Harvard Medical School Foundry: 2024 Award Program

I.   Key Dates

RFP announcement: November 7, 2023
Required pre-proposal submission: January 19, 2024 (5 pm ET)
Deadline for submission of proposals: February 16, 2024 (5 pm ET)
Announcement of new awards: May 2024
Anticipated funding start date: July 1, 2024

II.   Overview and Goals

The Harvard Medical School Foundry supports technology development and research infrastructure by providing central coordination, funding, and administrative resources for technology development projects, research core facilities, and technology platforms. An important goal of the Foundry is to support programs that will positively impact HMS Quad-based research and that have strategic importance to HMS programs.

Requests for applications for Foundry funding are anticipated to be issued annually. Four categories of proposals will be considered in each award cycle:

-To renew or expand existing HMS or HMS-supported core facilities
-To establish new core facilities/technology platforms
-To develop new technologies (which could potentially be placed in a core facility in the future)
-To fund short-term planning projects during which work will be done to develop detailed proposals that would be submitted to the Foundry in future application cycles.

III. Program Details and Eligibility Criteria

To be eligible for Foundry funding, applicants must be: (i) faculty members who hold a primary appointment at Harvard Medical School as Assistant Professor, Associate Professor, or Professor in an HMS Quad department (Quad A[1] and Quad B[2]); or (ii) Directors of HMS Quad-funded core facilities or shared resources. Interested applicants not falling into either of these categories should contact the Foundry program to discuss their ideas and, if appropriate, request approval to apply. There is no departmental limit on the number of proposals that can be submitted.

A one-page pre-proposal (due January 19, 2024) is required for all applications. These documents will help us plan the application review process and identify overlapping projects early. They will also help to identify potential collaborations with existing HMS core facilities. Full-length Foundry proposals will be due on February 16, 2024.

Proposals can request funding to cover equipment purchases and/or operating costs for core facilities and new technology development projects. Funds will be awarded for the purchase of shared instruments, salary support, service contracts, and other costs associated with the development of new technology or the operation of a research core facility. Support for operating expenses can be requested for a maximum three-year period. Some proposals for new shared resources or services might be

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[1] Faculty whose primary appointment rank is Assistant Professor, Associate Professor, or Professor and whose primary appointing department is a Basic or Social Science Department and whose primary job location is on Quad.
[2] Faculty whose primary appointment rank is Assistant Professor, Associate Professor, or Professor and whose primary appointing department is a Basic or Social Science Department and whose primary job location is off Quad.

smaller in scale, *e.g.*, to test the feasibility of a new idea over a shorter period of time rather than to develop a full core/technology platform at the outset.

Applicants proposing new shared resources or services are encouraged to work with existing HMS research core facilities and Core Directors when possible. Information about current HMS research cores can be found on the HMS Cores website (https://corefacilities.hms.harvard.edu). In many cases, it might be more efficient to add proposed new instruments or services to existing HMS research core facilities, under the management of experienced Core Directors, than to establish a new core facility to provide access to the new technology or method. Requests to start new cores will be reviewed separately from requests related to existing cores, and funding support will be allocated according to the assessed need and likely impact of each of the proposed activities.

To this end, all applications will require a description of likely users of proposed instruments and services. The review committee will use this information to understand the community that will be served by each proposed resource, but numbers of potential users will be only one of several factors used to prioritize proposals for funding. The strategic importance of the activity to HMS Quad research and the feasibility of the proposed program will also be evaluated.

Some ideas might require additional study or development before a multi-year request is made to the Foundry. Requests can be made to fund short-term (*e.g.,* one year) planning projects to develop detailed proposals that can be submitted to the Foundry in future application cycles. Planning project requests can include partial salary support for faculty, staff, or trainees, relevant travel expenses, and/or funding to organize a small workshop.

Applications that leverage additional support from major stakeholders are encouraged and are generally prioritized. Sources of additional support could be funding from grants, from HMS departments, or from HMS-affiliated institutions. For new or existing cores requesting operating costs, cost recovery via user fees is also considered a type of support, as are space allocations from departments or affiliated institutions.

This opportunity may be used as a mechanism to gain institutional support for a 2024 NIH S10 Shared Instrumentation Grant submission. The intention to submit a 2024 S10 proposal should be indicated in the pre-proposal so that the program can plan to prepare an appropriate letter of support with a commitment of funds in time for completion and submission of the S10 proposal by the NIH deadline. Institutional support funds approved by the Foundry Committee would be made available for such S10 proposals that are selected for funding by the NIH.

Program details specific to technology development projects
For technology development projects, it is understood that the new technology will likely not be available broadly to the HMS community during the course of the award period. However, the Foundry Committee prioritizes projects that are expected eventually to benefit HMS research beyond the lab of the project PI and close collaborators. Thus, technology development proposals require a description of a possible path for future HMS community access to the proposed technology. For example, a plan might be proposed to begin work with a local core facility to implement the technology, to establish a new core facility when the technology is ready, or to work with the Harvard Office of Technology Development to commercialize the technology.

The Foundry Committee considers a combination of both the potential risk, potential impact, and the project cost in evaluating technology development proposals. Technology development applicants are encouraged to provide preliminary data that address risk. For very early-phase projects where no preliminary data are available, applicants are strongly encouraged to request funding for a first phase of the project only, to gather preliminary data, with a proposed total budget of $300,000 or smaller. If a Foundry-supported early-phase technology development project is successful, an application can be submitted to a subsequent Foundry Award cycle for additional funding. In 2024, the Foundry program hopes to fund at least one early-phase technology development project in each award cycle.

IV. Application Information
Pre-Proposal
Instructions for the required pre-proposal are provided in **Appendix A**. Each pre-proposal should be submitted to the HMS Internal Awards System using the following form https://harvardmed.tfaforms.net/f/2024Foundypreproposal by 5 pm on January 19, 2024. The pre-proposal document should be a single PDF file named according to the following convention: "Foundry_Pre-Proposal_[brief title for your proposal]". For example, "Foundry_Pre-Proposal_Zeiss_confocal," "Foundry_Pre-Proposal_Cryo-EM," or "Foundry Pre-Proposal_Microscope_planning_project."

Proposal
Instructions for Foundry Proposals are provided in **Appendix B.** Note that Foundry funding can be requested for a maximum of three years of operational support. The budget template (see **Appendix C**) requires a five-year operating budget so that long-term plans for support and sustainability of the program (*e.g.,* support for service contracts, supplies, and personnel) beyond the term of Foundry funding are described in detail.

Applications submitted by existing HMS-supported research cores are required to provide additional supporting documentation. For the 2024 Foundry award cycle, this includes only a letter of support for the request from the core's steering or advisory committee (to be submitted with the application).

Foundry proposals should be submitted to the HMS Internal Awards System using the following form https://forms.hms.harvard.edu/f/2024FoundryProposal by 5pm on February 16, 2024. The proposal document should be a single PDF file named according to the following convention: "Foundry_Proposal_[brief title for your proposal]". For example, "Foundry_Proposal_Zeiss_confocal," "Foundry_Proposal_Cryo-EM," or "Foundry Proposal_Microscope_planning_project."

V. Review Process and Criteria
Proposals will be reviewed by a committee comprised of HMS Faculty and HMS Core Directors. Proposals for renewal or expansion of existing research cores will be reviewed separately from proposals for new research cores and technology development projects. The foremost evaluation criterion during the review process will be how proposed projects will impact and benefit HMS Quad-based research. Specific, additional review criteria for the various categories of proposals include:

Review criteria for proposals for renewal or expansion of existing HMS and HMS-supported research cores
       -Strategic importance of the proposal to HMS Quad research

-Size of the community of users/potential users
-Leverage of support from non-Foundry resources
-Continuing need onsite at HMS vs. as an outsourced resource
-Community feedback, gathered by the Foundry, about operation of the core

Review criteria for proposals for new research cores/technology platforms and technology development projects
-Strategic importance to HMS Quad research
-Innovation of the technology/resource
-Size of the community of potential users
-Leverage of funds from non-Foundry resources
-Need for onsite location at HMS vs. as an outsourced resource

*Proposals for technology development projects will be reviewed according to all of the criteria listed above for new research cores **plus***: inclusion of a reasonable and well-described potential path for future HMS community access to the proposed technology.

Contact Us
For more information about HMS Core Facilities, please visit: https://corefacilities.hms.harvard.edu/
Please direct questions about this RFP to Caroline Shamu (caroline_shamu@hms.harvard.edu) and to John Goettelmann (john_goettelmann@hms.harvard.edu).

Appendix A: Instructions for Pre-Proposal Document

Part I: Summary Information [approximately 1/4 page]

Project Title

Lead Applicant [Last Name, First Name, Email, HMS Department, Institution]

Co-Applicant(s) [Last Name, First Name, Email, HMS Department, Institution]

Estimated Total Budget Request from the Foundry [Enter total dollar amount only]

Proposed Budget Period for the Request (*e.g.,* one-time instrument purchase, one-year budget, three-year budget, etc.)

Foundry Proposal Category [Renewal/expansion of existing HMS shared resource, New shared resource, Technology development project, or Planning project]

Part II: Proposal Overview [approximately 3/4 page]

Description of equipment or program

Justification of need

Address the potential impact and the strategic importance of the proposed piece of equipment, new service, or technology development project to HMS Quad research.

Provide an estimate and description of the likely users for the first 5 years.

Include a sentence or two indicating whether similar instruments or resources exist in local research institutions, including other Harvard Schools.

If similar instruments or resources exist locally in the Longwood Medical Area or Greater Boston, please state briefly why they cannot support the needs of HMS Quad Faculty, *e.g.,* due to:

Inappropriate capabilities
Insufficient capacity, or
Lack of access for HMS Quad investigators

Space

Describe the space where the equipment/facility will be located. If space has not been identified for the proposed instrument or service, please state this explicitly.

Describe briefly any special infrastructure needs.

Brief budget summary/justification

>　Please list the estimated total cost of the proposed equipment, facility, or planning project, including the amount requested from the Foundry and any other partial support.
>
>　If partial support for the request has already been secured from another source (*e.g.,* grant, HMS department, or affiliated institution), please list the source and amount of the additional funding. If additional funding is being sought but has not yet been secured, please state this explicitly; an update can be provided in the full-length proposal.
>
>　Maximum request: 3 years of funding. For planning projects, one-year budgets are anticipated, but the projects may be proposed to run for longer, if justified.

References

>　Please list any references cited on a separate page, and keep the length of the reference list to a maximum of one page.

<u>Submission information</u>

Each pre-proposal should be submitted to the HMS Internal Awards System using the following form https://harvardmed.tfaforms.net/f/2024Foundypreproposal by 5pm on January 19, 2024. The pre-proposal document should be a single PDF file named according to the following convention: "Foundry_Pre-Proposal_[brief title for your proposal]". For example, "Foundry_Pre-Proposal_Zeiss_confocal," "Foundry_Pre-Proposal_Cryo-EM," or "Foundry Pre-Proposal_Microscope_planning_project."

Appendix B: Instructions for Foundry Proposals

Part I: Summary Information

Proposal Title

Lead Applicant [Last Name, First Name, Email, HMS Department, Institution]

Co-Applicant(s) [Last Name, First Name, Email, HMS Department, Institution]

Foundry Proposal Category [Renewal/expansion of existing HMS shared resource**,** New shared resource**,** Technology development project, or Planning project]

Total Budget Request from the Foundry [Enter total dollar amount only]

Proposed Budget Period for the Request (*e.g*., one-time instrument purchase, one-year budget, two-year budget, three-year budget)

Part II: Proposal
Proposals are limited to four pages, but can be as short as two or three pages.

Equipment and program description: A description of the equipment to be purchased or the program to be initiated, the scientific need being met, and the plan for management and use. Describe how training and access to the equipment/program will be managed, how use will be prioritized if scheduling conflicts arise, and whether access might be limited to only certain categories of users. Provide a list of current or planned steering or advisory committee members. *For technology development projects,* describe a potential path for future HMS community access to the proposed technology.

Justification of need: Address the potential impact and the strategic importance to HMS Quad research**.** Indicate whether similar instruments or resources exist in local research institutions, including other Harvard Schools. If similar instruments or resources exist locally[3], please describe why they cannot support the needs of HMS Quad Faculty, *e.g.,* due to inappropriate capabilities, insufficient capacity, or lack of access for HMS Quad investigators. Provide an estimate and description of the likely users for the next 5 years**.** If a few laboratories will use 50% or more of the capacity of the instrument or service proposed, please provide a list of the major users (PI names and HMS Department, or institutional affiliation if not HMS).

Space: Describe the space where the equipment/facility will be located and any special infrastructure needs. Please include a few sentences addressing whether renovations or modifications to existing lab spaces will be needed to accommodate proposed instrument(s) or staff. Even minor modifications to lab space should be mentioned (*e.g.,* moving an electrical receptacle, adding an ethernet jack, modifying shelves over lab benches, and adding plumbing for vacuum or CO_2).

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[3] Note, you can locate specific equipment available in Longwood Medical Area cores at https://cores.catalyst.harvard.edu or by contacting the instrument vendor.

Include a few sentences addressing other infrastructure needs for the proposed instrument(s), including IT requirements and any regulatory/safety issues. With regard to IT, if special file servers, databases or software programs will be required to support the use of the proposed instrument, please consult the HMS IT Department as you prepare your proposal, and include as part of your budget any costs that might arise relevant to purchasing new file servers, new software, or use of high-performance computing clusters.

Budget Summary and Justification: Please provide a brief summary of the total budget requested from the Foundry, including a description of relevant additional support from other sources such as grants, HMS departments, or HMS-affiliated institutions. If requesting funds for operating expenses for a new service, core facility, or development project, please describe plans for long-term support and sustainability of the program after initial Foundry funding ends. For all applications, please describe previous or concurrent requests to other funding sources for the same equipment or program.

Note that, as described in Section III of the RFP, for very early-phase technology development projects where no preliminary data are available, Foundry applicants are strongly encouraged to request funding for a first phase of the project only, to gather the preliminary data, with a proposed total budget of $300,000 or smaller.

The budget page is described in Appendix C and should be submitted as a supporting document that is not included in the page limit. However, a budget justification, in NIH-format, should be provided in the text of the proposal to describe the items listed in the budget template. Note that Foundry budget requests can be for a maximum of three years of operational support. The budget template requires a five-year budget proposal so that plans for long-term support and sustainability of the program (*e.g.,* support for service contracts, supplies, and personnel) beyond the term of initial Foundry funding are described in detail. If it is anticipated that School funding might be required in years four or five to sustain the core or platform, please indicate this in the "Subsidies and Anticipated Income" section of the budget template and budget justification.

Part III: Additional Documents (not included in page limit)

All of these additional documents should be saved in PDF format and combined with the Proposal document (described in Part II) into a single PDF file for submission via the HMS Internal Awards System online form.

References

Budget page [see Appendix C]

Equipment Quotes (if funding for research instrumentation is requested)

Additional document required for proposals to renew or expand existing HMS or HMS-supported core facilities:
          -**Letter of support** for the request from the core's steering or advisory committee

Submission information

The Proposal (described in Part II of this Appendix) and Additional Documents (described in Part III) should be saved in PDF format and combined into a single PDF file for submission. Foundry proposals should be submitted to the HMS Internal Awards System using the following form https://forms.hms.harvard.edu/f/2024FoundryProposal by 5pm on February 16, 2024. The proposal document should be a single PDF file named according to the following convention: "Foundry_Proposal_[brief title for your proposal]". For example, "Foundry_ Proposal_Zeiss_confocal," "Foundry_Proposal_Cryo-EM," or "Foundry_Proposal_Microscope_planning_project."

Appendix C: Budget Page Template

The budget page template is available as a separate Excel file on the RFP page of the HMS Foundry Awards website https://foundryawards.hms.harvard.edu/most-recent-rfp.

If you are concerned about dissemination of detailed salary information for existing employees, feel free to provide on your budget page only the Personnel information requested in the first three columns of the template (Name, Role on Project, % Effort) AND the Personnel budget subtotal information.

Note on Service Contracts: Payments for multi-year service contracts should be expensed on an annual basis, even if paid up-front, and the Budget Period should be defined appropriately. While, in general, Foundry funds should not be requested for Years 4 and 5 of a project, if a multi-year service contract will be paid up-front and expensed annual payments extend beyond Year 3, then service contract costs can be budgeted beyond Year 3.

Note for Technology Development Projects: As described in Section III of the RFP, for very early-phase technology development projects where no preliminary data are available, Foundry applicants are strongly encouraged to request funding for a first phase of the project only, to gather the preliminary data, with a proposed total budget of $300,000 or smaller.

The completed budget page should be saved as a PDF and added to the full proposal PDF file along with the other supporting documents before submission.

Please refer budget questions to Caroline Shamu.