Grant Writing for Success

Preparing a NIH Grant Application

Paula S. Strickland, Ph.D., MPH

Director, Office of Research Training and Special Programs

Division of Extramural Activities

National Institute of Allergy and Infectious Diseases (NIAID)

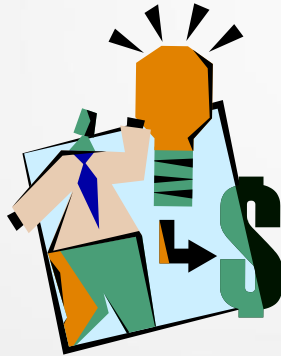National Institutes of Health (NIH)

Objective

Upon completion of this session, participants will be able to:

- list significant steps involved from application to award;

- explain the fundamentals of writing a clear and concise research grant application; and

- describe the differences in writing a career development (K) grant application compared to research grant opportunities.
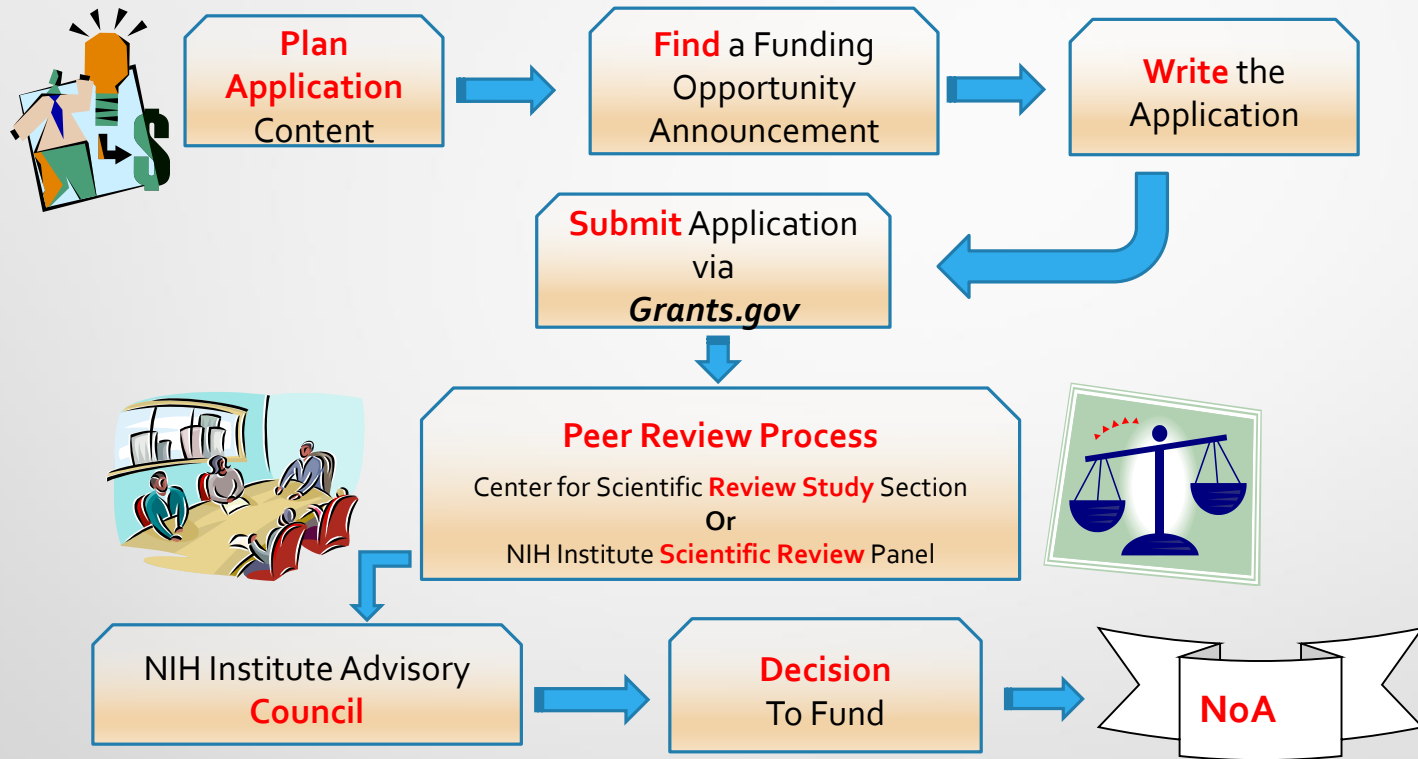
Where to Look For Funding Opportunity Announcements (FOA)

Grants.gov
Start with Grants.gov web Page

NIH.gov
Narrow your search – go to NIH Guide for Grants and Contracts

Institutes & Centers
Specific area of research - read the NIH Institutes and Centers research missions

Information to consider *before* you submit a NIH grant application…

NIH Grant Application and Review Process

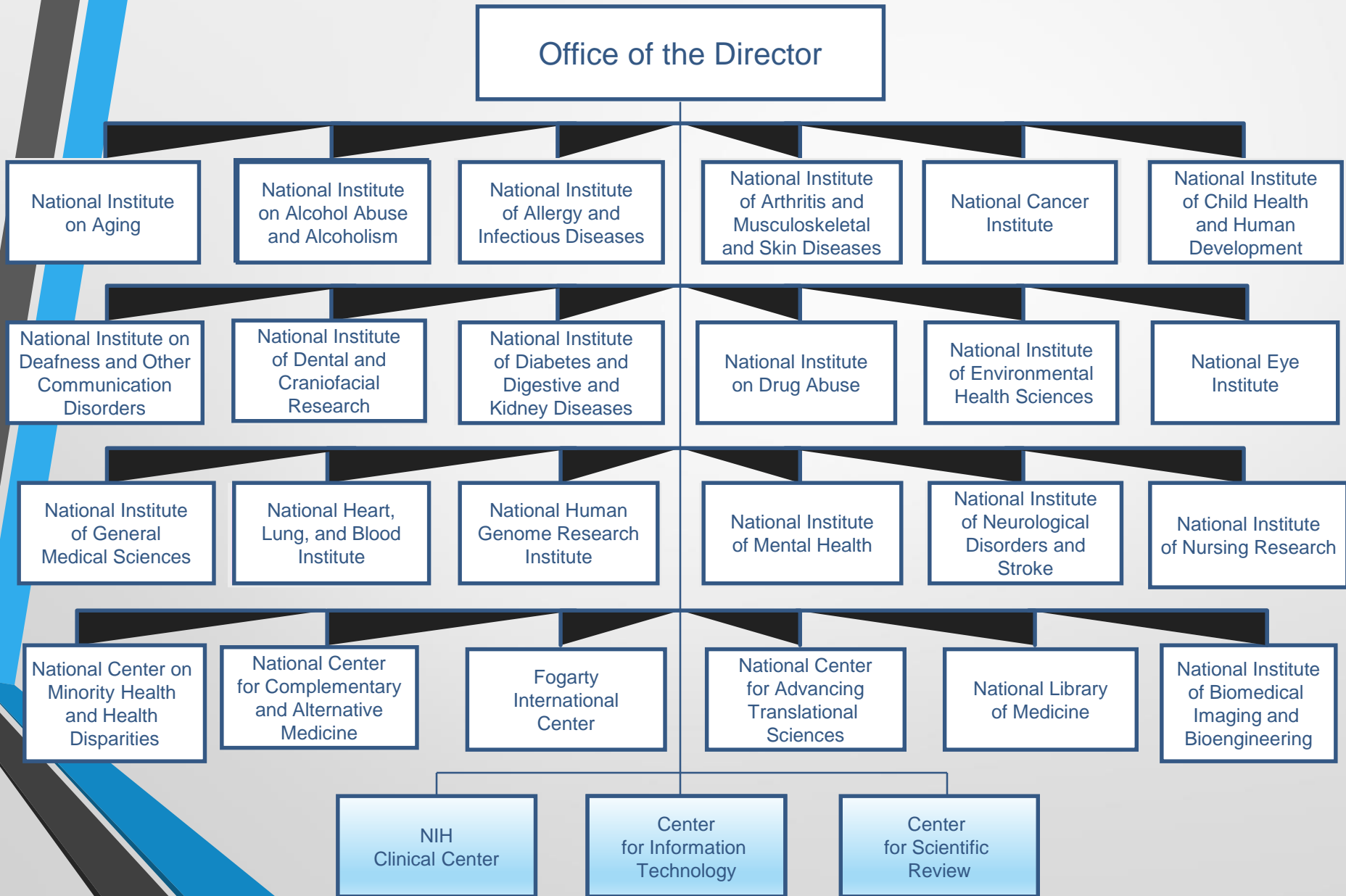**Plan Application** Content → **Find** a Funding Opportunity Announcement → **Write** the Application

Submit Application via *Grants.gov*

Peer Review Process
Center for Scientific **Review Study** Section
Or
NIH Institute **Scientific Review** Panel

NIH Institute Advisory **Council** → **Decision** To Fund → **NoA**

From application submission to award may take... 9 months

NIH Institutes and Centers

- Become familiar with:
- NIH organizational structure
  - 27 institutes and centers (IC)
  - Research mission of each IC
  - Types of people and organizations eligible to apply
  - Grant programs offered
- Determine if you need prior approval from your organization and/or NIH to apply
- Communicate with your organization's designated Authorized Organizational Representative (AOR) or Signing Official (SO)

National Institutes of Health

Office of the Director

National Institute on Aging	National Institute on Alcohol Abuse and Alcoholism	National Institute of Allergy and Infectious Diseases	National Institute of Arthritis and Musculoskeletal and Skin Diseases	National Cancer Institute	National Institute of Child Health and Human Development
National Institute on Deafness and Other Communication Disorders	National Institute of Dental and Craniofacial Research	National Institute of Diabetes and Digestive and Kidney Diseases	National Institute on Drug Abuse	National Institute of Environmental Health Sciences	National Eye Institute
National Institute of General Medical Sciences	National Heart, Lung, and Blood Institute	National Human Genome Research Institute	National Institute of Mental Health	National Institute of Neurological Disorders and Stroke	National Institute of Nursing Research
National Center on Minority Health and Health Disparities	National Center for Complementary and Alternative Medicine	Fogarty International Center	National Center for Advancing Translational Sciences	National Library of Medicine	National Institute of Biomedical Imaging and Bioengineering

NIH Clinical Center	Center for Information Technology	Center for Scientific Review

Fogarty International Center (FIC)

Research grants:

- Researcher training

- Fund research capacity building programs in low- and middle-income countries

- Fund research projects in a variety of areas such as infectious diseases, chronic conditions, population health, informatics, genetics, and clinical, operational and health services

- Collaborative programs partner with other NIH Institutes/Centers/Offices to support non-U.S. research

NIH > Fogarty International Center
Advancing Science for Global Health

Fogarty at 50

Connect with Fogarty

Home | **About Fogarty** | **Funding Opportunities** | **Grants Management** | **Global Health Resources** | **Fogarty Programs** | **News**

Home > Funding Opportunities > Fogarty Funding Opportunities - Dates and Deadlines

Print

Fogarty Funding Opportunities - Dates and Deadlines

Fogarty's global health research and research training programs offer a variety of funding opportunities. Find upcoming application deadlines, announcements from the NIH Office of Extramural Research (OER) and more information about Fogarty programs.

- NIH ASSIST now a submission option for applications to many Fogarty programs (NOT-OD-15-126)
- All Fogarty Programs
- Fogarty Programs that may be considered for future competition.

Subscribe to Fogarty's *Global Health Matters* newsletter, and weekly funding news for global health researchers.

> SUBSCRIBE

▶ Country Eligibility for Fogarty Training Grants
▶ **All NIH funding opportunities and notices**

Application Due Date	Fogarty Funding Opportunity (Announcement)	Affiliated Fogarty Programs (Overview)	Type of Opportunity
November 7, 2017	Global Brain and Nervous System Disorders Research Across the Lifespan (R21) (PAR-17-313)	Global Brain Disorders Research	Exploratory/Developmental Research Grant
November 7, 2017	Global Brain and Nervous System Disorders Research across the Lifespan (R01) (PAR-17-314)	Global Brain Disorders Research	Research Project Grant
December 11, 2017	Reducing Stigma to Improve HIV/AIDS Prevention, Treatment and Care in Low- and Middle-Income Countries (R21) (PAR-17-474)	Stigma HIV/AIDS	Exploratory/Developmental Research Grant
December 14, 2017	Emerging Global Leader Award (K43) (PAR-17-001)	Emerging Global Leader	Career Development Grant
December 14, 2017	Global Noncommunicable Diseases and Injury Across the Lifespan: Exploratory Research (R21) (PAR-16-052)	Global Noncommunicable Diseases and Injury Research	Exploratory/Developmental Research Grant
March 7, 2018	International Research Scientist Development Award (IRSDA) (K01) (PAR-17-002)	International Research Scientist Development Award (IRSDA)	Career Development Grant
March 14, 2018	Planning for Non-Communicable Diseases and Disorders Research Training Programs in Low and Middle Income Countries (D71) (PAR-17-097)	Chronic, Noncommunicable Diseases and Disorders Research Training	International Research Training Planning Grant
May 17, 2018	International Research Ethics Education and Curriculum Development Award (R25) (PAR-16-081)	Bioethics	Education Project
May 17, 2018	International Bioethics Research Training Program (D43) (PAR-16-454)	Bioethics	International Research Training Grants
July 26, 2018	Global Infectious Disease Research Training Program (D43) (PAR-17-057)	Global Infectious Diseases (GID)	International Research Training Grants

https://www.fic.nih.gov/Funding/Pages/Fogarty-Funding-Opps.aspx

National Institute of Allergy and Infectious Diseases (NIAID)

https://www.niaid.nih.gov/
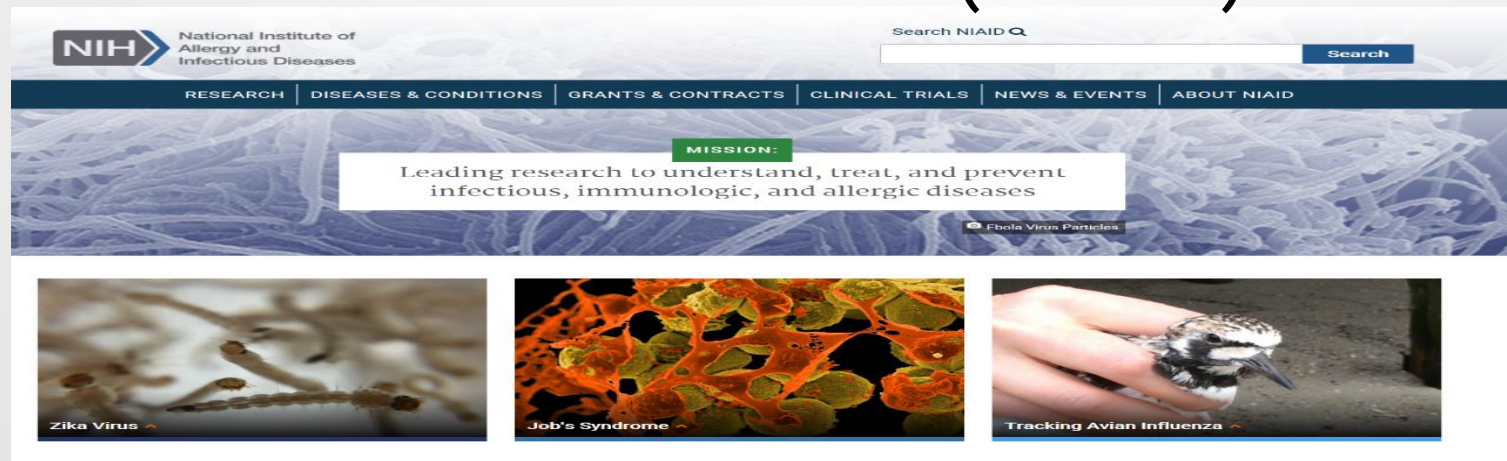
- Supports and conducts global research

- Funds a wide range of international biomedical research in infectious, immunologic, and allergic diseases and conditions.

- Trains and collaborates with scientists from around the world

- Supports projects in more than 100 countries.

- Global research covers a broad spectrum of diseases and conditions including

  - HIV/AIDS, malaria, influenza, tuberculosis, diabetes, asthma, and many others.

https://www.niaid.nih.gov/grants-contracts/opportunities

NIH Award Mechanisms

- **Grants**
  - Investigator initiated
  - Program Announcement (PA)
  - Request for Applications (RFA)

- **Cooperative agreements**
  - Substantial NIH staff involvement
  - Solicited – RFA

- **Contracts**
  - Solicited – Request for Proposals (RFP), Broad Agency Agreement (BAA), other contract mechanisms

Types of Research Grants

Small Grant Program (R03)

- Limited funding for a short period of time to supports various types of projects, including: pilot or feasibility studies, collection of preliminary data
- Direct costs generally up to $50,000 per year
- Limited to two years of funding

Exploratory/Developmental Research Grant Award (R21)

- New, exploratory & developmental projects, supports early stages of project
- Limited to up to two years of funding
- Budget for direct costs for the two year project period up to $275,000.
- No preliminary data is generally required

Research Project Grant (R01)

- Used to support a discrete, specified research project
- NIH most commonly used grant program
- Budget – costs appropriate for the project, typically <$500K/year
- Generally awarded for 3-5 years

Research Project Cooperative Agreement (U01)

- Supports discrete, specified projects to be performed by investigator(s) in an area representing specific interests and competencies
- Substantial NIAID program staff involvement
- No specific dollar limit – amount and years specified in FOA

View sample applications from former applicants

Identify Collaborative Research and Research Administration Opportunities

- **Examples:**
- Develop and implement **collaborative research projects** conducted with current NIH awardees.
- Identify opportunities for **scientist exchanges** between early stage scientists and experts in your field or related field of research.
- Conduct **workshops or symposia** to bring together scientists, and expert researchers, and clinicians performing related research.
- Network with **research administrators** who are managing NIH awards

Specific Aims and Research Strategy

- Specific Aims:
  - Think about and develop language that clearly describes the research project aims and indicate which partner of the collaboration will be responsible for accomplishing each of the aims.

- Research Strategy:
  - Ensure there is sufficient information in the grant application to allow evaluation of the proposed research
  - Provide clear plans and goals of the research especially the roles and responsibilities of all participating partners
  - Engage research administrator to develop a well developed, and appropriately budgeted, financial management plan

Clinical Trial (CT) or Non-CT

- **NIH Definition of a Clinical Trial:**

"A research study in which one or more human subjects are prospectively assigned to one or more interventions (which may include placebo or other control) to evaluate the effects of those interventions on health-related biomedical or behavioral outcomes."

▶ **Beginning for Due Dates on or after January 25, 2018**

Applicants proposing clinical trials - must apply to a FOA that allows CTs. https://grants.nih.gov/grants/guide/notice-files/NOT-OD-17-114.html

Applications submitted through a non-CT FOA will be returned without review.

New NIH "FORMS-E" Grant Application Instructions

- New Forms and Instructions for application due dates on or after **January 25, 2018**.

  - https://grants.nih.gov/grants/guide/notice-files/NOT-OD-17-119.html

  - Video Tour - https://www.youtube.com/watch?v=nz9NWFhYOG8&list=PLOEUwSnjvqBJeHcb4yai7_fDnFZFPEmQK&index=1

- Includes new PHS Human Subjects and Clinical Trials Information form, and other policy information.

Career Development Applications (K)

https://researchtraining.nih.gov/career-path

Career Stage

Graduate Student/Medical Student
- Pre-doctoral training

Postdoctoral
- Fellowships
- Transition grants (e.g. K99/R00)

Early Stage Researcher
- Mentored training grant (e.g. K08)

Mid-Career Researcher
- Mid-Career investigator grant (e.g. K24)

Senior Researcher
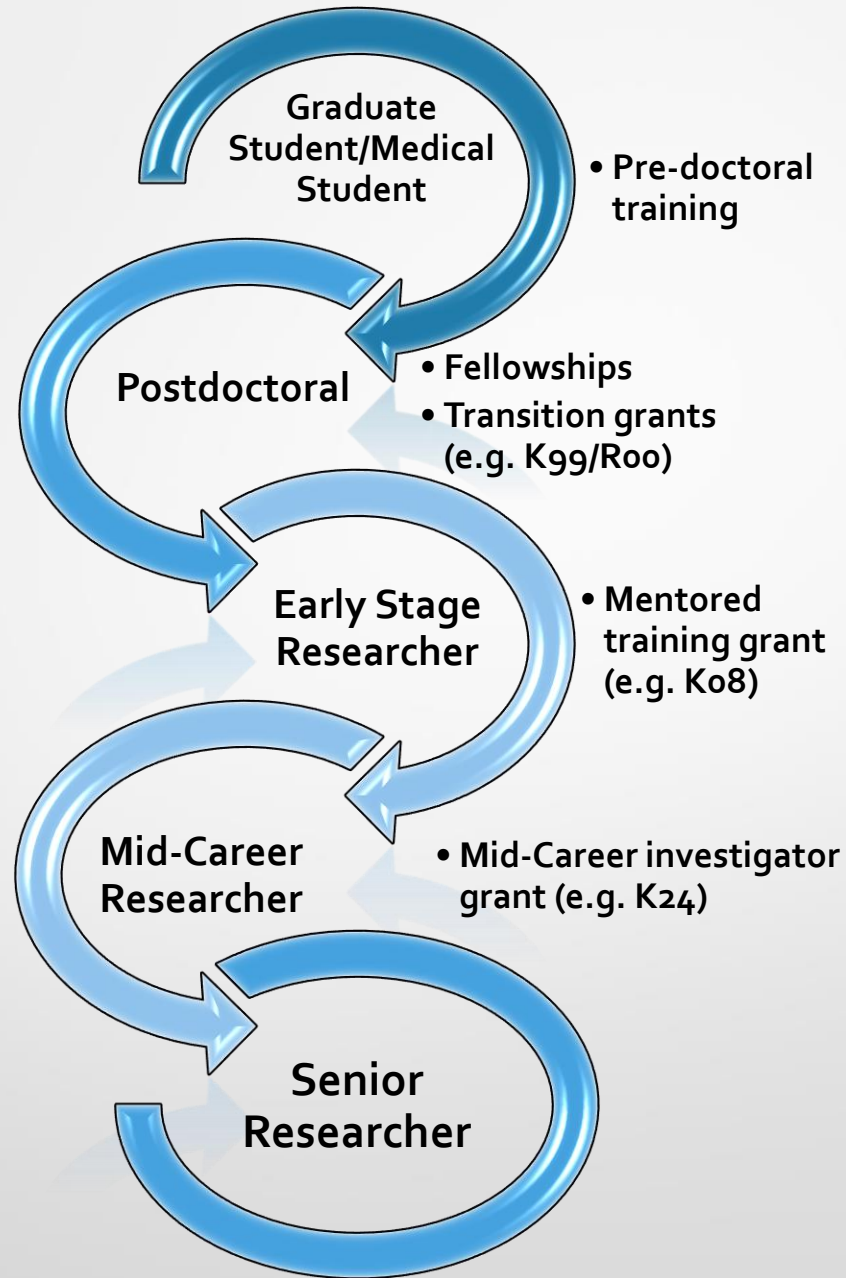
FOA– Career Development Example

Funding Opportunity Title	Mentored Clinical Scientist Research Career Development Award (Parent K08)
Activity Code	K08 Clinical Investigator Award (CIA)
Announcement Type	Reissue of PA-14-046
Related Notices	• May 10, 2017 - New NIH "FORMS-E" Grant Application Forms and Instructions Coming for Due Dates On or After January 25, 2018. See NOT-OD-17-062. • March 17, 2017 - NCI will support training in Patient-Oriented Research through K08 Awards and increase K08 Salary and Research Support. See Notice NOT-CA-17-042. • September 13, 2016 - NHLBI Policy Concerning Mentored Career Development (K08 and K23) Awards. See Notice NOT-HL-16-443. • June 2, 2016 - Notice to Extend the Expiration Date for PA-16-191. See Notice NOT-OD-16-098.
Funding Opportunity Announcement (FOA) Number	PA-16-191
Companion Funding Opportunity	None
Number of Applications	See Section III. 3. Additional Information on Eligibility.
Catalog of Federal Domestic Assistance (CFDA) Number(s)	93.847; 93.242; 93.856; 93.855; 93.846; 93.213; 93.113; 93.398 93.279; 93.839; 93.838; 93.837; 93.859; 93.867; 93.273; 93.121; 93.286; 93.866; 93.173; 93.853 93.865; 93.172;
Funding Opportunity Purpose	The primary purpose of the NIH Mentored Clinical Scientist Research Career Development Awards (K08) program is to prepare qualified individuals for careers that have a significant impact on the health-related research needs of the Nation. This program represents the continuation of a long-standing NIH program that provides support and "protected time" to individuals with a clinical doctoral degree for an intensive, supervised research career development experience in the fields of biomedical and behavioral research, including translational research. Individuals with a clinical doctoral degree interested in pursuing a career in patient-oriented research should refer to the NIH Mentored Patient-Oriented Research Career Development Award (Parent K23). Prospective candidates are encouraged to contact the relevant NIH staff for IC-specific programmatic and budgetary information: Table of IC-Specific Information, Requirements and Staff Contacts.

Writing a K Application ?

- Career Development Award
  - Ks for clinicians at different career stages
  - Also K99/R00 transition award
- Check **eligibility** requirements for you and your mentor(s)
- Review criteria
  - Candidate
  - Mentor(s), Co-mentor(s) – mentoring team
  - Career development plan/career goals and objectives
  - Research Plan
  - Environment and Institutional Commitment

Where to find help throughout the process…

http://grants.nih.gov/grants/oer.htm

Funding Opportunity Announcement (FOA)

Read the FOA Sections Carefully and Completely

- Identify FOA of interest and check **application due date**

- Read Eligibility Section to ensure non-U.S. entities are eligible to apply

Non-U.S. research partners, questions to consider:

- Does the application/proposal

    - Present **special** opportunities for furthering research programs?

    - Describe use of **unusual talent**, resources, populations, or environmental conditions?

    - Propose research **not readily available in the United States** or that augments existing U.S. resources as well as your local population?

FOA For Research Award
Key Points - Example

Open Date (Earliest Submission Date)   May 22, 2018

Letter of Intent Due Date(s)   30 days before the application due date

Application Due Date(s)   July 27, 2018, October 14, 2018, February 17, 2019, October 14, 2019 **by 5:00 PM local time of applicant organization**
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

AIDS Application Due Date(s)   Applicable or Not Applicable

Scientific Merit Review   Nov 2018, Feb 2019, July 2019, Nov 2019, Feb 2020

Advisory Council Review   Jan 2019, May 2019, Oct 2019, Jan 2020, May 2020

Earliest Start Date   April 2019, July 2019, Dec 2019, April 2020, July 2020

FOA Expiration Date   October 15, 2019

- **Eligible Organizations (Section III) – check eligibility**

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

FOA: RFA Example

Example Program Announcement (PA): FOA Research Administration Development

PAR-15-131 **Global Infectious Disease Research Admin Development Award for LMIC Institutions (G11)**

Purpose:

- Provide senior administrators from LMICs with advanced training in the management of NIH grants – improve in-country oversight & compliance
- Train-the-Trainer: to generate long-term training programs for grants management staff from within the local institution

Eligible Applicants:

- Located in a LMIC as defined by the World Bank
- Currently receiving funds from NIAID, directly or as a sub-awardee
- Received less than $2.2 million in total NIH grant or cooperative agreement support over the last 5 years (NOT-AI-16-029)

NIH Extramural Research Team
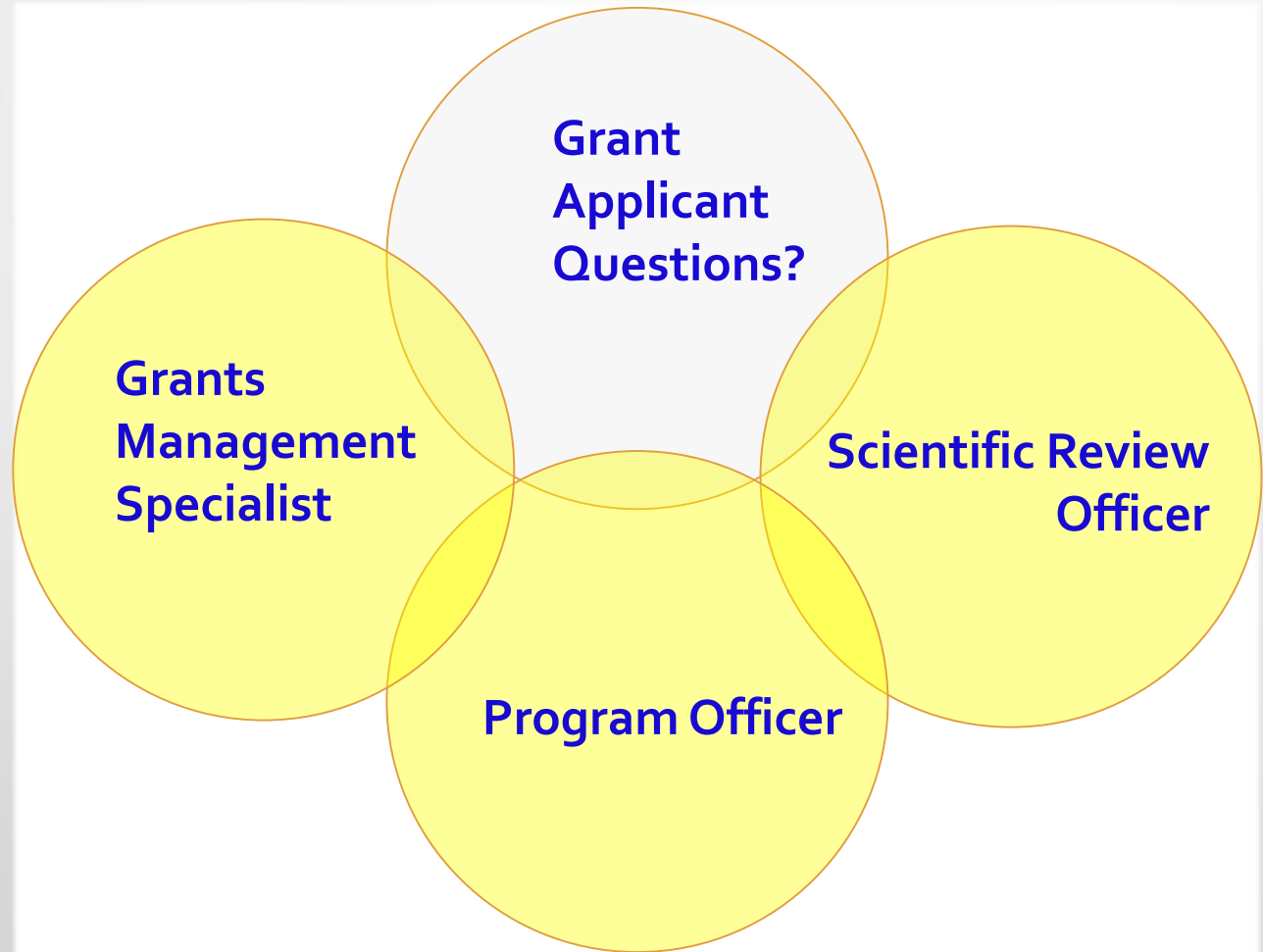
Scientific Review Officer (SRO):

Credit: NIH,CSR

- Peer review process official

- Each Grant Application Study Section is led by a SRO.

- The SRO is an extramural staff scientist and Designated Federal Official (DFO) responsible for ensuring that each application receives an objective and fair initial peer review and that all applicable laws, regulations, and policies are followed.

Scientific Program Officer (PO)*

- Scientist and administrator

- Manages scientific research portfolio

- Identifies research opportunities and needs

- Sets priorities and stimulates interest in specific scientific areas

- Communicates research program priorities

- Can provide advice before and after peer review meetings

*Also called a Program Director (PD), Contracting Officer Representative (COR)

Grants Management Specialist (GS)

- Provides NIH grants policy guidance to awardees and applicants

- Interprets grants policies as they relate to the grant award process

- Negotiates and issues all grant awards

- Handles all matters relating to the notice of grant award, including funding levels and terms and conditions

- Oversees and resolves budget and administrative grant issues

Applying for Grants: e-Submission

Research Grant Application

Grantee Institution Signing Official

Grants.gov & eRA Commons

Adhere to Application <u>**Due Dates**</u>

<u>Submit by Due **Date**</u>: Check the FOA – Recommend: submit several days early

<u>Latest Submission Time</u>: Due **by 5:00 PM local time** of the applicant organization on the specified due date.

NEXT…Peer Review

Peer Review: Evaluation Criteria

- **Criteria** described below are considered in **Evaluating** the Application
  - **Five Individually Scored Review Criterion**
    - significance
    - investigator(s)
    - innovation
    - approach
    - environment
  - Reviewers consider each criterion score in formulating an overall **impact/priority score** for the application
  - **Resubmission**— applicable to applications that have been through ONE round of peer review. Respond to comments from the previous review

Peer Review: Evaluation Criteria...cont.

- Also includes initiative specific review criteria, when applicable

- Additional review criteria – (HS, Animals, Biohazards, resubmission, renewal)

- Additional review considerations:

  - Applications from Foreign Organizations

  - Select Agents

  - Resource Sharing Plans

  - Budget and Period of Support

- Reviewers evaluate and score each application

Peer Review: NIH Scoring System

Score	Descriptor	Additional Guidance on Strengths/Weaknesses
1	Exceptional	Exceptionally strong with essentially no weaknesses
2	Outstanding	Extremely strong with negligible weaknesses
3	Excellent	Very strong with only some minor weaknesses
4	Very Good	Strong but with numerous minor weaknesses
5	Good	Strong but with at least one moderate weakness
6	Satisfactory	Some strengths but also some moderate weaknesses
7	Fair	Some strengths but with at least one major weakness
8	Marginal	A few strengths and a few major weaknesses
9	Poor	Very few strengths and numerous major weaknesses

After Initial Peer Review ...

- Application receives an overall impact/priority score

- Summary statement is written – provides a summary of the reviewers discussion and recommendations

- Information is also available to NIAID staff

- Priority score and summary statement are available to the applicant in the NIH eRA Commons system

eRA Commons
A program of the National Institutes of Health

Second Level of Review

- After the Initial Peer Review is complete

- The Second level of Review is done by the Institutes' Advisory Council/Board members

To Fund or <u>Not</u> To Fund?

- Funding decisions
  - Details documented in each institute's procedures.
- Review products used in funding decisions
  - Impact score and percentile
  - Summary statement
  - Criterion scores
- Program factors in funding decisions
  - Relevance to institute's mission and priorities
  - Council recommendations
  - Early-stage PI status
  - Other Institute specific factors
- Institute final funding decisions based on advice from staff and the Advisory Council/Board
- Successful applicants receive a Notice of Award from the funding institute's grants management officer

Resources For Researchers

Some NIH institutes offer resources that can help facilitate preclinical and/or clinical research

NIAID Resources for Researchers

- Helps translation of basic research into safe and effective drugs, vaccines, and diagnostics

- Requests can come from an investigator in academia, a not-for-profit organization, industry, or government in the United States or worldwide

- Requesters do not have to be NIAID/NIH awardees

  - **Tools, Datasets & Services**
    - Bioinformatics
    - Biological Materials
    - Translational Research
    - Technology Transfer & Intellectual Property
    - Partnering With NIAID
    - HIV/AIDS Research Resources
    - Allergy, Immunology, Transplantation Research Resources
    - Microbiology and Infectious Diseases Resources
  - Research Rules & Policies

National Cancer Institute Research Resources

Reporting Tools

Research Portfolio Online Reporting Tools (RePORT)

- Free database of funded projects, investigators, publications, and patents.

- Use to identify research areas that are highly supported or underrepresented

- Useful for identifying potential collaborators in your area of science.

- Use to identify awards by location

- Helpful for identifying research not readily available in the U.S.

- Provides frequently requested and customized funding reports

- Includes RePORT tutorials

https://report.nih.gov/index.aspx

"Matchmaker"

- The [NIH RePORTER](https://reporter.nih.gov) database includes a "Matchmaker" tab. If you enter your specific aims or project summary you will find similar projects that have been funded by the NIH, which institutes funded those projects, which study sections reviewed them, and potential collaborators funded in your subject or geographic area to ask for advice.

National Institute of
Allergy and
Infectious Diseases

RESEARCH | DISEASES & CONDITIONS | GRANTS & CONTRACTS | CLINICAL TRIALS | NEWS & EVENTS | ABOUT NIAID

Grants & Contracts > Find a Funding Opportunity > Opportunities & Announcements

Share This: 🟦 🐦 in

Find a Funding Opportunity

Opportunities & Announcements

Find a Foundation

Stay Informed About Policy Changes & News

Types of Funding Opportunities ➕

NIAID Research Priorities ➕

See Funded Projects

Timelines & Due Dates ➕

Find a Foundation or Other Funding Source

This page lists resources for finding grant funding opportunities outside NIH.

Use these resources to launch your own search. See the Disclaimer about external links.

To suggest a resource for the list, please email deaweb@niaid.nih.gov ✉.

Free Resources

- ARVO Funding Guide ⬈—list of over 200 funding opportunities for biomedical researchers. Search by keyword or sort by career stage, degree track, opportunity type, or citizenship requirements.
- CRDF Global ⬈—promotes international scientific and technical collaboration through grants, technical resources, training, and services. Go to Grants and Grantees ⬈.
- Foundation Center ⬈—Foundations Directory Online *Free* ⬈ includes a free search tool providing public access to essential information on approximately 90,000 foundations. Go to Search Grantmakers ⬈.
- Grants and Funding ⬈ from Science—another list of places to search for funding.
- National Science Foundation ⬈—funds research and education in most fields of science and engineering. Go to Find Funding ⬈.
- Newton's List ⬈—tool for funders and grantseekers interested in collaborative international research and education. Open to basic research funding opportunities related to the natural sciences, engineering/technology, agricultural sciences, or social sciences. Go to Search for Opportunities ⬈.
- proposalCENTRAL ⬈—e-grantmaking website shared by government, non-profit, and private grantmaking organizations. Go to Opportunities ⬈ to see what's available and Application System ⬈ to set up an account.

https://www.niaid.nih.gov/grants-contracts/find-foundation

Websites

Research Funding Opportunities

- U.S. Department of Health and Human Services http://www.hhs.gov/grants/

- Grants.gov (grants)

- http://www.grants.gov/

- FedBizOps (contracts)

- https://www.fbo.gov/

- Grants and Funding:

  - https://grants.nih.gov/grants/oer.htm - See the "Information for…"section

  - administrators and researchers find this site very useful.

- How to Apply – Application Guide

  - https://grants.nih.gov/grants/how-to-apply-application-guide.html

- Subscribe to NIH Guide LISTSERV:
  - Official publication for Grant Policies, Guidelines and Funding Opportunities
    - http://grants.nih.gov/grants/guide/listserv.htm

- NIAID Funding information:
- Funding News https://www.niaid.nih.gov/grants-contracts/funding-news
- Opportunities & Announcements
- Sample Applications https://www.niaid.nih.gov/grants-contracts/sample-applications
- NIAID Grants Policy and Management Training for Foreign Investigators
- https://www.niaid.nih.gov/grants-contracts/foreign-grants-management

Much Success in Your Research!

Questions?