



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

Centers of Excellence Grants Program

Proposal Submission Deadline: 5:00pm on October 31, 2022

RFP Version 1.8 (revised September 19, 2022)

Purpose and Overview

The Center of Excellence in Applied Computational Science and Engineering (CEACSE) is issuing a call for research proposals for FY 2024. 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.

CEACSE funds will be awarded on a competitive basis via a review of the six funding criteria (p. 5 of this RFP) for each proposal. The primary goal of this program is to enable strategic development of **new capabilities and extramural projects in the area of Computational Sciences** and to assist PIs in moving from internal seed funding to external grant funding. Any proposal that does not require significant computational modeling and simulation, big data, machine learning, and/or analytics will be **returned without review**.

Proposals will be single-blind peer reviewed by domain experts from other four-year universities 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, machine learning, and/or analytics
2. Will result in high-impact, peer-reviewed publications
3. Can "seed" larger, long-term extramural funding

There are nine priority areas for funding, aligned with the research areas of the SimCenter:

1. Advanced Modeling & Simulation
2. Critical Infrastructure Protection, including Energy & Smart Grid
3. Cybersecurity & Cyber-physical Systems
4. Climate, Weather & Environmental Systems
5. Extreme Environment Technologies
6. Health & Biological Systems
7. Modeling & Simulation of Advanced Materials
8. Modeling & Simulation of Quantum Systems
9. High-Performance Computing & Algorithms

Projects outside these areas are eligible for funding, provided they are oriented toward the key goals listed above. Proposals that leverage community assets/partners are strongly encouraged.

Application Details and Requirements

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

Eligibility

Tenured or tenure-track faculty from all disciplines are eligible to serve as PI or co-PI. Non-tenure-track faculty, staff, and postdoctoral associates may apply as co-PIs. **An individual may be a member of the research team on up to 3 proposals but may only serve as PI on 1 proposal (co-PI on 3 proposals, or co-PI on 2 and PI on 1, etc.).** If an individual is found to be in violation of this limit, excess proposals will be returned without review, based on order of submission.

Resubmissions

Any PI may resubmit a declined proposal from an earlier CEACSE or other competition, provided it does not duplicate current or previously awarded funding. Resubmissions from a prior year of CEACSE competition **must** include an additional page (Appendix A: Resubmission Clarifications) to highlight how the proposal has changed since the original submission.

Award and Duration

The maximum individual award amount is \$100,000. Voluntary cost share is allowed but not required, and proposals with cost share will not be evaluated more favorably than others. The start date for all projects will be July 1, 2023. The budget period will be 12 months (July 1, 2023 – June 30, 2024). Please plan a project that can be completed within the project period. No-cost extensions will not be offered; extensions will require a formal supplemental proposal for re-award of some or all unused funds in FY 2024. **Such extensions are strongly discouraged and will be rare.**

Use of Funds

Requested funds must be used solely to carry out the research project as outlined in the proposed budget. Budgets must be well justified and appropriate to the type and extent of the proposed project; they will be carefully evaluated for their feasibility. Once a project is awarded funding, and the budget is finalized, changes in scope or budget revisions of more than 10% per line item (or more than \$10,000) will require prior approval.

Allowable costs include the following:

- PhD student assistantship (stipend, tuition, health insurance) **[see note below]**
- MS student assistantship (stipend, tuition, health insurance) **[see note below]**
- Undergraduate or MS student hourly wages
- UTC faculty or staff course release/replacement costs
- Up to two months of UTC faculty summer salary
- Other personnel costs
- Fringe benefits associated with requested salary/wages/stipends
- Equipment (items valued at \$5,000+) & Sensitive minor equipment (items valued at \$1,500+)
 - **May not exceed 30% of the total proposed budget**
- Software
- Travel
- Publication fees
- Materials and supplies

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

Note on Graduate Assistantship Funding: All proposals that fund PhD students with assistantships MUST include a stipend of at least **\$24,000** per calendar year. All proposals that fund MS students on assistantships MUST include a stipend of at least **\$16,000** per academic year (fall + spring) for MS students. There will be no exceptions. All PhD students must be funded on assistantship for 12 months; MS students may be budgeted hourly instead of on an assistantship. MS students on assistantship may be budgeted hourly in the summer.

In addition to stipend, PIs must budget for tuition remission and health insurance for both PhD and MS students **on assistantships**, per the following table:

Budget Item	Cost
Tuition for graduate students in the Rollins College of Business; College of Health, Education, and Professional Studies; or the College of Engineering & Computer Science	\$5,768 per long semester + \$3,793 per summer [for PhDs] + 3% projected annual increase
Tuition for all other graduate students	\$5,237 per long semester + \$3,439 per summer [for PhDs] + 3% projected annual increase
Health insurance for all graduate students	\$2,688 per calendar year + 5-10% projected annual increase

Tuition and insurance MAY NOT be budgeted for hourly MS students, including in the summer.

Application Process

Each application must follow the requirements outlined in this section, also available on the CEACSE webpage (<https://www.utc.edu/simcenter/ceacse/ceacse-funding-opportunity-overview.php>).

Full Application

Applications are to be submitted to InfoReady Review by 5:00 pm Eastern time, Thursday, October 31, 2022. All PDF documents should be sized for 8.5 in. x 11 in. paper, in one column, with 1 in. (2.54 cm) margins and 11pt type minimum (e.g., Times New Roman). (If Arial is used, the minimum size is 10pt.)

To access InfoReady Review, go to <https://tennessee.infoready4.com/#system> and log in with your UTC info. In the list of open competitions, select “UTC - FY2024 Center of Excellence in Computational Science and Engineering (CEACSE).” Follow the instructions there to submit your application. The following documents are required for submission:

1. A CEACSE **Cover Form** signed by the Lead PI's department/unit head (last page of this RFP).
2. A **Proposal Narrative** of up to seven (7) pages describing the proposed research within the context of the review criteria. This section should answer the following questions:
 - What are the innovative claims of the research?
 - What are the broader impacts of the research (interpersonal, societal)?
 - What is the originality of the work compared to others?
 - What is the technical approach?
 - 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)?
 - What are the specific roles of each PI, co-PI, student, and other personnel included in the proposed project?
 - What will be the end product of the proposed project?
 - What are risks associated with the proposed project (e.g., validity, timing)?
 - A references list may be included at the end of the document and does not count towards the seven-page limit
3. An **Extramural Funding Plan** of up to one (1) page in length. This document should include the following components:
 - A detailed plan to obtain extramural funding after 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
4. **Budget Estimate**, in .xlsx format, using the block budget template available here: <https://new.utc.edu/research/simcenter/news/ceacse/funding-opportunity-overview>. To relieve the burden of developing exact budgets, only budget estimates (i.e., block budgets) are required at the time of proposals for this competition. SimCenter personnel will work with awarded PIs to fine tune their budgets at the time of award. Budgets will be reviewed only to ensure that costs are allowable, reasonable, and sufficient to support the proposed scope of work.
5. A **Curriculum Vitae** for each investigator, up to three (3) pages each. Use the NSF template in SciENCv to create the CV. Quick guides can be found at <https://www.utc.edu/research/research-and-sponsored-programs/sciencv-guide>.
6. A list of the PI's **current (active) and pending (proposed) funding**. Use the NSF current and pending support template in SciENCv to create the document. Quick guides can be found at <https://www.utc.edu/research/research-and-sponsored-programs/sciencv-guide>.

7. **For applicants resubmitting a prior CEACSE proposal ONLY:** A one-page Appendix that explains how the PI has updated the proposal. This requirement does not apply to proposals previously submitted to external sources, and no other proposals may include an appendix.
8. **OPTIONAL** but encouraged: In the “Comments to Administrator(s)” section of the InfoReady Review form, list individuals to exclude as reviewers for your proposal.

Important Notes

All applicants should carefully consider the following additional points:

- 1) CEACSE funds cannot be used to supplant funds or resources that come 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. It must be strong, realistic, and carefully considered to be competitive. At the end of the award period for funded projects, SimCenter personnel will follow up with the PI on proposed external funding plans.

Application Assistance

CEACSE information and FAQ sessions will be held in October 2022. SimCenter staff will outline best practices, answer project-specific questions, and offer general guidance on the program. All are welcome, and PIs who are unsure about applying are strongly encouraged to attend. Writing, proofreading, and detailed budgeting assistance will not be provided for this competition.

Selection Criteria for Funding

All proposed projects must be capable of being conducted within the one-year timeframe and must fulfill the other award constraints noted above in the “Application Details and Requirements” section. Applications will undergo a single-blind peer review, conducted by a mix of faculty from other 4-year universities with expertise in content areas and in computational science and engineering. Reviewers will assign a merit score to each proposal based on the selection criteria, below. Funding decisions will be made by a UTC internal panel that includes Dr. Joanne Romagni (Vice Chancellor for Research) and Dr. Tony Skjellum (SimCenter Director). To make final funding decisions, this internal panel will consider review scores, compatibility with institutional initiatives, and likelihood of project success.

Proposals will be reviewed and scored based on the following criteria:

1. **Intellectual Merit.** Proposals should demonstrate scientific merit in their relevant field(s).
2. **Broader Impacts.** Proposals should demonstrate engagement with an audience outside of the immediate scientific community, including mentoring of graduate students.
3. **Importance.** Proposals should be original, significant, timely, and/or transformative.
4. **Further Funding Potential.** Proposals should document a strong potential to directly transform anticipated results into **new** extramural funding initiatives.
5. **Feasibility.** Proposals should include a work plan and budget that are feasible and closely aligned; the budget should reflect the scope of the proposal.
6. **Strategic Excellence [considered by the internal review panel only].** Proposals should clearly articulate how the project aligns with strategic goals of the department, college, and institution. Included here is an impact on PhD production.

Any PI uncertain as to whether their research project can meet the above criteria should contact Dr. Tony Skjellum (tony-skjellum@utc.edu) **before preparing an application.**

Award Requirements

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

Budget & Award Management Requirements:

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. Any violations of budget policies will result in chargebacks to the PIs’ department(s).

Meetings & Reporting Requirements

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

- Participate in an orientation session to be held in August 2023
- Submit a brief status report each quarter to via InfoReady Review. **Due dates:** October 1, 2023; January 1, 2024; April 1, 2024
- Participate in one midterm CEACSE award meeting to share progress with Dr. Skjellum on the research activity, discuss challenges or opportunities, etc.
- Present on research activities at the annual ReSEARCH Dialogues conference in April 2024
- Submit a final report within 30 days of the award closing that provides a comprehensive summary of project activities and specific future funding plans

External Grant Submission Requirement

A key requirement of the award is that the research team prepare and submit at least one competitive grant proposal to an external funding source based on CEACSE-funded activities. The research team should plan to work with Sam Stanley (sam-stanley@utc.edu), Ashley Ledford (Ashley-ledford@utc.edu), or Todd Doman (todd-doman@utc.edu) in the Office of Research and Sponsored Programs and/or the SimCenter Director **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 (compensated with funds outside the award amount, provided by the Vice Chancellor for Research).

Individual and Unit Responsibilities

The project PI is responsible for conducting research in a responsible, ethical manner compliant with the UTC faculty handbook; tracking expenditures; fulfilling reporting requirements; supervising students, if any; publishing research; and applying (or planning to apply) for external grant funding. The PI must also ensure that any required IRB and IACUC approvals are completed before the project begins. The PI’s department head is responsible for acknowledging the PI’s time commitments for this project and authorizing course releases, if any. The PI’s dean is responsible for covering all chargebacks to the PI’s department in the case of budget violations or other financial issues.

CEACSE Grants Competition FY 2024: Application Cover Page

Project Information	
Lead Principal Investigator:	
Collaborating Investigator(s):	
Title of Project:	
Research Area (see list on p. 1 of RFP):	
Abstract (200-word limit, with no special symbols):	
Funds Requested: \$	
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*
<i>*Conflict of Interest and Space issues must be resolved prior to submitting the proposal.</i>	
Approval Signature – Lead PI	
<i>By signing here, the Lead PI agrees to provide technical/financial oversight and required reporting if the project is funded and also acknowledges that funding decisions, made under the Office of Vice Chancellor for Research, are final.</i>	
Lead PI: _____	_____
<i>Signature</i>	<i>Date</i>
Approval Signature – Lead PI Department	
<i>By signing here, the Lead PI's Department/Unit Head agrees to provide oversight/administrative support if the project is funded and acknowledges that funding decisions, made under the Office of Vice Chancellor for Research, are final.</i>	
Lead PI Department/Unit Head: _____	_____
<i>Signature</i>	<i>Date</i>