

Concept Papers for Development of UTC RI Convergent Research Initiatives

Due date for submissions: July 15th, 2024

Background

The mission of the University of Tennessee at Chattanooga Research Institute is to develop innovative, multidisciplinary solutions to complex problems of high priority at the local, state and national levels by building partnerships and engaging researchers and leveraging collective resources. The Research Institute launched in 2023 with two research focus areas: Mobility and Quantum Technology.

The Research Institute is looking to invest in at least one additional research focus area. In order to do so, we are requesting concept papers from faculty and staff that propose a convergent research initiative that meets the following requirements:

- 1) Falls under applied computational science and engineering (a statutory requirement of the THEC Center of Excellence funding)
- 2) Includes engagement of a multidisciplinary group of faculty or research staff (at least two departments)
 - a) The departments associated with the PI and co-PI do not necessarily have to be related to computational science or engineering, however their proposed research must include some aspect of computational science or engineering.
 - b) The involved departments may be within the same College.
- 3) Has a modest amount of match (5-10% cash or in kind) from participating Colleges
- 4) Has engaged stakeholders from the community or industry
- 5) Leverages existing infrastructure at the university or include an infrastructure investment plan as part of the concept paper

The evaluation of concept papers from this open call is intended to evaluate a wide range of potential focus areas and to allow UTC RI to develop a more balanced portfolio of campus-wide research activities in applied computational science and engineering.

The new convergent research initiative will receive up to \$300,000 in direct funding per year for three years. A portion of the funding must be used to recruit at least one research faculty or postdoc and two PhD (where feasible) or graduate students. The budget model for a research initiative assumes that at a minimum an additional \$500,000 of external funding will be obtained by the team from programs external to UTC (e.g., NSF, NIH, DOT, DOE or other federal or non-federal sponsors) within 4 years from the start of the investment. Successful research initiatives will also need to demonstrate potential for substantial growth beyond this initial three-year period.

Eligibility

The Lead PI of the concept paper needs to be a tenured or tenure-track faculty member and other collaborators can include any full time UTC faculty or staff. There must be at least one co-PI from a department different from the PI's own department. Investigators from any academic discipline are encouraged to apply, but the focus area must be interdisciplinary in nature and have a strong computational aspect.

Selection Process

In phase I, concept papers from this open call will be reviewed by UTC RI's leadership team and a subset of UTC RI's Internal Advisory Committee to select two or three topics that will be invited for development and review in Phase II of this process. Selection of topics for Phase II is expected to be complete by August 15th. In Phase II, proposing teams will be asked to refine their written concept paper and make a presentation to the UTC RI leadership team and additional members of the UTC RI Internal Advisory Committee. Selection of one new research initiative will be completed by October 15th. The anticipated start date for the award is January 1, 2025.

Each concept paper must identify a single individual who will be the Principal Investigator (PI) and will represent the submitting team as the primary point of contact if the topic advances through the selection process.

Selection Criteria

A successful convergent research initiative must have a compelling technical concept, a well-defined growth trajectory for national impact, and a strong core of technical leaders at UTC. Defining characteristics of each criterion are listed below. The selection process will prioritize research initiatives that can meet each of these characteristics. .

Strength of technical concept

- The technical concept should not be too broad (e.g., “the environment) or too narrow (e.g., “reinforced screw fittings for flagpoles”)
- The technical concept should allow for strategic growth for UTC and the UTC RI
- The technical concept will remain an exciting field in 15 years

Growth trajectory for national impact

- The focus area has opportunities for future funding from other sources that significantly exceed the initial UTC RI investment, with a well-defined plan to secure at least \$500,000 within 4 years of the start date.
- Opportunities exist to align the focus area with economic and workforce development in the state of Tennessee

Technical leaders for the concentration area

- 3-4 “anchor” researchers at UTC (beyond the PI and Co-PI) with recognized technical leadership (based on both publications and grant activity) in the focus area are identified who will coordinate the growth and sustainability of the research initiative
- Research focus area strongly aligns with multiple academic departments at UTC

Concept Paper Format

The concept paper should be written in an easily readable 12 point font (Times New Roman, Arial, Calibri, etc.) with 1” margins. A concept paper must include a 2-3 page technical concept description and one additional page of supplementary information, as specified below.

Required elements of the 2-3 page technical concept description are:

1. A title that succinctly describes the proposed research initiative
2. Identification of a single Principal Investigator (PI) (name, job title, affiliation) who will represent the concentration area in communication with the UTC RI selection process
3. Identification of any co-PIs (name, job title, affiliation)
4. A description of the proposed research initiative written to be useful to both experts in the topic area and readers from other fields
5. A clear definition of multiple challenges within the focus area that the research initiative could address.
6. A description on community/industry partnerships.

In an additional page, provide the following information:

1. List 3-4 “anchor” mid-career/senior researchers at UTC who align with the focus area (name, job title, affiliation) (these are separate from the PI and co-PI)
2. List 3+ disciplines at UTC that would be strongly involved in the research initiative
3. List academic departments from UTC that would be strongly involved in the research initiative
4. List primary academic and national lab competitors that have established efforts related to the focus area
5. List any federal agencies with a relevant funding portfolio, including an estimate for total R&D funding
6. List key industry entities performing relevant R&D

How to Submit

Applications must be submitted via InfoReady Review by **11:59 PM EST on July 15th, 2024**. No emailed applications will be accepted.

To access InfoReady Review, go to <https://tennessee.infoready4.com/#system> and log in with your UTC ID and password. In the list of open competitions, select “UTC RI - FY2025-2028

CEACSE Request for Concept Papers". Follow the instructions in InfoReady to submit your application.