NIH Venture Program *Advancing Non-Invasive Optical Imaging Approaches for Biological Systems (NIOI)* Initiative

Notice of Funding Opportunity: RFA-RM-24-012 Informational Webinar

January 16, 2024

NIOI Initiative Working Group

NIH National Institutes of Health
Office of Strategic Coordination–The Common Fund

Agenda

- Overview of the new Common Fund Venture Program

- Overview of the NIOI Initiative Notice of Funding Opportunity

- Questions & Answers

Overview of the Common Fund Venture Program

The Common Fund Moves the NIH Mission Forward – Faster

Supporting bold scientific programs that **catalyze discovery** across all biomedical and behavioral research

Advances areas of biomedical and behavioral research important to the missions of multiple NIH Institutes and Centers

Spurs subsequent biomedical advances that otherwise would not be possible without an initial strategic investment

NIH National Institutes of Health
Office of Strategic Coordination–The Common Fund

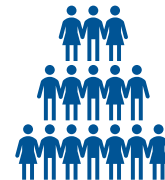# Features of Common Fund Programs and How They Catalyze Biomedical Discovery

Making substantial investments in time-limited, goal-driven programs that significantly change the trajectory of biomedical research.

Accelerate emerging science

Remove research roadblocks

Enhance the research workforce

Support high-risk, high-reward science

Common Fund Venture Program

"Amazing things with modest funding"

Venture Initiatives:
- Enables support of **bold, nimble, focused** activities
- Implement CF mission through **small, innovative initiatives** up to 3 years with $5M/year budgets
- Support projects having **clearly defined deliverables** and **go/no-go milestones**

Launched in FY24 with 2 Initiatives
- Oculomics
- Systems Biology Data Platform

Two Initiatives in Development for FY25/26
- Newborn Screening by Whole Genome Sequencing (FY25)
- **Non-Invasive Optical Imaging (FY26)**

National Institutes of Health
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Overview of the NIOI Initiative

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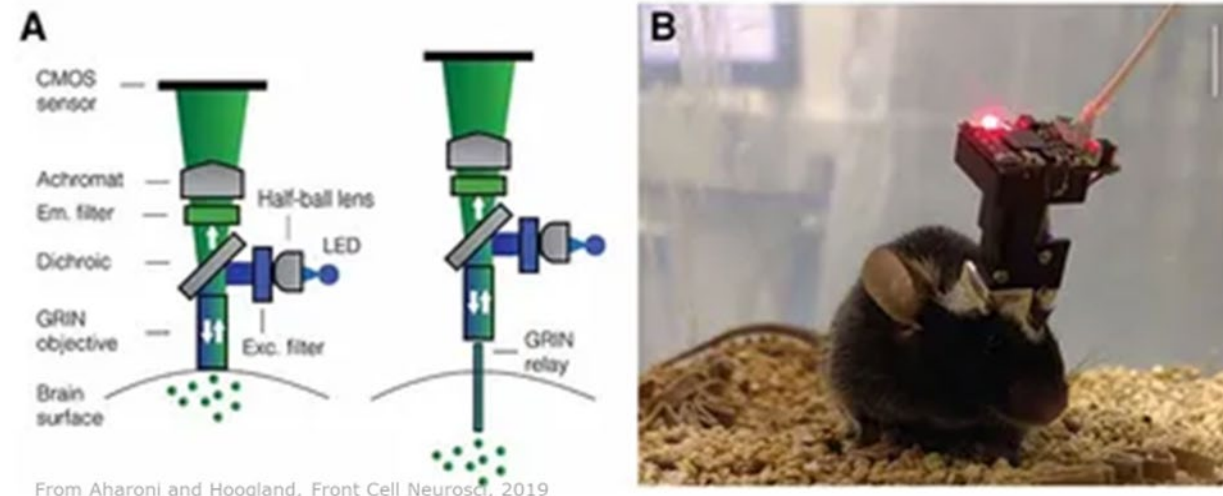
New Venture Initiative: NIOI

Background and Goals:

- Many transformative and fundamental insights in biology originate from observations made using optical techniques to study mechanisms and structures in organisms.

- The NIOI Initiative will support research that aims to overcome limitations of light and biological tissue interaction to enable the development of next-generation non-invasive imaging platforms.

Anticipated Work Products:

Phased approach (Years 1–2)

- **Hardware designs** that integrate novel forms of optical imaging data acquisition and processing
- **Prototypes** that overcome light-scattering barriers in complex biological systems
- *(Year 3)* **Optimizing** and performance testing

From Aharoni and Hoogland, Front Cell Neurosci, 2019

Current *in vivo* imaging is cumbersome and invasive.

RFA-RM-24-012

https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-24-012.html

Current optical imaging techniques that are non-invasive or minimally-invasive and allow rapid assessment of tissue function and/or structure **suffer from strong light scattering** within biological tissues, limiting the penetration depth and resolution.

Development of Next Generation Optical Imaging Tech

- Significantly Improve Imaging Depth

- The improvement must have clinical and biomedical relevance

- Non-Invasive or Minimally Invasive

- Without compromising spatial or temporal resolution

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https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-24-012.html

Mechanism: UG3/UH3, milestone-based

Year 1/UG3 Phase:

Conceptualization, design, and modification of Non-Invasive Optical Imaging technology and algorithms

Year 2/UG3 Phase:

Development, of Prototype technology and demonstration in relevant tissue models

Year 3/UH3 Phase:

Further refinement of the relevant optical imaging technology and relevant algorithm and testing the platform in appropriate in-vivo mammal or human model.

Plan for Enhancing Diverse Perspectives (PEDP)

The application must include a Plan for Enhancing Diverse Perspectives (PEDP). Diverse perspectives can refer to people who do the research and the places where the research is done, as well as to who participates in the research as a part of the study population. Must include:

- Actionable strategies using defined approaches for the inclusion of diverse perspectives in the project.

- Description of how the PEDP will advance the scientific and technical merit of the proposed project.

- Evaluation methods for assessing the progress and success of PEDP activities Anticipated timeline of proposed PEDP activities.

- **Please note — the PEDP is a part of the criteria that will be scored during the Objective Review**
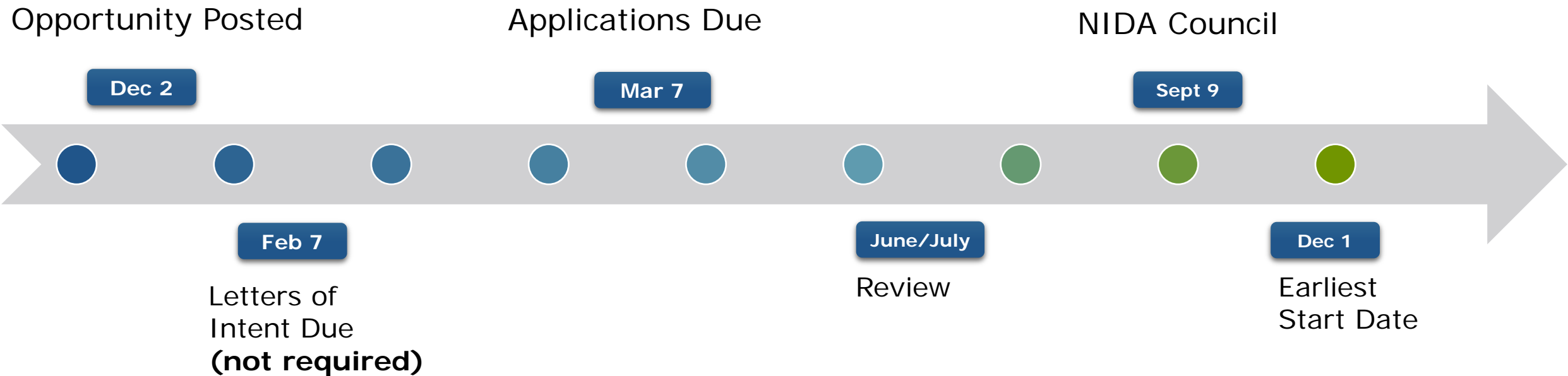
Data Sharing and Management

- All applications, regardless of the amount of direct costs requested for any one year, must address a Data Management and Sharing Plan.
    - https://sharing.nih.gov/data-management-and-sharing-policy

- Must develop and maintain good documentation and manuals/training materials.

- Scientific data should be made accessible as soon as possible, and no later than the time of an associated publication or the end of the performance period of the extramural award that generated the data.

PI Eligibility and Minimum Effort Requirements

- Any individual(s) with the skills, knowledge, and resources necessary to carry out the proposed research

- Applicant organizations may submit more than one application, provided that each application is scientifically distinct.

- Non-domestic (non-U.S.) Entities (Foreign Organizations) **are not** eligible to apply.

- Non-domestic (non-U.S.) components of U.S. Organizations **are** eligible to apply.

Timeline Overview

Opportunity Posted — Dec 2

Letters of Intent Due **(not required)** — Feb 7

Applications Due — Mar 7

Review — June/July

NIDA Council — Sept 9

Earliest Start Date — Dec 1

Letter of Intent (LOI)

- LOIs are encouraged but **not required** to be eligible to submit a full proposal

- Letters of intent can be submitted by email to NIOI@od.nih.gov

- Due Date: **Friday, February 7th, 2025**

Due date: 7 March 2025

- Applications will have multiple components as listed in the NOFO

- If applicable, page limits for components are stated in the NOFO

- Title the components the same way they are named in the NOFO

- **Due by 5 pm local time of applicant organization. Late applications will not be accepted.**

- Applications must be submitted electronically through ASSIST.

For additional information:

Visit the FAQs page:
https://commonfund.nih.gov/venture/nioi/faqs

Contact the Program Team: nioi@od.nih.gov

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Questions and Answers

Thanks for attending

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