



## NIDA Career Workshop

# Developing a Successful NIH Grant Application *Tools and Tips for New Applicants*



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# Grant Application: Background Planning

- Identify NIH institute(s) whose strategic goals are closely aligned with your research interests
- Scan publicly available resources (*NIH Reporter*) to know existing NIH-funded research in your area
- Identify FOAs that fit your career stage and research interests and know their due dates
- Verify eligibility (*e.g. Citizenship, research experience, position, etc.*) requirements
- Brainstorm your research idea with mentors, colleagues, subject matter experts
- Contact NIH staff (Program Officer, Training Officer) for guidance
- Select mentors, establish collaborations, and lineup resources needed for the project

**Prior  
Planning  
Prevents  
Poor  
Performance**



## NIDA: Strategic Goals

Identify the biological, environmental, behavioral, and social causes and consequences of drug use and addiction across the lifespan


Develop new and improved strategies to prevent drug use and its consequences

Develop new and improved treatments to help people with substance use disorders achieve and maintain a meaningful and sustained recovery

Increase the public health impact of NIDA research and programs

[https://www.drugabuse.gov/sites/default/files/2020-02/nida\\_2016strategicplan\\_032316.pdf](https://www.drugabuse.gov/sites/default/files/2020-02/nida_2016strategicplan_032316.pdf)

# NIH Funded Research in Your Scientific Area



Research Portfolio Online Reporting Tools  
(RePORT)

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NIH RePORTER  
Version: 7.40.0

[FIND PROGRAM OFFICIALS OR SIMILAR PROJECTS](#)

QUERY

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Fiscal Year (FY): 

SELECT

  
Current FY is 2020

RESEARCHER AND ORGANIZATION

Principal Investigator (PI) / Project Leader:  
(Last Name, First Name)

,

Use '%' for wildcard in PI names

[Enter several PI/Project Leader names OR PI Profile IDs](#)

City:

Use '%' for wildcard

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DUNS Number:

Organization: 

LOOKUP

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Characters left: 2500

# NIH Funding Opportunity Announcements (FOAs)

- [Subscribe](#) to Weekly [NIH Funding Opportunities and Notices](#) email
- Identify FOAs that closely align with your scientific goals
- Verify eligibility
- Understand the FOA requirements (*e.g. preliminary data*)
- Contact NIH staff listed in the FOA for questions

**Tip:** Be aware of [scientific concepts approved](#) for FOA development.  
FOAs will be published in 4-8 months

**Tip:** Regularly check the FOA webpage for any updates (receipt dates, eligibility requirements, objectives, etc.)

# Brainstorming a Research Idea

- Establish significance
  - Does the project address an important problem?
  - Does it build upon or expand current knowledge? (Scientific Premise)
- Clarify research goals and underlying rationale(s)
- Establish focused specific aims that clearly address goals
- Is it feasible? (Approach and Environment)
- Preliminary data available/needed to support feasibility
- Will scientific knowledge be advanced? (Impact)
- Fully assess relevant literature

# Contacting the NIH Program Staff: Do's and Don'ts

What POs can do:	What POs <b>cannot</b> do:
Provide feedback on the fit of your proposed work with the mission and scientific priorities of the IC	Co-write or rewrite any portion of an application
Provide feedback on suitability of your proposed work for a specific FOA	Propose copy edits to your proposal
Clarify program requirements	Provide <u>specific</u> edits to specific aims or research plan
Provide general tips/strategies on writing strong applications	Recommend <u>specific</u> advice on experimental design
Suggest resources that might help you in preparing a strong application	Share information that is not a part of the FOA or is not in the public domain

<https://nexus.od.nih.gov/all/2020/10/05/program-officials-are-here-to-help/>

# Contacting Program Staff: *Tips for Reaching Out*

- Use email to initiate the connection
- Be specific
  - Use the subject line to convey your main “ask”
  - Provide opportunity number, mechanism or other available details
  - Explain why you are reaching out and give enough context for the PO to be prepared for a meaningful discussion
- Be prepared – do your homework and check online resources
- Don’t wait until the last minute
- Don’t be afraid to ask questions – no one will think less of you for not knowing the answer
- Program officials are a tremendous resource. They are here to help.

<https://nexus.od.nih.gov/all/2020/10/05/program-officials-are-here-to-help/>



# Writing a Grant Application



## How to Apply - Application Guide

Use the application instructions found on this page along with the guidance in the funding opportunity announcement to submit grant applications to NIH, the Centers for Disease Control and Prevention, the Food and Drug Administration, and the Agency for Healthcare Research and Quality.

### Prepare to Apply

- [Systems and Roles](#)
- [Register](#)
- [Understand Funding Opportunities](#)
- [Types of Applications](#)
- [Submission Options](#)
- [Obtain Software](#)

### Write Application

- [Write Your Application](#)
- [How to Find Forms](#)
- [Develop Your Budget](#)
- [Format Attachments](#)
- [Rules for Text Fields](#)
- [Page Limits](#)
- [Data Tables](#)
- [Reference Letters](#)
- [Biosketches](#)

### Submit

- [Submit, Track, and View](#)
- [How We Check for Completeness](#)
- [Changed/Corrected Applications](#)
- [Standard Due Dates](#)
- [Submission Policies](#)
- [Dealing with System Issues](#)



[FAQs](#)

# Grant Writing Tips

- ***Specific aims and Hypothesis:*** Need to be succinct and realistic, convincing,  
*Tip:* solicit early feedback from colleagues, mentors, SMEs
- ***Project Summary/Abstract:*** Concise, succinct and convincing.
  - *Tip:* Write the abstract after the application is written
- ***Align application with NIH Review Criteria:*** Significance, Investigator, Innovation, Approach, Environment
- ***Resources:*** Adequate for meeting the research goals
- Clear experimental design with appropriate controls and alternative approaches
  - Identify who will do what, when, where, and how
- Clear Significance and Scientific Impact
- Focus on all parts of the grant application not just the research plan
- Check for typos, grammar, mismatching fonts, illegible figures and/or figure labels

# Grant Application: Sample Documents



GRANTS & FUNDING

NIH Central Resource for Grants and Funding Information

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## Samples: Applications, Attachments, and other Documents

If you are new to writing grant applications, sometimes seeing how someone else has presented their idea can help as you are developing your own application. With the gracious permission of successful investigators, some institutes have provided samples of funded applications, summary statements, sharing plans, leadership plans, and more.

When referencing these resources, it is important to remember:

- These applications were developed using the application forms and instructions that were in effect at the time of their submission. Forms and instructions change regularly. Read and carefully follow the instructions in the funding opportunity announcement to which you are responding and the current [application instructions](#) carefully.
- The best way to present your science may differ substantially from the approach taken by those who wrote the example applications. Seek feedback on your draft application from mentors and others.
- Talk to an [NIH program officer](#) in your area of science for advice about the best type of grant program and the Institute or Center that might be interested in your idea.
- Samples are not available for all grant programs. Many programs have common elements and the available samples can still provide helpful information.

### Samples


- The National Institute of Allergy and Infectious Diseases (NIAID) [Sample Applications and More](#) website includes examples of funded R01, R03, R15, R21, SBIR/STTR, K, and F applications, summary statements, sharing plans, leadership plans, and more.
- The National Cancer Institute (NCI) website provides several types of sample applications, including
  - [Sample Behavioral Research Grant Applications](#)
  - [Sample Cancer Epidemiology Grant Applications](#)
  - Implementation Science Team, Division of Cancer Control and Population Sciences, NCI – [Sample Grant Applications](#)

# Grant Application Samples

R01

Grant Yields and Biomarkers of Exposure for Tobacco Product Regulation

Principal Investigator



[Irina Stepanov, Ph.D.](#)  
University of Minnesota

Grant Mechanism & Award Number

1R01CA179246-01

[VIEW ABSTRACT](#)

[VIEW GRANT APPLICATION \(PDF, 968KB\)](#)

R03

Grant Beliefs and Bias in a Randomized Controlled

Principal Investigator



[Judy R. Rees, B.M., B.Ch., M.P.H., Ph.D.](#)  
Dartmouth College

Grant Mechanism & Award Number

1R03CA178272-01


[VIEW ABSTRACT](#)

[VIEW GRANT APPLICATION \(PDF, 968KB\)](#)

R21

Effective Training Models for Implementing Health Promoting Practices Afterschool

Principal Investigator



[Rebekka Lee, Sc.D.](#)  
HARVARD SCHOOL OF PUBLIC HEALTH\*

Grant Mechanism & Award Number

1R21CA201567-01A1

[VIEW GRANT APPLICATION \(PDF, 857KB\)](#)

F31

<p>Am, Nicole</p>	Title: The impact of innate immune recognition of Staphylococcus aureus on bone homeostasis and skeletal immunity	
12/08/2016	FOA: PA16-309	Council: 05/2017
Application ID: FORMS-D	FOA Title: RUTH L. KIRSCHSTEIN NATIONAL RESEARCH SERVICE AWARD (NRSA) INDIVIDUAL PREDOCTORAL FELLOWSHIP (PARENT F31)	
1 F31 AI125413-01A1	Dual: AR	Accession Number: 4000839

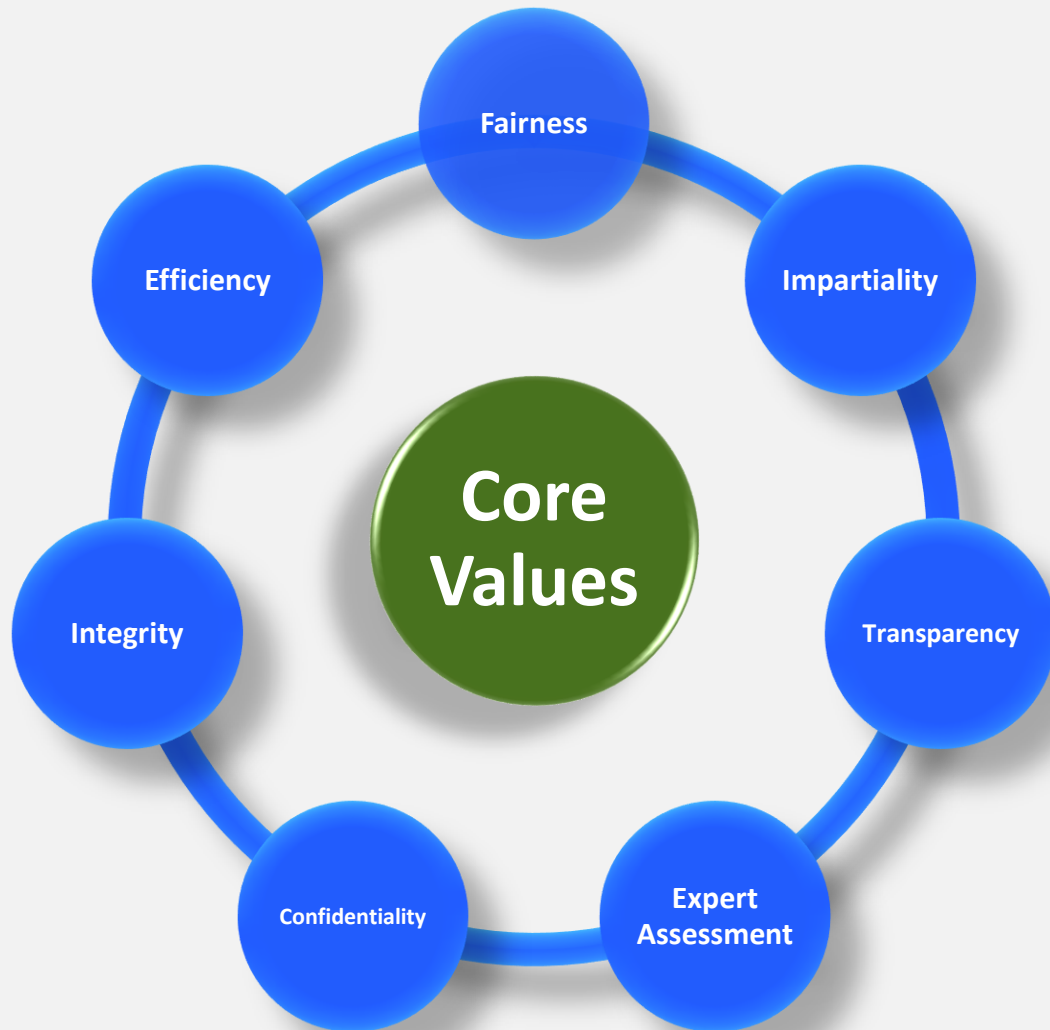
K01

<p>gio, Lilliam</p>	Title: Metabolomics Evaluation of the Etiology of Pneumonia	
7/08/2016	FOA: PA16-190	Council: 01/2017
Application ID: FORMS-D	FOA Title: MENTORED RESEARCH SCIENTIST DEVELOPMENT AWARD (PARENT K01)	
1 K01 AI125413-01A1	Dual:	Accession Number: 3955629

K08

<p>Tuan Manh</p>	Title: Defining clinical and sterile immunity to Plasmodium falciparum infection using systems biology approaches	
12/2016	FOA: PA16-191	Council: 01/2017
Application ID: FORMS-D	FOA Title: MENTORED CLINICAL SCIENTIST RESEARCH CAREER DEVELOPMENT AWARD (PARENT K08)	
1 K08 AI125682-01A1	Dual:	Accession Number: 3956054
IPF: 577806	Organization: INDIANA UNIV-PURDUE UNIV AT INDIANAPOLIS	

# NIH Peer Review



- Panel of subject matter experts
- Evaluate applications – identify strengths and weaknesses
- Provide a written critique and score for the application
- Each application is evaluated by three reviewers

# Criteria for Evaluating the Application

## *Section V of the FOA*

### ■ Core Review Criteria

- ❖ Significance
- ❖ Investigators
- ❖ Innovation
- ❖ Approach
- ❖ Environment

➤ Assign a numerical score between 1-9

### ■ Additional Review Criteria

- ❖ Protection of Human Subjects
- ❖ Inclusion of Women, Minorities, and Individuals Across the Lifespan
- ❖ Vertebrate Animals
- ❖ Biohazards

➤ Should be considered in determining the Overall Impact/Priority score

**OVERALL IMPACT** – The likelihood for the research education program to exert a sustained, powerful influence on the activities involved

➤ An Overall Impact Score (1-9 scale) is assigned to each application

### ■ Additional Review Considerations

- ❖ Foreign Institution, Select Agent, Resource Sharing Plans, Authentication of Key Biological and/or Chemical Resources, and Budget

➤ Should **NOT** be considered in determining the Overall Impact Score



# Overall Impact Score Guidance

## Overall Impact:

The likelihood for a project to exert a sustained, powerful influence on research field(s) involved

Overall Impact	High			Medium			Low		
Score	1	2	3	4	5	6	7	8	9

## Evaluating Overall Impact:

Consider the 5 criteria: significance, investigator, innovation, approach, environment (weighted based on reviewer's judgment) and other score influences, e.g. human subjects, animal welfare, inclusion plans, and biohazards

e.g. Applications are addressing a problem of high importance/interest in the field. May have some or no weaknesses.

e.g. Applications may be addressing a problem of high importance in the field, but weaknesses in the criteria bring down the overall impact to medium.

e.g. Applications may be addressing a problem of moderate importance in the field, with some or no weaknesses

e.g. Applications may be addressing a problem of moderate/high importance in the field, but weaknesses in the criteria bring down the overall impact to low.

e.g. Applications may be addressing a problem of low or no importance in the field, with some or no weaknesses.

5 is a good medium-impact application, and the entire scale (1-9) should always be considered.



# Weaknesses that Affect Overall Impact Score

- Failure to adequately describe the significance of the proposed work
- Lack of convincing scientific rationale for the study
- Lack of focus in the Specific Aims
- Unfocused research plan, unrealistically large amount of work
- Insufficient expertise for the work proposed or failure to use expertise of people recruited to participate
- Insufficient preliminary data and experimental details
- Lack of knowledge of published relevant work
- Failure to address experimental problems and alternative approaches
- Not documenting necessary resources and access to the resources

## What to Do After Review, if Not Funded

- Carefully read the Summary Statement
- Talk to your Program Officer after you have read the summary statement
- Discuss plans for addressing identified weaknesses with colleagues and mentor(s)
- Resubmit your application addressing reviewers' critiques