

High Priority Area Research Seed Grant

DOR/Provost Faculty Research Invigoration Programs

Proposal Submission Deadline

Monday, February 27, 2023, before 5:00 p.m.

- Combine all files of the completed proposal into a single PDF, name the file LAST_FIRST_2023 where the LAST is your last name and the FIRST is your first name, and attach it to the cover page using the application link on the Division of Research (DOR) webpage:
<https://uh.edu/research/funding-opportunities/internal-awards/research-seed-grants/>

LATE PROPOSALS WILL NOT BE CONSIDERED

Overview

The vice president for research and provost are continuing a program to invigorate the University's research enterprise through targeted investment of seed research funds in high priority areas (see the examples in Figure 1). The purpose of this program is to provide research labs and groups with funds that would permit submission of competitive research proposals.

The seed funding grant program is closely tied to the five institutional thrusts that the vice president for research and provost have developed in consultation with college deans, and which the chancellor endorsed, are described here and in Figure 1. below to provide the general area of emphasis and some examples.

- (1) Cyber and Physical Security
- (2) Drug Discovery and Development
- (3) Sustainable Communities and Infrastructure
- (4) Accessible Health Care
- (5) Energy Security and Transition

Formation of interdisciplinary research teams is encouraged to build capabilities to address these complex issues.

Figure 1. Five Institutional Thrusts and Technology Enablers that Support this Research

	 Cyber and Physical Security	 Drug Discovery and Development	 Sustainable Communities and Infrastructure	 Accessible Health Care	 Energy Security and Transition
DATA	 Communications data, screening, mining, image matching, filtering, intrusion detection, non-physical sensing, UVA/UVB/Lidar detection, institutional and regulatory environments	Biodata processing, massive virtual physiological modeling/simulation, genomic sequencing, molecular and evolutionary modeling, target identification, validation and pharmacodynamics, animal model generation/testing, pre-clinical testing, genomic analysis, protein structure and proteomics, pharmacokinetics	Utility, transportation data modeling, real-time data mining and decisions, energy monitoring and adaptation data, institutional and regulatory environments	Personalized health and population data interpretation and correlation, analysis and action on health disparities, institutional and regulatory environments	Optimize performance, productivity and efficiency; Grid reliability and stability; Multi-scale modeling: from quantum to macroscale; Real-time artificial intelligence and machine learning with virtual and augmented reality to advance decision-making
IMAGING	 Surveillance technology, biometric analysis, behavioral analytics, institutional and regulatory environments	Real-time drug screening, dual photon-confocal imaging, protein analysis, proteomics, treatment efficacy, advanced light microscopy, multi-photon, super-resolution imaging, automated drug screening in vitro, in vivo imaging in animal models, flow cytometry, force microscopy, structural analysis	Atmospheric, oceanographic, and surface imaging, coastal mapping, severe weather analysis, corrosion bacterial biomarking, institutional and regulatory environments	High throughput imaging, infectious disease control, management of epidemic diseases, institutional and regulatory environments	Subsurface imaging; advanced material characterization including force, electron and x-ray microscopy
AUTOMATION	 UVA/UVB, Lidar applications, automated border control devices	Automated screening and sampling (sample handling) and automated sequencing; miniaturized sample handling and transport	Energy integration, self-regulating utility networks, construction management and maintenance robotics, automated E-W-F nexus, energy efficiency	Automated diagnostics, remote diagnostics and intervention, autonomous medical devices, remote immunization	Automation and robotics for hazardous environments; integration of VR and AR
MATERIALS	 Stable data storage, energy storage, flexible electronics, shape recognition, super-conductive	Nano- and bio-materials, stem cells, polymers, viral vectors, enhance bioavailability and targeting, organic synthesis, polymers, synthesis of bioactive agents, genetic engineering of cells, non-drug therapeutics	Energy harvesting and storage materials, biodegradable materials in construction, retrofitting materials, sustainable composites, functional polymers	Fabric-based devices, wearable diagnostic devices, transdermal drug delivery materials, non-pharmacological therapies	Smart materials; Energy storage materials; Electrochemical systems; Catalysis; Sustainable materials; Bio-derived and compostable; Alternate fuels; Low carbon materials
ADVANCED MANUFACTURING	 Securing the supply chain	Reduce time to manufacturing of vaccines	Zero environmental impact manufacturing	3D manufacturing of medical devices in remote locations	Carbon capture, carbon utilization; Modularization; Process intensification; Clean energy technologies; Supply chain security

Funding Level

An allocation of \$420,000 is available in the current fiscal year. The DOR anticipates making six to eight 18-month awards at a maximum of \$70,000.

Eligibility and Restrictions

Full-time tenured, tenure-track, or promotion eligible non-tenure track faculty are eligible to apply. Other investigators employed by UH may be listed as Co-Principal Investigators (Co-PIs).

Individual faculty members or groups of faculty are encouraged to apply. ***A faculty member may serve as PI on only one application and as Co-PI on one application. Applicants who received a research seed grant in the most recent competition may not apply. A faculty member currently holding an award may not apply, including awards that were extended.***

Formatting Requirements

All documents must be prepared on the US Letter size paper (8.5"x11") with 1-inch margins on all sides, Arial font size 11 pt. or greater. The proposal narrative must have exactly 1.5 line spacing; all other documents may be single-spaced. An Arial font size of no less than 8 pt. should be used for the captions to graphics and tables and may be single-spaced. The text in the captions must be legible. Applications that fail to follow the formatting requirements will not be reviewed.

Proposal Preparation and Submission

The application **MUST** be prepared using the guidelines below and submitted by the PI or the PI's affiliated pre-award research administrator. Combine all files of the completed proposal into a single PDF, name the file LAST_FIRST_2023 where the LAST is your last name and the FIRST is

your first name, and attach it to the cover page using the application link on the DOR webpage: [High Priority Area Research Seed Grants - University of Houston \(uh.edu\)](https://dor.uh.edu/HighPriorityAreaResearchSeedGrants)

No prior approval from chairs and deans is required unless the application requires a commitment of space or other resources, in which case a letter of commitment should be included. Emails to you, your department chair (or equivalent), and your associate dean for research will be sent after you submit the proposal in lieu of the previously required signatures.

Organize the proposal using the following sections with these headings:

Abstract/Summary

A 200-word single-spaced abstract must be submitted with the proposal.

Proposal Narrative (Up to 6 pages, includes graphics, tables, equations, and formulas)

The proposal narrative must not exceed six pages with exactly 1.5 line spacing and the font size of Arial should be no smaller than 11 pt. with 1-inch margins. The following sections must be included:

- a. Objectives and Specific Aims
- b. Significance and Impact
- c. Preliminary Results and Applicant Expertise
- d. Approach (How you will go about producing the project; if this is a research proposal this section would involve the methods)
- e. Expected Outcomes and Products, with a focus on the likelihood to result in a grant
- f. Feasibility: Provide a timeline of all activities

References Cited are in addition to the 6-page Proposal Narrative and must be single-spaced. Only proposals that meet the formatting requirements will be reviewed.

Biosketch(es) (2 pages per investigator)

Provide a two-page biosketch for each PI and Co-PI. NSF/NEH style is preferred, but not required. The narrative format of an NIH Biosketch is not acceptable.

Your résumé should provide the following:

- Current and Past Positions.
- Education: List degrees and dates awarded.
- Awards and Honors: Include dates.
- Other Relevant Professional Activities and Accomplishments.
- Publications: Include full citations for selected publications and presentations.

Current and Pending Support, including overlap with current funding, pending proposals, and start-up funding.

- Provide a list of current and pending support for each PI and Co-PI. Include a clear description of overlap of the proposed research with research on current awards or pending proposals.
- If the proposal is related to a project supported by start-up funding, indicate the overlap.

- Proposals seeking to conduct research to improve a prior submitted external proposal that has received high but not-funded ranking must provide the external proposal reviews and describe the specific steps that will be taken to address the deficiencies stated in the reviews.

Budget

The budget **MUST** be constructed and presented using the standard UH budget template <http://www.uh.edu/research/resources/dor-forms/proposal-processing-forms/>. Please work with your affiliated pre-award personnel to generate the budget. This person must sign the budget template indicating that they prepared and approved the budget. **The project period is 18 months but prepare a single-year budget.**

- Support for faculty salaries is limited to \$6,000 per grant (salary + fringe benefits \leq \$6,000) for all faculty members. Salary requests must be accompanied by a convincing justification. In lieu of faculty salary, a course buyout for a single investigator may be requested (see below)
- Budgets will be critically reviewed. All budget items must have written justifications, and the budget must include fringe benefits for salary requests. If you have start-up funding, you must provide additional justifications for the request.
- Support for instructional development activities will not be considered for this program.
- Unless specifically part of the research program (for example, fieldwork) support for travel is not allowed.
- Requests for the following will NOT be funded:
 - a. Purchase of computer hardware (e.g., monitors, keyboards, printers, various peripherals, except for peripherals with specific application for the project, such as scanners)
 - b. Generic computer software for which the University has a license, except for packages directly related to the project such as mathematical analysis toolboxes.
 - c. Travel to meetings and conferences or travel to training workshops.
 - d. Supplementation of other internal or external support.
 - e. Publication costs unless they are related to a book subvention. Journal publication costs are not allowed.
 - f. Graduate student tuition and fees (these costs should be covered by GTF).

In lieu of faculty salary, one course buyout for a single faculty member during the course of the project may be requested as part of the budget. This buyout is permitted only for faculty who have at least a 2+2 teaching load. The buyout must be approved by the department chair prior to submission and the department chair must write a letter indicating approval of the course buyout and the budgeted amount. Faculty with any type of approved course release may not request an additional buyout (e.g., distinguished professorship, startup package, administrative release). The budget must reflect the cost of hiring a replacement adjunct professor and not the cost charged to a grant for a course release. In many departments, a course release is charged at \$10,000 to a federal grant, while the cost of hiring an adjunct is \$3,000; the latter cost should be budgeted and justified. Total faculty salary including the cost of the buyout may not exceed \$6,000.

Budget Justification and Fiscal Accountability

The budget justification must address each item for which funding is requested and explain why it is needed. Each budget must justify all aspects of the requested budget, including faculty salaries. Faculty salaries must be specified as academic or summer months.

Commitments

This program allows cost sharing or matching from non-DOR sources. Any financial or tangible commitments must be formally documented. Written commitments signed by the sponsoring unit authorities (i.e., dean, center director, and/or department chair) must be submitted when cost sharing or matching is proposed. Startup funds are not eligible for cost sharing because it bypasses the need for a discussion with the department chair/dean.

Space

Space availability and requirements must be identified.

- a. Location of the unit.
- b. What facilities, renovations, and technology needs are anticipated?

It is the investigators' responsibility to prepare the facility for installation and housing of the product. No funds from this program will be used for renovations.

Review Process

These proposals will be competitively reviewed and acted upon by subcommittees of the Research and Scholarship Committee (RSC) of the Faculty Senate. Winning proposals will be determined based on program criteria, merit, and available funds. Preference will be given to bold new ideas showing clear evidence of high likelihood of leading to additional grant support. Investigators with current funding must clearly state any overlaps between this and their current project portfolio.

Merit Criteria

All applications will initially be checked against the eligibility criteria outlined above. If eligibility is not fulfilled, applications will be returned without additional review alongside an appropriate explanation by DOR staff. After the initial screening, applications will be submitted to the RSC. Each accepted proposal will be competitively reviewed and acted upon by a subcommittee of the RSC that may include non-RSC members from the campus. The RSC will make recommendations to the VC/VP for research, who will be responsible for awarding and administering the grant. The DOR reserves the right to review and change budgets and ask for clarifications from potential awardees. Reviewers will be internal to UH and may not be disciplinary experts. For instance, a colleague from the College of Arts or the College of Education might review an application from the College of Pharmacy. It is important to ensure that reviewers who are not technical experts in the field of inquiry can understand the proposal narrative. Avoid jargon, unexplained abbreviations, and narratives that are highly technical.

Each reviewer will score each of their assigned proposals in five domains on a 1 (highest) – 5 (lowest) scale and provide an overall score on the same scale. The overall score must be based on the likelihood that the proposal will result in a fundable application. Increments of 0.5 are allowed within the 1-5 range (1.0, 1.5, 2.0, 2.5, etc.):

1. Short-term impact and innovation of proposed research:
Evaluate the short-term impact and novelty of the proposed research.
2. Final product, including feasibility and timeline, which must include a plan for grant submission:
Evaluate the proposed final product. A strong application will have a detailed plan for producing this product, which must include a plan for grant submission at the end of the funding period. The application should identify the targeted agency, funding mechanism, and program for which the proposal, with a clear timeline for submission and revision.
3. Quality of the approach:
Evaluate the approach taken to producing the proposed product. If the proposal is a research grant, examine the description of the aims, participants, procedures, and analysis of the data. Other approaches to scholarship can be reviewed but must be related to a thrust area and lead to a grant or other form of external support.
4. Investigator expertise and record of accomplishment:
Evaluate the evidence that the investigators have the relevant expertise to produce product. A strong grant would have a publication record in the identified area or clearly show the capacity to move into a new area. A weak grant would have no demonstrable record of accomplishment. A history of prior funding can be considered but should not disadvantage junior investigators with clear evidence of expertise.
5. Long-term potential for substantive contributions to research area:
Evaluate the potential long-term impact of the proposal for a sustained and important contribution to the selected area of research and scholarship and external funding.

Congruency Review

Congruency review by the Research Integrity and Oversight (RIO) Office is required for all research submitted to this program. The review must be conducted within three months of the award announcement or the funds will be forfeited. Congruency review includes human subjects, animal usage, biological materials (rDNA, human samples, microorganisms, etc.), and radiation (radioactive materials, lasers, and x-rays).

All projects involving human subjects must be reviewed and approved by the Institutional Review Board (IRB) before the grant cost center will be established.

All projects involving the use of animals in research must be reviewed and approved by the Institutional Animal Care and Use Committee (IACUC) before the grant cost center will be established.

All projects involving biological materials must be reviewed and approved by the Biological Safety Manager and the Institutional Biosafety Committee (IBC) before the grant cost center will be established.

All projects involving radiation must be reviewed and approved by the Radiation Safety Officer (RSO) & Laser Safety Officer (LSO) and authorized by the Radiation Safety Committee (RSC) before the grant cost center will be established.

Intellectual Property

In accordance with university policy, faculty members and the University share in net income generated from intellectual property. For additional information, refer to the [Faculty Handbook](#) or contact the Office of Technology Transfer and Innovation (OTTI) at 713-743-9294.

Schedule

Program Announcement	November 30, 2022
Application Deadline	February 27, 2023
Initial Review Completed	April 21, 2023
Announcement of Awards	May 1, 2023 (approximant)
Effective Date of Award for 18 Months	May 14, 2023-November 1, 2024
Interim Report 1	November 12, 2023
Interim Report 2	May 13, 2024
Final Report and Product Submission	November 11, 2024

Extensions

Extensions of up to 6 months will be granted only for circumstances that would extend the tenure clock. There is additional flexibility for unanticipated events that affect the entire university, such as a pandemic and the suspension of travel and human participants' research. No requests for extension will be granted if initiated after the expiration date of the project.

Reporting and Acknowledgement

- An external grant proposal must be submitted in one of the high priority research areas in Year 1 of the project period. If the applicant intends to apply for a competition that does not fit this timeline, an exception should be noted in the proposed timeline. An exception can be granted by petition provided this extension delays the grant submission for no more than 3 months.
- A resubmission is expected in the next submission cycle following the receipt of reviewer comments until funding is secured or a new application can be submitted while awaiting the outcome of the previous submission. In Year 2, the PI is expected to either submit a second proposal or resubmit the proposal from Year 1.
- A final report that captures the research output and funding garnered using this equipment will be due at the end of the Year 2.
- Should any reporting and submission requirements fail to be met, the DOR reserves the right to terminate funding and the college dean and department chair will be notified.

Use the Progress Report Form on the DOR Internal Awards webpage to submit progress reports that are due on the established dates regardless of progress through the congruency review. Interim reports are required at 6-month intervals. These reports should be narrative summaries of progress

not to exceed one page. The final report should identify the final product and provide documentation of its completion. The final product should be submitted with a 3-page narrative.

Notice must be given of publications, presentations, exhibitions, or performances resulting from the award. The grantee must acknowledge DOR support in all products and publications resulting from the award and provide one copy of the publication to the DOR.

Assistance

All questions related to this program should be submitted to Dr. Ezemenari Obasi, Associate Vice President for Research Administration, emobasi@uh.edu

Please do not call or email regarding the review results because the dates depend on the RSC review capacity and are approximate.