that the research team prepare and submit at least one—and preferably more than one—competitive grant proposal to an external funding source based on the program activities funded via this award. Appropriate members of the research team should plan to begin work with a Grants Specialist in the Office of Research and Sponsored Programs and the Grant Administrator in the SimCenter or the College of Arts and Sciences **well in advance of the grant deadline**. Proposal documents are expected to be developed with sufficient time to allow for at least one review and critique by an external expert (to be compensated with VCR funds outside of the award amount).

### **Version 1.2 (5/9/18)**

1. Clarified the matching formula for funding above \$15,000
2. Clarified that a PI can only be a PI on “mini” CEACSE awards if they are not PI on an upcoming funded main CEACSE project, but they may apply for this program if their main CEACSE proposal was declined.

### **Version 2.1 (3/28/19)**

1. Added swimlane information
2. Altered eligibility requirements to include faculty who began at UTC within the eligibility period for the FY2020 award but did not know of their appointment before the FY2020 deadline
3. Extended deadlines to May 31 & June 28

### **Version 2.2 (6/26/19)**

1. Revised primary period of performance from August 1, 2020 – April 30, 2021 to September 1, 2020 – May 31, 2021
2. Extended final deadline to July 5

### **Version 3.1 (5/11/20)**

1. Removed student assistantships as eligible expenses
2. Added new thrusts
3. Extended LOI deadline to June 7, 2020, due to website update delays. Will be pulled back to May 31 or the FY2022 competition.

## CEACSE Grants FY2021 – Faculty Initiation & Career Opportunity

### Project Information

#### Lead Principal Investigator:

*The Lead PI is the designated project lead and will be the point of contact for the project. The Lead PI's department will administer the project funds (on a cost-reimbursement basis) in coordination with the SimCenter, as outlined in the proposal budget.*

#### Faculty Initiation or Career Opportunity?

#### Title of Project:

#### Abstract (200-word limit, with no special symbols):

#### Funds Requested: \$

#### Matching Amount & Source: \$

#### Compliance Requirements (if applicable):

- |   |   |
|---|---|
| <input type="checkbox"/> Human Subjects (IRB review needed) | <input type="checkbox"/> Use of animals (IACUC review needed)     |
| <input type="checkbox"/> Export Control                     | <input type="checkbox"/> Conflict of Interest*                    |
| <input type="checkbox"/> Intellectual Property              | <input type="checkbox"/> Additional Space or IT Resources Needed* |

*\*Conflict of Interest and Space issues must be resolved prior to submitting the proposal.*

#### Approval Signature – Lead PI

*By signing here, the Lead PI agrees to provide technical and financial oversight and all required reporting if the project is selected for funding. The undersigned acknowledges that funding decisions under this program are made solely under the auspices of the Office of Vice Chancellor for Research, whose decisions are final.*

Lead PI: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

#### Approval Signature – Lead PI Department

*By signing here, the Lead PI's Department/Unit Head agrees to provide general oversight and administrative support if the project is selected for funding. The undersigned acknowledges that funding decisions under this program are made solely under the auspices of the Office of Vice Chancellor for Research, whose decisions are final.*

Lead PI Department/Unit Head: \_\_\_\_\_  
Signature

\_\_\_\_\_  
Date