

UNIVERSITY of **HOUSTON** | RESEARCH

LABORATORY RENOVATION/NEW LAB GRANT

Proposal Submission Deadline

Monday, November 7, 2022, 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/lab-renovations/>

LATE PROPOSALS WILL NOT BE CONSIDERED

Overview

The vice president for research and provost have initiated a program to invigorate the University research enterprise through targeted investment in the renovation of existing labs or the creation of new small labs. The purpose of the program is to support the core research infrastructure of the University's research enterprise through targeted investments in laboratories that would permit submission of competitive external research proposals.

Although a proposal can be submitted for any research area, applicants are expected to demonstrate relevance to one or more of the five institutional thrusts. It is not expected that the lab's entire focus be in a thrust area, but that relevance to one of the thrusts can be demonstrated.

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 the 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

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/UUV/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/UUV, 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 \$500,000 is available in the current fiscal year for one round of competition. The total allocation is intended to fund 1-2 laboratory renovations/startups (hereafter, LABORATORY) awards.

Eligibility and Restrictions

Successful LABORATORY proposals must demonstrate efficiency and ensure that investments are used to generate the highest possible return to the laboratory and the institution. It is incumbent on the applicants to make this case. The request may include critical equipment that can be either new or a replacement for old equipment, but the primary purpose of the LABORATORY program is not to purchase equipment. There are other internal award mechanisms for equipment. If equipment is requested, it must be well justified, and the overall plan must balance the need for renovation or start-up with the equipment request.

LABORATORY proposals are eligible for funding when they:

- Request to renovate an existing laboratory.
- Request to start a new laboratory in a critical area that will replace a laboratory that is no longer competitive or provide a critically needed new laboratory; and

- Are located on the University of Houston (UH) campus and run by faculty or staff employed by the University.

Full-time UH faculty members who are tenured or tenure-track may apply as the Principal Investigator (PI) or Co-PI to this program. Each proposal must have one PI. One overall Co-PI is permitted and a Co-PI from each additional laboratory included in the proposal is required. Investigators may not be overall PI or Co-PI on more than one application. Cross college proposals are strongly encouraged.

Criteria for Award

Each proposal must supply convincing evidence that the following criteria have been met or will be met:

- The proposed activities will lead to high-quality research of significant benefit to the University and society.
- The renovation/start-up must be completed in Year 1. The DOR recognizes that this may not be under the control of the PI, so petitions for extension will be considered.
- A grant must be submitted in the identified research area during Year 2 of the project period.
- The PI must demonstrate the potential to compete in the designated area by virtue of publication record and prior funding or the potential to be competitive by virtue of other completed research.
- The review committee will rank each proposal in five domains on a 1 (highest) to 5 (lowest) scale:
 1. Impact and innovation of proposed renovation/startup, including the timeline.
 2. The probability that the LABORATORY grant will lead to competitive external funding, including the timeline.
 3. Need for the LABORATORY grant and plan for maintenance.
 4. Investigator expertise, track record or potential.
 5. Long-term prospects for substantive contributions to the selected research area.

Depending on the number of reviewers, grants may be ranked from highest to lowest based on average scores or a Concordance method based on pairwise comparisons may be used. Regardless, the final ranking will be a consensus of the committee.

Formatting Requirements

All documents must be prepared on 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. may 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: <https://uh.edu/research/funding-opportunities/internal-awards/lab-renovations/>

Prior approval from all chairs and deans of departments and colleges for which a PI or Co-PI is identified in the proposal is required, and signed letters indicating approval must be attached to the proposal. Most applications require a commitment of space or other resources, which should be included in the letter. Emails to you, your department chair (or equivalent), and your associate dean for research will be sent after you submit the proposal.

Applicants **MUST** have their renovation plan approved for cost and feasibility by DOR Business Operations office. Contact Cris Milligan at cmilliga@central.uh.edu and incorporate the Business Operations estimate in the budget.

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, including graphics, tables, equations, and formulas)

The rationale for the proposed LABORATORY grant must be described and must contain:

- a. An overview of the strategic research area and how the investment will enhance the applicant's ability to submit competitive proposals in the selected area. The relevance to a thrust area(s) must be explicitly indicated.
- b. A brief history of the applicants' expertise in the selected research area.
- c. The availability on the UH campus of laboratories and/or research groups of similar function/use and capabilities. If such laboratories/research groups are already available for shared use, why is the new laboratory needed? The justification must explain why a group with overlapping expertise is not part of the proposal.
- d. The potential research outcomes (e.g., funding, publications, faculty hiring) of having this LABORATORY grant. Identify any obstacles.
- e. Brief plans for its management and maintenance, including what type of continued investment might be required to maintain the lab and its productivity. Maintenance costs for the lab or equipment may not be requested. Any request for equipment must be well-justified and balanced with the need for renovation or a new lab.
- f. Plan and timeline for the renovation or start-up. This plan should take into account any need for certifications and related issues necessary to operate the lab.
- g. Plan and timeline for the grant submissions in the selected area. Include specific grant mechanisms and an estimate of the budget of the grant that will be pursued.
- h. References Cited are in addition to the 6-page Proposal Narrative.

Biosketch(es) (2 pages per investigator)

Provide a two-page biosketch for each PI and Co-PI. NSF style is preferred because the narratives in the NIH style are inappropriate for this type of submission.

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 & Pending Support

- Provide a list of current & pending support for each PI and Co-PI including a clear description of overlap of the proposed renovation with currently funded research, as well as with proposed research on pending proposals.
- If the proposal is related to start-up funding, indicate the overlap.
- Proposals seeking 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.

If the budget involves construction and/or renovation, it must be shared with Cris Milligan in the DOR Business Operations office for prior approval and the estimate should be included in the budget.

- Allowable costs include construction, equipment needed for the lab that is not otherwise available, service agreements.
- Unallowable costs include personnel, travel, equipment, or computer hardware not directly connected to the proposed laboratory, maintenance, and other items not directly related to the renovation or start-up of the laboratory. Colleges and departments are responsible for cost overruns from the original budget.

Budgets will be critically reviewed. Vendor quotes are required for the submission and must be made available to the reviewing committee. When awarded, the purchase must follow the University policies and guidelines. **Failure to provide a justification in this format may delay or result in not funding the proposal.**

Budget Justification and Fiscal Accountability

The budget justification must address the following topics:

- a. Describe the impact of funding on the improvement of resources or services within the unit.
- b. Describe how funds will contribute to the success and sustainability of the unit.
- c. Describe how these funds will benefit internal users within the unit.
- d. Will the lab be available to other research groups to maximize use of the facility?

- e. Is there a plan for covering long-term maintenance costs?
- f. If the PI leaves or the lab and equipment are under-utilized, is there a plan to reallocate the equipment to another laboratory or core facility?

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.

Space

Space availability and requirements must be identified.

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

User Groups (Up to 2 pages)

Provide a list of the users, including PI and Co-PI(s), and include their departmental and institutional (if not UH) affiliation.

- a. Who are the primary expected users of the facility, including PI and Co-PI(s), whose research program will benefit?
- b. What is the anticipated usage?
- c. How will users gain access to the lab?

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 producing high quality, high impact products in the short term and viability as a research program in the long-term. 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.

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	September 9, 2022
Application Deadline	November 7, 2022
Initial Review Completed	December 16, 2022
Announcement of Awards	January 16, 2023 (approximate)
Funding available/Project start date	February 15, 2023
Funding expiration	February 15, 2026

Progress reports due dates

Interim reports are required at 6-month intervals (i.e., the first report is due six months after the start date). The final report is due on the funding expiration date. Follow-up reporting on outcomes until Spring 2030.

Extensions

Extensions of up to 12 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

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. 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. Failure to comply with this reporting requirement will disqualify an individual for future consideration in all internal funding programs.

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.

The LABORATORY Program is intended to increase the technical capabilities of a laboratory or groups of laboratories leading to highly competitive proposals for extramural funding. As such, the PI is expected to complete the following activities and reporting during the 3-year project period.

The reports must be brief (no more than ½ page, single-spaced, and in Arial 11-pt font) and explain progress in applying for grants, renovating the lab, and procuring and setting up any equipment requested.

1. The period for renovation or buildout should not exceed one year. The DOR recognizes that this may not be under the control of the PI, so petitions for extension will be considered.
2. An external grant proposal must be submitted in Year 2 of the project period. If the applicant intends to apply for a competition that does not fit this timeline, an exception must 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. If the request is in a high-priority area, the grant must be in that area.
3. 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 3, the PI is expected to either submit a second proposal or resubmit the proposal from Year 2.
4. A final report that captures the research output and funding garnered using this program will be due at the end of Year 3 and the DOR will require additional reporting on outcomes during the four years following the end of the award.
5. Should any reporting or grant submission requirements fail to be met, the DOR reserves the right to terminate funding and the appropriate college dean and department chair will be notified.

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.