

## Health Disparities arising from Artificial Intelligence Pilot Awards

### 1. Overview

The HDAI (Health Disparities arising from Artificial Intelligence) pilot awards are sponsored by the Biomedical Informatics Core of the Clinical and Translational Science Institute (CTSI). This funding opportunity is designed to encourage new research addressing ensuring that artificial intelligence (AI) in healthcare promotes equity and benefits all populations, especially historically underserved and marginalized groups. AI is revolutionizing healthcare by enhancing diagnoses and risk assessment through predictive models, recommending personalized treatments, and streamlining healthcare delivery. However, there is growing concern that AI may inadvertently perpetuate or even exacerbate existing health disparities. Some examples of how AI may reinforce inequities are:

- *Data Bias: AI models trained on non-representative data may not perform effectively across different demographic groups, leading to misdiagnoses or ineffective treatments.*
- *Algorithmic Bias: AI algorithms can inherit biases present in their training data, resulting in unequal healthcare recommendations or eligibility in health research.*
- *Access Inequality: Disparities in access to AI technologies can widen the healthcare gap between different socioeconomic and racial groups.*

The aim of this funding opportunity is to stimulate new research that investigates the ways in which AI contributes to health disparities and develops strategies to mitigate these effects. To be responsive to this opportunity, projects must include one or more of the following topics in the context of AI: identify contributors to disparities, develop mitigation strategies, enhance accessibility, and inform policy and practice. Because this funding opportunity is for pilot studies, applications should include an explicit discussion of how the intended aims can lead to larger studies in the future.

**Note: All projects must start by June 1, 2025**

*Examples of projects that would fit this opportunity include:*

- *Identify contributors to disparities:*
  - *Analyze how AI applications may contribute to health disparities.*
  - *Investigate the role of biased data and algorithms.*
- *Develop mitigation strategies:*
  - *Create methods to detect and correct biases in AI systems.*
  - *Propose frameworks for equitable AI development and deployment.*
- *Enhance accessibility:*
  - *Explore ways to improve access to AI-driven healthcare for underserved populations.*
  - *Assess the impact of AI technologies on different demographic groups.*
- *Inform policy and practice:*
  - *Provide evidence-based recommendations for policymakers and healthcare providers.*
  - *Promote ethical standards and best practices in AI healthcare applications.*

## 2. CTSI Assistance (Optional)

If you would like to request a consultation, please email Aleks Zivic [abz17@pitt.edu](mailto:abz17@pitt.edu). Make note of your intention to apply for the Health Disparities AI Pilot Awards in the subject line, and we are happy to provide feedback about the program or your application.

## 3. Key Dates

**Round 1 Applications Open:** Wednesday, November 13

**Round 1 Letter of Intent Deadline:** Wednesday, December 11 by 11:59 p.m. EDT

**Notification to Advancing Teams:** Friday, December 20

**Round 2 Full Proposal Submission Date:** Friday January 24, 11:59 p.m. EDT (by invitation)

**Notification to Awardees:** Wednesday, February 12

**Anticipated Earliest Start Date:** May 15

*All projects must start by June 1, 2025*

## 4. Funding Information

Award funding of up to \$50,000 is available to cover direct costs; no indirect support will be provided. The award period will last for 12 months, beginning when all regulatory and administrative approvals have been received. **Projects must start within 3 months of the award notification**

***Please be aware, under no circumstances, do the Health Disparity AI pilots have any mechanism for no-cost extensions; any funds that are not spent during the award period will be forfeited.***

Before any funding can begin, awardees must provide documentation of all necessary regulatory approvals (IRB, IACUC, hSCRO, IBC, CORID, etc.). Once regulatory documentation is provided, awarded projects will undergo an administrative review from NCATS, which may take up to 30 days. Funding cannot begin until projects have been approved by NCATS. Because of this, all applicants are strongly encouraged to have the necessary regulatory documents ready for submission.

## 5. Bonus Award Eligibility

**Early Career Underrepresented Investigator Bonus Award Eligibility**

Applications that deliver a meaningful research experience to an early career investigator from a group underrepresented in the biomedical workforce may be eligible for **an additional \$5,000** of funding. For this bonus, we will consider “underrepresented group” to include individuals with backgrounds described in the [Notice of NIH’s Interest in Diversity](#). These include racial and ethnic groups that are underrepresented in biomedical research: Blacks or African Americans, Hispanics or Latinos, American Indians or Alaska Natives, Native Hawaiians and other Pacific Islanders; individuals with a physical or mental impairment that substantially limits one or more major life activities; and individuals from disadvantaged backgrounds. Gender is an important dimension within which there are disparities in the workforce and may be cited in combination with another dimension, but gender alone will not be a qualifying criterion for this Bonus Award.

“Early career” may include any investigator on a team who does not have a regular faculty appointment. Secondary school students, undergraduates, predoctoral students, health professional students, residents, fellows, and postdoctoral scholars are included. Persons who are University staff (e.g. research coordinators) might also be eligible if the proposal explains how the experience may lead them towards more independent or sustained research careers. Faculty members are not eligible for these bonuses, because they are already eligible to apply as the Principal Investigator. Contact CTSI staff if you are not sure about eligibility.

## **6. Eligibility**

The Principal Investigator must be a University of Pittsburgh faculty member; postdoctoral trainees and trainees in clinical training programs are not eligible to serve as PI. Faculty member on early-career training awards or clinical research scholars (i.e. recipients of K-series or similar career development grants) are eligible. New PIs are strongly encouraged, but submissions from established investigators will be accepted if there is clear evidence that the pilot project represents a distinctly new direction from their previously funded work.

Study teams that involve cross-disciplinary collaborations are strongly encouraged. Co-investigators may be from other universities; however, CTSI’s primary mission is to promote research at the University of Pittsburgh, so applicants should justify extensive off-campus collaboration. Partnerships with non-academic community partners are also acceptable.

## **7. Submission and Review Information**

### **How to Submit**

All applications should be in the form of a single PDF document; please use Arial size 11 font with margins of 0.5 inches. Additional or supplemental materials cannot be accepted after the specified deadlines and will not be reviewed.

### **Round 1: Letter of Intent**

Please submit a letter of intent that summarizes the proposed research. Each submission must include the following sections:

- A. Study Title: Include the title of the proposal at the top of the page, along with the PI name and contact email.
- B. Abstract and Scope of Work (500 word limit): Please provide a high-level overview of the study and the proposed work. Be sure to indicate how the study will include one or more of the following areas of health disparities in AI: identify contributors to disparities, develop mitigation strategies, enhance accessibility, and inform policy and practice.
- C. Study Team: Please provide the names and affiliations of all members of the study team and a brief description of their roles (25-50 words per person).
- D. Suggested Reviewers: To facilitate the final round of review, please suggest two to three faculty members, not from your department, who may be qualified to serve as scientific reviewers. Include email addresses for each suggested reviewer.

Applications should be in the form of a single PDF document; please use Arial size 11 font with margins of 0.5 inches. All materials must be submitted before 11:59 p.m. on **Wednesday, December 11, 2024**. Additional or supplemental materials cannot be accepted after the deadline and will not be reviewed.

#### **Round 1: Review Criteria**

The review of letters of intent will be conducted by the faculty and staff of CTSI. Proposals will primarily be evaluated based on the Responsiveness to the RFA, Overall Impact to the identified populations, as well as the Overall Scientific Merit of the proposed work. The results of this evaluation will determine which investigators will be invited to submit a full proposal for the second round. Bonus Award eligibility will be assessed separately from the scientific merit of the award and will not impact whether an investigator is asked to submit to the second round.

#### **Round 2: Full Packet Submission**

Applications should be in the form of a single PDF document; please use Arial size 11 font, with margins of 0.5 inches. All materials must be submitted before 11:59 p.m. on Friday, January 24, 2025. Additional or supplemental materials cannot be accepted after the deadline and will not be reviewed. Include the following sections, beginning each section on a new page:

**A. Project Overview** (one page): The first page should include the following:

1. Scientific Abstract (250-word limit): Briefly summarize the proposed work.
2. Include one or more of the following areas of health disparities in AI: identify contributors to disparities, develop mitigation strategies, enhance accessibility, and inform policy and practice.
3. Intent to apply for the bonus award

**B. Research Plan** (three-page limit, including tables and figures): This section should include the following elements from a traditional NIH proposal to best allow reviewers to address the review criteria:

1. Specific Aims
2. Significance
3. Innovation
4. Approach

**C. References** (no page limit): Literature cited does not count toward the Research Plan's three-page limit.

**D. Budget with Budget Justification** (no page limit): Use PHS 398 Form [Page 4](#) and [Page 5](#). The budget justification should include sufficient detail for reviewers to assess whether appropriate resources have been requested. In addition, please include a justification for the bonus award.

Grant funds may **NOT** be budgeted for:

- Salary support for the PI or faculty collaborators\*
- Effort for post-doctoral trainees or fellows
- Routine office supplies or communication costs, including printing
- Meals or travel, including to conferences, except as required to collect data
- Professional education or training
- Computers or audiovisual equipment (exceptions require clear justification)
- Manuscript preparation and submission
- Indirect costs

*\*Effort is required of the principal investigator and must be reflected on the budget page. This effort should be cost shared by the department or other entity that will support such effort. Reviewers understand that this may be a very small proportion of effort given the size of this award but will be cautious if investigators do not appear to have sufficient time to complete a project. Any salary support requested in a submitted budget should reflect federal fringe benefit rates. If an award is made, a budget meeting will be held between principal investigators, their respective research administrators, and financial administrators from the CTSI. If necessary, adjustments to the requested budget will be made at that meeting.*

**E. Proposal Timeline** (up to half a page): Describe milestones and timeline for completion of the project. These milestones are critical for the pilot program, because all awards must be expended during the one-year award. ***The CTSI Pilot program does not have mechanisms to allow no-cost extensions. In the event an award is made, investigators should immediately confer with CTSI staff if any delay in initiation or completion of the project is anticipated.***

**F. Human and/or Animal Subjects** (no page limit): NIH supported pilot awards must address Protection of Human Subjects, Adequacy of Protection Against Risks, Data and Safety Monitoring Plans, Inclusion of Women and Minorities, and Inclusion of Children.

Human Research Protection Office (HRPO) approval is not required prior to submission. However, HRPO approval is required for all projects involving human subjects before NCATS will approve project funding. Likewise, the Institutional Animal Care and Use Committee (IACUC) must approve any projects involving animal subjects prior to final funding approval.

Applicants must describe any human and/or animal subject issues, as well as the sources of materials that will be obtained from human subjects. If human subjects are involved, provide a description of their involvement and characteristics, specific risks to subjects who participate, and protection against those risks. Reviewers may consider whether significant delays in approval are an anticipated barrier for project completion when selecting projects. Evidence of prior or ongoing HRPO / IACUC review is encouraged. Similarly, this section should discuss if other special regulatory approval is required prior to funding: Human Stem Cell Research Oversight (hSCRO), Institutional Biosafety Committee (IBC), Committee for Oversight of Research Involving the Dead (CORID), Radiation Safety Office (RSO), etc.

**G. NIH Biosketches** (no page limit): Include biosketches for the Principal Investigator and key members of the research team. Use new as of September 2017.

## **Round 2: Review Criteria**

Review of CTSI Pilot proposals follow the standard NIH Review Criteria, outlined below. Reviewers will score Full Packet applications on an NIH scale (1-9). Special emphasis will be given to Overall Impact.

1. Overall Impact: The likelihood for the project to exert a sustained, powerful influence on the research field
2. Significance: Does the project address an important problem or a critical barrier to progress in the field?
3. Investigators: Are the PD/PIs, collaborators, and other researchers well suited, sufficient, and able to conduct the project?
4. Innovation: Does the project shift current research or clinical practice paradigms use novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?
5. Approach: Are the strategies, methods, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?
6. Environment: Are the personnel, equipment, and other physical resources available to the investigators to perform the proposed research within the time frame allotted?

### **Program-Specific Criteria:**

7. Path to Impact: Does the submission propose a clear path to implementation or widespread use; or, if in early stages, have a plan for follow-on funding to develop idea further?

