



**NATIONAL CENTER FOR TRANSPORTATION  
CYBERSECURITY AND RESILIENCY**  
*A USDOT National Transportation Center*

**Request for Proposals  
Fiscal Year 2024-2025**

**Partner Institutions**



**Important Dates**

<b>RFP Issued</b>	Friday, August 30 <sup>th</sup> , 2024
<b>Proposals Due</b>	Monday, September 30 <sup>th</sup> , 2024 (5.00 PM EST)
<b>Selection Notifications</b>	1 <sup>st</sup> week of November, 2024
<b>Project Start Date</b>	Beginning of Spring semester/Winter quarter, i.e., January 2025

## Overview

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The National Center for Transportation Cybersecurity and Resiliency (TraCR) is a United States Department of Transportation (USDOT) National University Transportation Center (UTC). TraCR's mission is to build an ironclad defense for the nation's transportation systems against cyberattacks. Clemson University leads TraCR and has eight other partner institutions: Benedict College, Florida International University, Morgan State University, Purdue University, South Carolina State University, the University of Alabama at Tuscaloosa, the University of California at Santa Cruz, and the University of Texas at Dallas.

TraCR's vision is to pioneer the advancement of cybersecurity and resilience, ensuring robust protection for transportation systems and infrastructure against both current and emerging threats. This 2024-2025 fiscal year funding cycle is the second competitive project selection cycle for TraCR, for which we are releasing this request for proposals (RFP) for the nine participating universities. **Each submitted project for potential funding must adhere to the center's one or more of the four research thrusts highlighted below. For projects awarded in the 2023-2024 funding cycle that want to continue the project into a second year, a new proposal must be submitted with new tasks using the same template provided. Funding for existing projects is not guaranteed, and such proposals will undergo the same peer-reviewed evaluation process, and first year's performance will be a critical factor. Such proposals must include specific results and outputs from the prior year's awarded project. However, new proposal ideas are highly encouraged for this funding cycle.**

## Research Focus for this Funding Cycle

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All research proposals to receive consideration during this 2024-2025 funding cycle should focus on TraCR's core mission statement: **To Pioneer the Advancement of Cybersecurity and Resilience, Ensuring Robust Protection for Transportation Systems and Infrastructure Against Both Current and Emerging Threats.**

We will consider projects for funding that incorporate one or more of the core thrusts set forth by the center:

**Thrust 1:** Security and Resiliency

**Thrust 2:** User and Data Privacy

**Thrust 3:** Society and Environment

**Thrust 4:** Emerging Quantum Computing Threats and Opportunities

## Multi-Campus Collaboration and Technology Transfer Requirements

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We especially encourage proposals that feature collaborations across multiple partner institutions, with a specific **requirement of collaboration between at least two institutions**. Beyond the proposed research tasks, all projects should also **contain a technology transfer plan** so that the funded projects in this cycle can lead to impacts beyond the immediate research tasks.

## Eligibility for Funding for this Cycle

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Researchers at all nine participating universities listed in the proposal are encouraged to apply if the following eligibility requirements are met. The Associate Director at each TraCR partner institution will share the RFP with his or her team members. **If you have questions about eligibility, please contact the TraCR Associate Director at your institution to confirm eligibility.** Contact information for all key TraCR personnel is provided later in this RFP.

- The **lead principal investigator (PI) must be a tenure-track/tenured/research faculty member at one of the nine universities** in the TraCR consortium.
- The **lead PI may submit only one proposal on which he/she is the lead investigator.** The lead PI can be a co-PI on other proposals.
- All proposals should **feature collaboration between two or more TraCR institutions.**

## Funding Availability for this Cycle

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Below are the specific requirements concerning budgets for proposed projects.

- All proposed projects **require a minimum 100% non-federal match**, with larger matches encouraged if possible. Proposers are required to highlight this match in the proposal budget clearly.
- Matching funds are especially encouraged from public and/or private research partners, which will contribute to technology transfer.
- Each project will be awarded funding from anywhere between \$50,000-\$100,000 (per institution), depending on the scope of the proposed research activities.

## Cost Share/Matching Funds

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All projects require non-federal cost-share/match of the total costs as cash or in-kind services from project partners, including universities, transportation, and other public agencies, industry, and non-profit organizations. **All partners on multi-university proposals must provide the required match amount for their specific budget.** Cash match is any direct financial contribution a partner provides to directly support the project through salaries, benefits, tuition, expendable property, supplies and services, etc. Third-party in-kind non-federal match may include unrecovered indirect costs, values for recipient contributions of services, volunteer services furnished by professional and technical personnel, consultants, or other skilled or unskilled labor if service is an integral or necessary part of the project, or donated supplies. **No other sources of federal funds, including from non-USDOT departments and agencies, may be used for matching funds.**

## **Project Award Period**

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PIs will be notified by late November 2024 whether their submitted proposal has been selected for funding. The anticipated project start date is the beginning of the 2025 Spring semester/Winter quarter, January 2025, at each campus. All projects will be 12 months in length.

## **Reporting Requirements**

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Selected projects must keep TraCR leadership updated on all project activities and any project changes. The reporting requirements for selected projects are as follows:

- Any revisions to the project description, work plan, and schedule based on external reviews will be due two weeks after project award notifications.
- A quarterly progress report will be due every three months (April 30<sup>th</sup>, 2025, July 31<sup>st</sup>, 2025, October 30<sup>th</sup>, 2025), while the final report will be due January 31<sup>st</sup>, 2026. The TraCR leadership will send a reminder for report submission before the deadline. The report must be submitted on the template that the TraCR leadership will provide to awarded projects.
- One quarterly SF270, corresponding to the date the quarterly progress report is submitted, is required from each institution on TraCR-funded activities. Note that this SF270 should be provided by the university (including expenses on all projects), rather than for each project.
- The quarter report must also include justification for every expenditure (match must be at least 100% of the USDOT fund) incurred during the quarter.
- The final project report will be due one month after the project end date and should be submitted on the template that the TraCR leadership will provide to awarded projects. The final report should include lists of papers and presentations, media mentions, technology transfers, and a deployment plan (if applicable).

## **Electronic Submission of Proposals**

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Proposals should be submitted using the template provided with this RFP no later than **5 PM EST on Monday, September 30<sup>th</sup>, 2024**, to [tracr@clemson.edu](mailto:tracr@clemson.edu).

## **Questions**

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Any questions regarding this RFP can be emailed to [tracr@clemson.edu](mailto:tracr@clemson.edu). Please include “**TraCR RFP Question**” in the subject line.

## Key Personnel and Contact Information

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NAME	E-MAIL ADDRESS	PHONE
<b>Mashrur “Ronnie” Chowdhury</b> Director, Clemson University	<a href="mailto:mac@clermson.edu">mac@clermson.edu</a>	(864) 656-3313
<b>M Hadi Amini</b> Associate Director, Florida International University	<a href="mailto:amini@cs.fiu.edu">amini@cs.fiu.edu</a>	(305) 348-9936
<b>Alvaro A. Cardenas</b> Associate Director, University of California Santa Cruz	<a href="mailto:alvaro.cardenas@ucsc.edu">alvaro.cardenas@ucsc.edu</a>	(831) 459-4879
<b>Balaji Iyengar</b> Associate Director, Benedict College	<a href="mailto:balaji.iyengar@benedict.edu">balaji.iyengar@benedict.edu</a>	(803) 960-6197
<b>Mansoureh Jeihani</b> Associate Director, Morgan State University	<a href="mailto:mansoureh.jeihani@morgan.edu">mansoureh.jeihani@morgan.edu</a>	(443) 885-1873
<b>Steven Jones</b> Associate Director, The University of Alabama, Tuscaloosa	<a href="mailto:steven.jones@ua.edu">steven.jones@ua.edu</a>	(205) 348-6959
<b>Judith Mwakalonge</b> Associate Director, South Carolina State University	<a href="mailto:jmwakalo@scsu.edu">jmwakalo@scsu.edu</a>	(803) 536-8321
<b>Bhavani Thuraisingham</b> Associate Director, The University of Texas, Dallas	<a href="mailto:bxt043000@utdallas.edu">bxt043000@utdallas.edu</a>	(972) 883-4738
<b>Satish Ukkusuri</b> Associate Director, Purdue University	<a href="mailto:sukkusur@purdue.edu">sukkusur@purdue.edu</a>	(765) 494-2296
<b>Megha Patel</b> Program Manager, Clemson University	<a href="mailto:megha@clermson.edu">megha@clermson.edu</a>	(951) 288-5224
<b>Sabbir Salek</b> Senior Engineer, Clemson University	<a href="mailto:msalek@clermson.edu">msalek@clermson.edu</a>	(864) 207-0537

# Proposal Preparation Instructions

## Proposal Template

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- Please use the template provided with this RFP to prepare and submit your proposal.
- Include a one (1) page **Proposal Cover Page** on your proposal. The template below includes this cover page. **Do not include names on any other page of the proposal.** The applicable Associate Director from the lead PI's institution must sign the cover page and be notified of the proposal submission.
- After the cover page, you are allocated **six (6) pages for the Proposal Description** (including all graphics and references) and two **(2) pages for the Budget and Budget Justification**.
- Projects awarded in the 2023-2024 funding cycle seeking funds for continuing work on the same topic should include a section on prior project results and outputs within the Proposal Description.
- The Proposal Description and the Budget sections should be single-spaced with 1" margins.
- The minimum font size should be 11 pt in Cambria, Calibri, Arial, Helvetica, or Times New Roman.

## Technical Description (including within Proposal Description)

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- The technical description section should be at most three (3) pages, including all graphics and references.
- The technical description should include the contributions of this research to practice and/or knowledge, method, and work plan with a detailed description of the tasks to be conducted.
- The expected contributions of different investigators and different universities should be clearly stated.
- The contributions of different universities should be evident and complementary for collaborative projects.
- The schedule for phases and tasks should be included following the technical description (does not count towards the 3-page requirement but should be within the six (6) pages of the proposal description). The external reviewers will be asked whether the schedule fits the described work plan.

## Budget and Budget Justification

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- Please use the provided template for the budget and budget justification.
- The budget documents should be at most two (2) pages.
- Note that all projects require a 100% non-federal match.
- Please coordinate the submission with your institution's research office for review of appropriate fringe benefit rates, overhead rates, and cost-share.
- The external reviewers will be asked to evaluate whether the budget is appropriate for the described work plan.
- The maximum amount of funding used for research shall not exceed the total amount available for research for each institution.

## Letters of Support

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Letters of support from transportation agencies or other related organizations are encouraged but optional.

## Proposal Evaluation

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Submissions will be evaluated through a blind review process, removing all investigators' names, to aid in an unbiased review process. To assist in the review process, **please provide the names and contact information of at least three potential reviewers with whom you do not have a conflict of interest.** The review panel for each proposal shall consist of at least three (3) external reviewers. The evaluators will consider relevance to the call, originality, potential impact, implementation feasibility, budget, and schedule.

Proposals can receive a maximum of 100 points as per the rubric below:

- **(Up to 20 points)** How well does the proposed research fit TraCR's research focus for this cycle as identified in this RFP?
- **(Up to 10 points)** Is this a collaborative proposal (with meaningful contributions from multiple universities)?
- **(Up to 15 points)** Have the proposers adequately described the need for the research, their goals and objectives, and potential future research?
- **(Up to 20 points)** Technical Transfer/Implementation - Is this adequately described? Does the plan seem realistic? Have the researchers identified potential implementations of their work? Do they have a realistic technology transfer plan? Has the team accomplished significant results and produced tangible outputs from the prior year's funding (if this a continuation of the Year 1 project)?
- **(Up to 25 points)** Technical Description including Overview, Method (detailed description of tasks), Expected Impacts and Benefits. How excited are the reviewers by this topic and the potential contributions of the researchers?
- **(Up to 10 points)** Schedule and Budget - Do the schedule and budget seem reasonable for the described tasks? Is there good use of match money and funds distribution among universities and collaborators?

# **TraCR Proposal Template**



# Cover Page

## 2024-2025 Fiscal Year Proposal

<b>Lead PI</b>	
<b>Email</b>	
<b>Phone</b>	
<b>Department</b>	
<b>Institution</b>	
<b>Project Title</b>	

<b>Investigator 1</b>	
<b>Title</b>	
<b>Department</b>	
<b>Institution</b>	
<b>Email</b>	
<b>Phone</b>	

<b>Investigator 2</b>	
<b>Title</b>	
<b>Department</b>	
<b>Institution</b>	
<b>Email</b>	
<b>Phone</b>	

<b>Investigator 3</b>	
<b>Title</b>	
<b>Department</b>	
<b>Institution</b>	
<b>Email</b>	
<b>Phone</b>	

<b>Investigator 4</b>	
<b>Title</b>	
<b>Department</b>	
<b>Institution</b>	
<b>Email</b>	
<b>Phone</b>	

## Acknowledgments

Lead Principal Investigator	Date
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Associate Director 1	Date
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Associate Director 2
Date

Associate Director 3                      Date

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Associate Director 4
Date

## Proposal Description

*Six (6)-pages maximum, inclusive of all graphics and references*

### Need for Research

Describe why this research is necessary, the problem/issue you propose to address and state the project's goals concerning this problem.

### Prior Project Results and Outputs (If Applicable)

If this proposal is to continue working on a 2023-2024 awarded project, please include all important results and outputs from the prior project here. Note that such proposals should clearly outline the new goals and objectives below.

### Project Highlights and Impacts

Please include 3-5 bullets of highlights of the proposed project. Make a case for (a) the potential for implementation and (b) the expected impacts and benefits of this project. Note that this description will be submitted to USDOT immediately following project selection.

### Research Goals and Objectives

State the research goals and objectives. How does the project fit under the TraCR vision and thrust areas? The focus areas for the thrusts are as follows:

**Thrust 1:** Security and Resiliency

**Thrust 2:** User and Data Privacy

**Thrust 3:** Society and Environment

**Thrust 4:** Emerging Quantum Computing Threats and Opportunities

### Technical Description *Three (3)-pages maximum inclusive of all graphics and references*

Provide a succinct project description. Describe how the objectives will be accomplished through a logical, innovative, and rational plan. Technical description **MUST** include a work plan with a detailed description of the tasks and methods to be used.

**Task 1:** [Task name]

[Task 1 description]

**Task 2:** [Task name]

[Task 2 description]

**Task 3:** [Task name]

[Task 3 description]

## Task Schedule

This can be a simple list (e.g., a timeline or a Gantt chart). For multi-university collaborative proposals, provide a clear explanation within the description of deliverables that will be completed by the partner university, and indicate the degree to which tasks depend on each other; please use a table to present this information.

### Task 1: [Task name]

[Task 1 deliverables]

E.g. Deliverable 1.1, 1.2 and so on.

### Task 2: [Task name]

[Task 2 deliverables]

E.g. Deliverable 2.1, 2.2 and so on.

### Task 3: [Task name]

[Task 3 deliverables]

E.g. Deliverable 3.1, 3.2 and so on.

#	Deliverable	Q1	Q2	Q3	Q4
1.1	Deliverable description				
1.2	Deliverable description				
1.3	Deliverable description				
2.1	Deliverable description				
2.2	Deliverable description				

## Future Research and Technology Transfer

Please describe how this research can lead to larger research projects with diverse research partners and proposed technology transfer plans.

## Budget and Budget Justification

*Two (2)-page maximum does not count towards the six-page limit above.*

Please use the following table to provide a detailed budget. Proposals should be budgeted to begin January 2025 at the PIs' respective campuses. The duration of the proposed project is one year. Note that this table follows the same format as used for UTC reporting. Please coordinate this submission with your institution's research office for review of appropriate fringe benefit rates, overhead rates, and cost-share. The budget justification (one-page maximum) should include a description of all proposed UTC costs and Non-Federal cost share.

UTC Budget Category	University 1 Name	University 2 Name	Total
Salaries, Faculty			
Salaries, Staff			
Salaries, Student			
Fringe Benefits, Faculty			
Fringe Benefits, Staff			
Fringe Benefits, Student			
<b>Subtotal Personnel</b>			
Student Support, Tuition			
Student Support, Health Insurance			
Equipment (over \$5,000)			
Materials & Supplies			
Computer Software/Peripherals			
Travel, Domestic			
Other Direct Costs (explain)			
<b>Total Direct Costs</b>			
F&A - Modified Total Direct			
<b>Total Budget</b>			

Non-Federal Cost-Share Budget Category	University 1 Name	University 2 Name	Total
Salaries, Faculty			
Salaries, Staff			
Salaries, Student			
Fringe Benefits, Faculty			
Fringe Benefits, Staff			
Fringe Benefits, Student			
<b>Subtotal Personnel</b>			
Student Support, Tuition			
Student Support, Health Insurance			
Equipment (over \$5,000)			
Materials & Supplies			

Computer Software/Peripherals			
Travel, Domestic			
Other Direct Costs (explain)			
<b>Total Direct Costs</b>			
F&A - Modified Total Direct			
<b>Total Budget</b>			

**Non-Federal Cost-Share Sources:**

University 1 Sources:

University 2 Sources:

(for example, State DOT, Private Industry Organization Name, Internal University Support)

**Note for PIs:**

Your budget should include overhead or Facilities and Administrative (F&A) costs.

## Potential Reviewers

Please provide names and contact information for at least three potential reviewers with whom you do not have a conflict of interest.

1. Name:  
Institution:  
E-mail:  
Reason for suggestion as a reviewer:
2. Name:  
Institution:  
E-mail:  
Reason for suggestion as a reviewer:
3. Name:  
Institution:  
E-mail:  
Reason for suggestion as a reviewer: