Intro to NIH 101

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Agenda

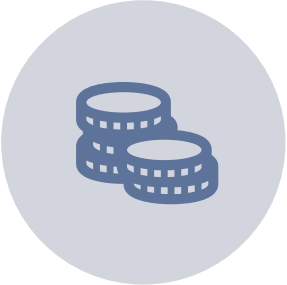
- **Presentation** ~ 40 min.
- **Panel Discussion** ~ 30 min.
- **Open Q&A** ~ 20 min.

Poll: Anonymous Question

What is the one question you have about NIH funding that you feel you should already know and/or don't want to ask?

Presentation Overview

NIH Overview & Funding Priorities



Funding Opportunities

Application Process and Scoring

Strategy & Next Steps

NIH Overview

The Grant Lifecycle

- Start **Planning** early
  - NIH Mission
  - Institutes/Centers (ICs)
  - Funding Priorities of ICs
  - NIH Staff
  - Funding Mechanisms

Image source: “Grant Writing for Success” https://grants.nih.gov/virtual-seminar-2021/presentations.html

NIH Mission, Broad Funding Priorities

- Human diseases
- Human growth and development
- Biological effects of environmental contaminants
- Mental, addictive & physical disorders
- Collection, dissemination, and exchange of information in medicine & health

27 Institutes/Centers + Director's Office

NCI – Cancer	NIAMS – Arthritis & Musculoskeletal/ Skin	NIEHS – Environmental Health	NCCIH – Complementary & Integrative Health
NEI – Eye	NIBIB – Biomedical Imaging & Bioengineering	NIGMS – General Medical Sciences	NCATS – Advancing Translational Science
NHLBI – Heart, Lung, Blood	NICHD – Child Health & Development	NIMH – Mental Health	CIT – Information Technology
NHGRI – Genome	NIDCD – Deafness & Communication Disorders	NIMHD – Minority Health & Health Disparities	CSR – Scientific Review
NIA – Aging	NIDCR – Dental & Craniofacial Research	NINDS – Neurological Disorders & Stroke	FIC – Fogarty International Center
NIAAA – Alcohol	NIDDK – Diabetes, Digestive & Kidney	NINR – Nursing Research	CC – Clinical Center
NIAID – Allergy/ Infectious Diseases	NIDA – Drug Abuse	NLM – Library of Medicine	OD – Office of the Director

For more details: https://www.nih.gov/about-nih/what-we-do/nih-almanac/nih-organization

NIH Extramural Staff

Program Officer (PO)

- Before applying to discuss:
  - Concept paper aims & fit with NIH priorities
  - Appropriate funding mechanism
  - Responsiveness to review criteria
  - After Review to discuss next steps

Scientific Review Officer (SRO)

- After application is assigned to a review committee & until review is complete to discuss:
  - Review committee selection
  - Missing info
  - Supplemental info

Grants Management Officer (GMO)

- Before or after review to discuss:
  - NIH grants policy
  - Budget
  - Change of institutions
  - Grant start dates

Finding the Right IC and PO

Talk to **mentors and colleagues**

Search **NIH RePORTER** for funded projects

Search **NIH MATCHMAKER** for similar projects and their POs

Review **IC missions, strategic plans, & research priorities**

Review **IC division or program webpages**

Advice: Reaching Out to a PO

- Most POs prefer to be contacted by email rather than a cold call
- Share your ~1-page Specific Aims or brief project description in advance
  - Helps PO assess “mission-relevance” and fit
  - May facilitate follow-on discussions
- Initiate contact early in the application process
- You may talk to several POs before deciding where to submit

New & Early Stage Investigators

Early Stage Investigator (ESI) - NIH ESI page

- Never competed successfully for substantial, independent funding from NIH; Earned terminal degree within the past 10 years
- ESI applications with meritorious scores will be prioritized for funding.

New Investigator

- Never competed successfully for substantial, independent funding from NIH.
- NIH Institutes and Centers (ICs) fund New Investigators according to the ICs' programmatic and strategic interests.

NIH Funding Mechanisms

Part 1. Overview Information

Participating Organization(s)	National Institutes of Health (NIH)
Components of Participating Organizations	National Heart, Lung, and Blood Institute (NHLBI)
Funding Opportunity Title	Secondary Analysis of Existing Datasets in Heart, Lung, and Blood Diseases and Sleep Disorders (R21 Clinical Trial Not Allowed)
Activity Code	R21 Exploratory/Developmental Research Grant
Announcement Type	Reissue of PAR-20-078
Related Notices	NOT-OD-22-195 - New NIH "FORMS-H" Grant Application Forms and Instructions Coming for Due Dates on or after January 25, 2023 NOT-OD-22-189 - Implementation Details for the NIH Data Management and Sharing Policy NOT-OD-22-198 - Implementation Changes for Genomic Data Sharing Plans Included with Applications Due on or after January 25, 2023 NOT-OD-23-012 - Reminder: FORMS-H Grant Application Forms & Instructions Must be Used for Due Dates On or After January 25, 2023 - New Grant Application Instructions Now Available
Funding Opportunity Announcement (FOA) Number	PAR-23-036
Companion Funding Opportunity	None
Number of Applications	See Section III. 3. Additional Information on Eligibility.
Assistance Listing Number(s)	93.837, 93.839, 93.838, 93.233, 93.840
Funding Opportunity Purpose	This Funding Opportunity Announcement (FOA) encourages R21 applications that propose to conduct secondary analyses using existing human datasets in areas relevant to the National Heart, Lung, Blood Diseases and Sleep Disorders Institute (NHLBI) scientific mission. The FOA aims to stimulate the use of existing human datasets to investigate novel scientific ideas, and/or generate new models, systems, tools, or technologies that have the potential for significant impact on biomedical or

NIH Funding Opportunity Announcement (FOA)

Funding Opportunity Announcements (FOAs)

Type of FOA	Description
Program Announcements (PA, PAR, PAS)	• Highlights specific, high-priority areas of scientific focus/interest • Usually ongoing (3 years) • Often use standard receipt dates (you can control when you apply!) • Most (but not all) NIH ICs participate
Requests for Applications (RFA)	• Identifies specific scientific areas, amt of set-aside funds, anticipated # of awards • Usually, single receipt date • IC usually convenes review panel
Parent Announcements	• Broad FOAs allowing applicants to submit "investigator initiated" or "unsolicited" research ideas to a specific activity code (e.g., R01, R03) • Most apps to NIH = investigator initiated • Usually ongoing (3 years); standard receipt dates (you have flexibility)

Grant Programs

- **K = Career Development** -- K01, K08, etc.
- **R = Research Projects** -- R01, R03, R21, R35, etc.
- **P = Program Project/Center Grants** -- P01, P30, etc.
- **T = Training Grants** -- T32, T90, etc.
- **F = Fellowships (pre- and post-doctoral)** -- F31, F32
- **Resource Grants** -- various series

For more information: Types of Grant Programs

Career Development Awards (Ks)

- Provides protected time to conduct research & career development activities
- Intended to lead to independence
- Multiple types:
  - **Mentored** – Early-stage investigators needing mentored research training
  - **Non-mentored** – Independent investigators acquiring new research skills or to support mentoring activities
  - **Institutional** – Awards to institutions to support multiple K-level scholars

Selected Mentored K Awards

- **K01** - Mentored **Research Scientist** Development Award
  - *typically PhDs*
- **K08** - Mentored **Clinical Scientist** Development Award
  - *clinical degrees*
- **K23** - Mentored **Patient-Oriented Research** Development Award
  - *clinical degrees*
- **K99/R00** - NIH **Pathway to Independence** Award
  - *postdocs*

K-Award: How to be Competitive

- Demonstration of **commitment to research**
  - At least 1-2 publications (more is better!)
- Evidence of **strong mentor-mentee relationship**
- **Clear training plan** to show how you will develop research skills
- **Strong project description**

K-Award Advice

- Opportunity to develop relationship with a Program Officer
- Talk to previous K-award winners

NU K-Club Grant Writing Series

- Coming 2023!
- intended for junior faculty preparing to submit applications for the NIH Mentored Career Development Awards

Research Project Grant (R01)

Used to support a discrete, specified, circumscribed research project

Check FOA for deviation from standard deadlines

- Standard receipt dates for new applications: Feb 5, Jun 5, Oct 5
- No specific dollar limit unless specified in FOA, generally 3 -5 years
  - Advance permission required for $500K or more (direct costs) in any year
- Utilized by all ICs
- Success Rate (2021): 20%

Small Research Grant (R03)

Provides limited funding for a short period of time to support a variety of types of projects, including:

1. pilot or feasibility studies,
2. collection of preliminary data,
3. secondary analysis of existing data,
4. small, self-contained research projects,
5. development of new research technology.

Check FOA for deviation from standard deadlines

- Standard receipt dates for new applications: Feb 16, Jun 16, Oct 16
- Limited to 2 years, not renewable; up to $50K/year (direct costs)
- Utilized by more than half of the NIH ICs

Exploratory/Developmental Grant (R21)

Encourages new, exploratory and developmental research projects by providing support for the early stages of project development.

- No preliminary data is generally required
- Standard receipt dates for new applications: Feb 16, Jun 16, Oct 16
- Up to 2 years of funding; usually may not exceed $275K (direct costs)
- Most ICs utilize

Check FOA for deviation from standard deadlines

Research Education Projects (R25)

- Supports research education activities in NIH's mission areas.
- Activities may include:
  - Courses for Skills Development
  - Research Experiences
  - Mentoring Activities
  - Curriculum or Methods Development
  - Outreach

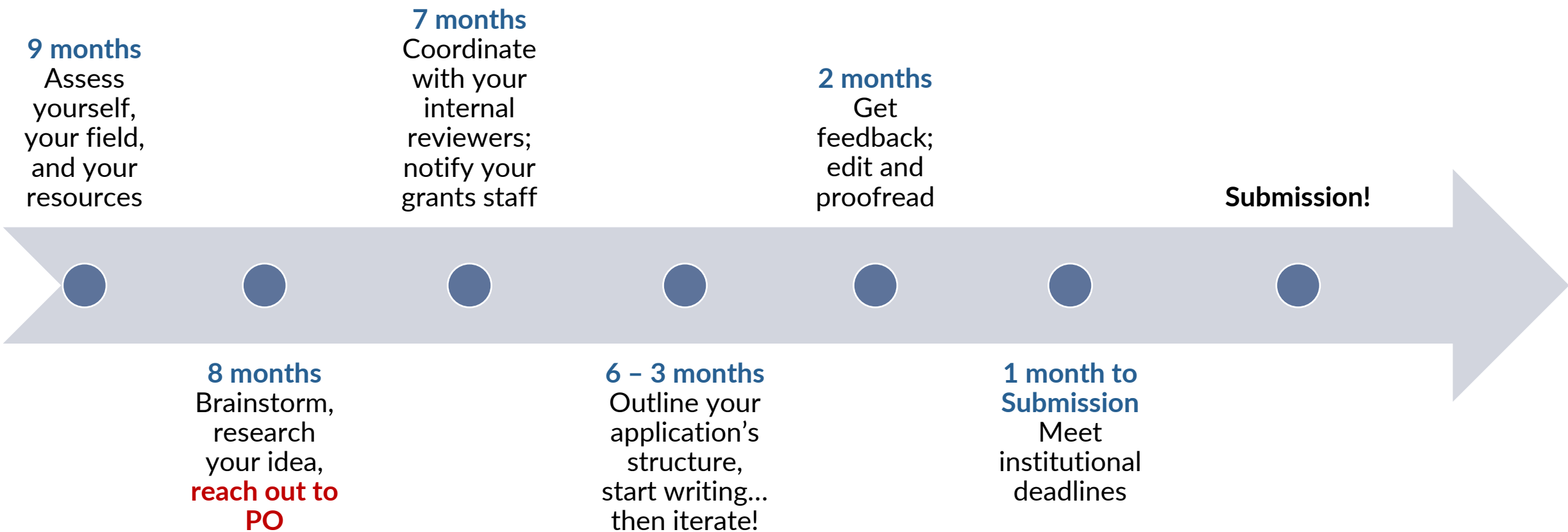
Funding may vary by IC or specific funding opportunity

Poll: Anonymous Question

What are some pain points that come to mind when thinking of applying to NIH?

Getting Started

Timeline & Planning



Understand the FOA

- Confirm which ICs are participating
- Identify eligibility & budget restrictions
- Read the background section to understand priorities
- Read the responsiveness criteria, application instructions, and review criteria to understand requirements and expectations
- Contact appropriate FOA contacts with any questions
  - PO for programmatic questions
  - Grants Management Officer (GMO) for budget or grants policy questions

Proposal Components: Research

Project Summary	**Project Narrative**	**Specific Aims**	**Research Strategy** (6-12 pages) •Significance •Innovation •Approach
References	**Budget and Budget Justification**	**Biosketch (5 pages)**	**Facilities and Resources**
	Equipment	**If applicable** •Human Subjects •Animal Subjects •Letters of Support/Consortium Letters •Resource Sharing Plan •Appendix	

Get Feedback on Your Draft

- Check with the assigned Program Officer for feedback on any revised Specific Aims
- Find internal reviewers – such as your mentor or a colleague - and/or set up a mock review
- Use your professional network

Double-Check Technical Details

- Check the FOA for any last-minute changes
- Check the application deadline – submit a few days early
- View the submitted application for accuracy – if you cannot view it, NIH cannot review it
  - Verify correct FOA
  - Verify total budget is within limits of FOA and IC
- If there are any warnings or identified errors with the submission, address those issues before the application deadline (5pm ET)

NIH Scoring System

- Reviewers give numerical scores
  - 1 (exceptional) to 9 (poor)
- Used for overall impact and criterion scores (*Significance*, *Investigators*, *Innovation*, *Approach*, *Environment*)

IMPACT	SCORE	DESCRIPTOR
High Impact	1	Exceptional
	2	Outstanding
	3	Excellent
Moderate Impact	4	Very Good
	5	Good
	6	Satisfactory
Low Impact	7	Fair
	8	Marginal
	9	Poor

Top 6 Tips for Getting Started

1. Start planning early
2. Find an NIH Institute or Center (IC) home for your application
3. Evaluate opportunities carefully for fit, including Review Criteria
4. Contact appropriate Program Officer early
5. Get feedback on your application draft
6. Present ideas clearly & double check the technical details

Panel Discussion

Panelists

Phil Brown

Bouvé College of Health Sciences

Allison Dennis

College of Engineering

Christie J. Rizzo

Bouvé College of Health Sciences

Panelist Questions

- All: please give a brief overview of your NIH experience
- Advice about planning your research funding path
- Thoughts/perspectives as a reviewer?
- Advice about working with a mentor?
- How did you find right IC home?
- Connecting with a program officer - how did you approach this - did you go to DC? Did you send an email with Specific Aims? What has your relationship with NIH POs progressed over time?
- How do you think about structuring your proposal - do you have any advice or recommendations?
- For a resubmission, how do you approach responding to reviewer comments in the revised proposal?

Additional Links Mentioned Today

- M. S. (April 09, 2015) NIH Grant Applications: The Anatomy of a Specific Aims Page. BioScience Writers. https://www.biosciencewriters.com/NIH-Grant-Applications-The-Anatomy-of-a-Specific-Aims-Page.aspx
- NIH Organization. https://www.nih.gov/about-nih/what-we-do/nih-almanac/nih-organization

Research Development at NU

- For proposal development help and advice, contact your Research Development office: https://resdev.northeastern.edu/our-team/