

# RAPiDS Cycle 2 Request for Proposals

## Overview

With the launch of Cycle 2 of the Rapid AI Prototyping and Development for patient Safety (RAPiDS) Grants Initiative, we invite you to partner with us in leveraging artificial intelligence to create clinical solutions that impact quality improvement efforts.

Sponsored by the College of Medicine Office of AI Application and Innovation, RAPiDS aims to connect clinical experts who have ideas on how to improve the quality of care with AI experts who have the AI analytics and tools to put them into motion. These teams will leverage AI tools to advance the science and practice of clinical quality improvement (QI) while using QI methodologies to advance the safety and sustainability of clinical AI models, a virtuous cycle referred to as the AI/QI program.

RAPiDS Cycle 1, launched in the fall, developed a core infrastructure and best practices for applying AI tools to QI challenges. The major deliverable for Cycle 1 is the Patient Safety Graph, which is a multimodal graph of patients, clinical care teams, and clinical processes linked to patient outcomes and process measures. The Patient Safety Graph is a core resource enabling various AI models including GraphAI. In one example of the importance of developing an AI-enabled infrastructure for patient safety, the construction of a single network of perioperative clinical teams caring for patients on just the day of surgery alone required over 100 hours of high-performance computing time. The use of HiPerGator and a partnership with the NVIDIA Advanced AI Platform for Enterprise decreased that model construction time from three months to two weeks on average, enabling us to proceed with the construction of dozens of more complicated networks necessary for GraphAI models.

The RAPiDS Cycle 1 infrastructure can now be applied to prototype and develop clinical quality improvement projects led by College of Medicine physicians through the RAPiDS Cycle 2 funding mechanism. **All clinical ideas are welcome, and no AI experience is required of applicants.**

## Goals

RAPiDS Cycle 2 (RC2) aims to develop transdisciplinary collaborations between AI engineers from the Office of AI Application and Innovation and teams of clinical experts to apply new AI infrastructure to critical QI problems at UF Health. Proposals should address health and health care challenges for select populations including maternal care; surgery, trauma & acute injury; or Alzheimer’s disease and related dementias and care of older adults (Table 1). Proposals should also leverage RAPiDS-supported AI resources including geospatial data & social determinants of health, patient safety graph & care pathway optimization using graph neural networks, and/or natural language processing (NLP) of clinical text documents, in addition to more traditional structured data from electronic health record systems (Table 1).

Table 1: Matrix of RC2 Applications and Methods for AI Solutions in QI

	Geospatial data & social determinants of health (including social and economic conditions impacting health, such as food insecurity)	Patient safety graph & care pathway optimization using graph neural networks	Natural language processing (NLP) of clinical text documents
Maternal care			
Surgery, trauma & acute injury			
Alzheimer’s disease and related dementias and care of older adults (can include perioperative care, hip fractures, delirium, etc.)			

RAPiDS Cycle 2 will be administered through a competitive, peer-reviewed process to support proposals that have a high likelihood of directly improving the quality of patient care, leveraging AI capabilities available through the AI/QI program and being well-positioned to be leveraged into extramural funding.

**Eligibility**

All clinical faculty in the College of Medicine are eligible to apply.

Proposals should emphasize the clinical QI challenges, as well as the limitations of existing methods to address them. **If selected to participate, your clinical expertise will be extensively supported by AI expertise from the AI/QI engineering team.**

**Information Sessions**

Visit the Office of AI Application and Innovation [webpage](#) for more information, including a recorded overview of RAPiDS Cycle 2 that covers background, objectives, application process, and project execution. A live information session will also be hosted via [Zoom](#) Monday, May 8 at 10 a.m. to provide an opportunity for Q&A and support proposal preparation.

Our AI/QI team would be more than happy to answer questions via email at [RAPiDS-Grants@ufl.edu](mailto:RAPiDS-Grants@ufl.edu).

## Application

The application is available in Appendix A and on the Office of AI Application and Innovation [webpage](#). There are two options to submit applications including

1. Email a single PDF document with the information outlined in Appendix A to [RAPiDS-Grants@ufl.edu](mailto:RAPiDS-Grants@ufl.edu).
2. Submit the information outlined in Appendix A via a [Qualtrics-enabled form](#).

## Budgetary Considerations

**Teams are encouraged to submit a budget proposal specific to their project needs. Examples include funding of research assistants, data collection outside of the EHR, travel and publication fees, etc.** Please note that budget items related to electronic health record data, data storage or processing, computing, statistical analysis, “AI” work including coding or model development, or capital equipment will not be considered as these capabilities and consultants will be provided by the AI/QI program. Similarly, budgets should be constructed for the given scope of prototyping and development, rather than long-term implementation. **If there is an unclear overlap of a given budget category with existing AI/QI resources, please indicate this in the submission.** RC2 funds cannot be used for salary support of the PI or Col’s effort.

## Timeline

The grant submission deadline for RC2 2023-2024 is May 31, 2023 (updated). Applications must be submitted before midnight on the deadline via [email](#) or the [Qualtrics-enabled form](#). No extensions will be considered. Funding will begin approximately six weeks after the submission deadline. Figure 1 provides the RAPiDS Cycle 2 timeline.

Figure 1: Updated RAPiDS Cycle 2 Timeline



## Grant Review Process

Applications will be assigned to a review panel consisting of clinicians, data scientists, project managers, and QI professionals.

Following review, the AI/QI team will connect with the contact PI of lead proposals to discuss their application and develop a more in-depth journey map that develops an AI solution specific to the given clinical challenge. This planning process will also develop objectives and a project management plan including key milestones for a 12-month project timeline and final deliverables.

The final award of funds will be contingent upon agreement between the lead applicant(s) and the AI/QI team on the co-developed project management plan.

If a co-developed project management plan cannot be agreed upon, the AI/QI program will consider runner-up proposals in a rank-order process based on the initial grant review of applications.

The AI/QI program team will make the final funding decisions.

Scores and narrative summary statements will be provided to the contact PI of each application regardless of the funding decision. Applicants are encouraged to revise and resubmit their proposals in future RFPs in the event their project was not selected for funding during this round. Revised applications should include a one-page response to critiques raised in the summary statement, indicating changes in the revised submission using a different colored font.

### Review Criteria

The AI/QI program team will evaluate reviewer comments and scores according to the following criteria:

1. Clinical impact on the health and/or healthcare of selected populations
2. Innovative leverage of AI resources and/or methods
3. Scale and scope of impact achievable in 12 months
4. Mature project management infrastructure with achievable milestones
5. Budget that takes advantage of the AI/QI resources including the AI Labs for Patient Safety (ALPS) infrastructure, data, and modeling expertise

### Award Period

The awards are for a total period of 12 months. If the awardee wishes to modify this award period, they must submit a formal request to the AI/QI program at [RAPiDS-Grants@ufl.edu](mailto:RAPiDS-Grants@ufl.edu).

### Funding

We anticipate funding awards ranging between \$10,000 - \$200,000. The number of awards funded will be based on the number of viable proposals received, the scope of successful proposals, and the availability of funds. Funds will be awarded in two installments with the second installment dependent upon the demonstration of satisfactory progress toward agreed-upon project milestones.

### Project Execution

Grants will be implemented using a contract-style arrangement. Funded teams will meet with the AI/QI core team weekly to review project progress and develop updated execution plans. In general, in month 1 the RC2 teams will develop a formal project management plan under the guidance of our project management consultants. Months 2 – 3 will review existing data and develop plans to address data gaps apropos to the proposal, with revision of existing IRB protocols as needed. Months 4 – 10 will include agile project management plans including project execution, ongoing data analysis, and delivery of preliminary results to key stakeholders. Months 11 – 12 will focus on the dissemination of findings, planning for potential implementation, and after-action review.

## Appendix A: Application Requirements

**Proposal Submitted Via Email to [RAPiDS-Grants@ufl.edu](mailto:RAPiDS-Grants@ufl.edu):** The proposal should include responses to items 1 – 6 below and must be written using Calibri size 11 font, single-line spacing, standard 8.5" × 11" pages with margins not less than 0.5". Please pay close attention to all instructions – applications that do not meet content and formatting requirements will not be reviewed. Please number pages and submit the proposal as a single PDF file.

1. Cover Page: Include project title; contact information for the Principal Investigator/Co-Principal Investigator (name, college/department, position/title, email, phone, mailing address) and project team information (name, college/department, position/title, email).
2. Abstract: Explain the rationale for the quality improvement project and identify the health and healthcare challenges for the selected population and the RAPiDS-supported AI tool(s) to be utilized (Table 1).
3. Quality Improvement Plan:
  - a. Problem – Describe the health and healthcare challenges for the project’s target population (Table 1).
  - b. Goal(s) – Clearly list desired change(s) including magnitude and timeline.
  - c. AI Resources – Discuss how the RAPiDS-supported AI tools selected could be utilized (Table 1). Clarify how AI tools are more advantageous than existing tools to tackle the health and healthcare challenges of the selected target population. Please note that specific details on modeling approaches are not necessary for this application.
  - d. Potential Intervention – Describe the potential practice change or clinical intervention(s) that could be implemented along with measures, outcomes, challenges, and timeline.
4. References
5. Budget: Teams are encouraged to submit a budget proposal specific to their project needs. Examples include funding of research assistants, data collection outside of the EHR, travel and publication fees, etc.
  - a. List the Total Funding Amount Requested (\$10,000 – \$200,000)
6. Budget Justification: Provide a summary of each position (Non-Faculty support staff e.g., technicians, postdoctoral fellows, nurses, graduate assistants); supplies; and/or other expenses requested for this project.

### **Proposal Submitted Via a Qualtrics-enabled form at**

**[https://ufl.qualtrics.com/jfe/form/SV\\_3fK5Az4IrlfR1UG](https://ufl.qualtrics.com/jfe/form/SV_3fK5Az4IrlfR1UG):** The Qualtrics-enabled form follows the outline provided in items 1 – 6 above.