

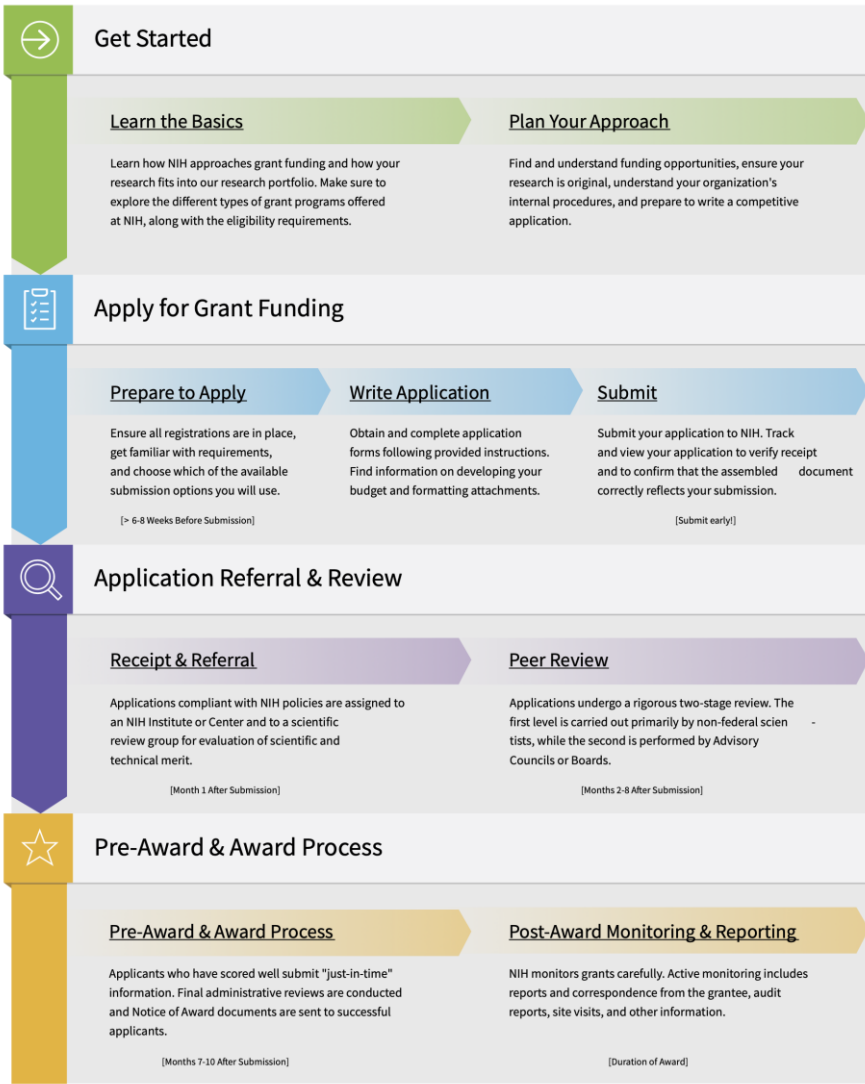
NIH Funding Opportunities

October 30th, 2019

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NIH Grant mechanisms



Workshop Outline

- Introduction R research grants
- Overview application of R01 and R21
- Submission process
- Peer review
- Re-submission process

Navigating the NIH landscape



Get Started

Learn the Basics

Learn how NIH approaches grant funding and how your research fits into our research portfolio. Make sure to explore the different types of grant programs offered at NIH, along with the eligibility requirements.

Plan Your Approach

Find and understand funding opportunities, ensure your research is original, understand your organization's internal procedures, and prepare to write a competitive application.

NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

The goals of the agency are:

- to foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health;
- to develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease;
- to expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research; and
- to exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.



Researcher working with a microscope iStock

My research is
not clinical or
has no direct
disease
application:
is NIH for me?



NIH Institutes: Find the best match for your research

Health Information

Grants & Funding

News & Events

Research & Training

Institutes at NIH

About NIH

[Home](#) » [Institutes at NIH](#)

INSTITUTES, CENTERS, AND OFFICES

Institutes at NIH

[List of NIH Institutes, Centers, and Offices](#)

[Directors of NIH Institutes and Centers](#)

[NIH Institute and Center Contact Information](#)

[NIH Office of the Director](#)

List of NIH Institutes, Centers, and Offices



NIH Offices

NIH Office of the Director (OD)

The Office of the Director is the central office at NIH for its 27 Institutes and Centers. The OD is responsible for setting policy for NIH and for planning, managing, and coordinating the programs and activities of all the NIH components. OD program offices include the Office of AIDS Research and the Office of Research on Women's Health, among others.

Quick Links

[NCI](#)

[NEI](#)

[NHLBI](#)

[NHGRI](#)

[NIA](#)

[NIAAA](#)

[NIAID](#)

[NIAMS](#)

[NIBIB](#)

[NICHD](#)

[NIDCD](#)

[NIDCR](#)

[NIDDK](#)

[NIDA](#)

[NIEHS](#)

[NIGMS](#)

[NIMH](#)

[NIMHD](#)

[NINDS](#)

[NINR](#)

[NLM](#)

[CC](#)

[CIT](#)

[CSR](#)

[FIC](#)

[NCATS](#)

[NCCIH](#)

[OD](#)

Institute Research Priorities: Is your research plan in line?

Example: NIMH



MENTAL HEALTH INFORMATION

OUTREACH

RESEARCH

FUNDING

NEWS & EVENTS

ABOUT US

About the Director

Advisory Boards and Groups

Strategic Plan

Offices and Divisions

Budget

Careers at NIMH

Staff Directories

Getting to NIMH

Strategic Research Priorities Overview

Research Priorities for Strategic
Objective 1

Research Priorities for Strategic
Objective 2

Research Priorities for Strategic
Objective 3

Research Priorities for Strategic
Objective 4



- Strategic Objective 1: Define the mechanisms of complex behaviors
- Strategic Objective 2: Chart mental illness trajectories to determine when, where, and how to intervene
- Strategic Objective 3: Strive for prevention and cures
- Strategic Objective 4: Strengthen the public health impact of NIMH-supported research

These Research Priorities are guided by workgroup reports including those from: the [National Advisory Mental Health Council](#), such as the [Behavioral Assessment Methods for RDoC Constructs Council Report](#); [Opportunities and Challenges of Developing Information Technologies on Behavioral and Social Science Clinical Research](#), and the [National Advisory Mental Health Council Workgroup on Genomics](#); the [Interagency Autism Coordinating Committee Strategic Plan for Autism Spectrum Disorder Research](#); the [National Research Action Plan](#); the [Prioritized Research Agenda for Suicide Prevention](#); and, the [Brain Research through Advancing Innovative Neurotechnologies \(BRAIN\) Initiative 2025 Report](#).

Questions? Please [contact us](#).

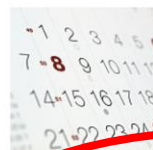
GRANTS & FUNDING

Did you know that NIH is the largest public funder of biomedical research in the world, investing more than \$32 billion a year to enhance life, and reduce illness and disability? NIH funded research has led to breakthroughs and new treatments, helping people live longer, healthier lives, and building the research foundation that drives discovery.



Grants Home Page

NIH's central resource for grants and funding information.



Due Dates

Grant applications and associated documents (e.g., reference letters) are due by 5:00 PM local time of application organization on the specified due date.



About Grants

An orientation to NIH funding, grant programs, how the grants process works, and how to apply.



Grants News/Blog

News, updates, and blog posts on NIH extramural grant policies, processes, events, and resources.



Loan Repayment

The NIH Loan Repayment Programs repay up to \$35,000 annually of a researcher's qualified educational debt in return for a commitment to engage in NIH mission-relevant research.



Find Funding

NIH offers funding for many types of grants, contracts, and even programs that help repay loans for researchers.



How to Apply

Instructions for submitting a grant application to NIH and other Public Health Service agencies.



Policy & Compliance

By accepting a grant award, grantees agree to comply with the requirements in the NIH Grants Policy Statement unless the notice of award states otherwise.



Contracts

Explore opportunities at NIH for research and development contract funding.

Search the NIH Guide

Quick Links



RePORT



eRA Commons



NIH Common Fund

Plan your application

Types of Grant Programs (activity codes)

<https://grants.nih.gov/grants/oer.htm>



HOME

ABOUT GRANTS

FUNDING

[Home](#) » [About Grants](#) » [Types of Grant Programs](#) » [Activity Codes Search Results](#)

Activity Codes Search Results

Search Activity Code Field within Results Below: [Search](#)

Matching Records: 244 Sorted by: Activity Code * [Export to](#)

Activity Code *	Category	Title	Description
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- [Research Grants](#)
 - (R series)
- [Career Development Awards](#)
 - (K series)
- [Research Training and Fellowships](#)
 - (T & F series)
- [Program Project/Center Grants](#)
 - (P series)

https://grants.nih.gov/grants/funding/funding_program.htm



Research Grants: R01, R21, R15, R03

R01	Research Projects	Research Project
R03	Research Projects	Small Research Grants
R13	Research Projects	Conference
R15	Research Projects	Research Enhancement Awards
R18	Research Projects	Research Demonstration and Dissemination Projects
R21	Research Projects	Exploratory/Developmental Grants

R15

- Supports small research projects conducted by undergraduate and graduate students and faculty at institutions that are not major recipients of NIH research funds
- Limited to 300K over 3 years
- PI can not hold any other NIH grant as PI at time of award notice

R01 and R21

NIH Research Project Grant Program (R01)

- Used to support a discrete, specified, circumscribed research project
- NIH's most commonly used grant program
- Generally awarded for 3 -5 years
- No specific dollar limit unless specified in FOA (but advance permission required for \$500K or more (direct costs) in any year)
- Utilized by all ICs

NIH Exploratory/Developmental Research Grant Award (R21)

- Encourages new, exploratory and developmental research projects by providing support for the early stages of project development. Sometimes used for pilot and feasibility studies.
- No preliminary data is generally required
- Limited to up to two years of funding
- Combined budget for direct costs for the two year project period usually may not exceed \$275,000.
- Most ICs utilize



Prepare to Apply



Apply for Grant Funding

Prepare to Apply

Ensure all registrations are in place, get familiar with requirements, and choose which of the available submission options you will use.

[> 6-8 Weeks Before Submission]

Write Application

Obtain and complete application forms following provided instructions. Find information on developing your budget and formatting attachments.

Submit

Submit your application to NIH. Track and view your application to verify receipt and to confirm that the assembled document correctly reflects your submission.

[Submit early!]

Contact Program Officer:
receive feedback for fit with
institute, and receive input for fit
with study section (more later)

Contact RASP: Start submission-
process early (especially if co-PI or
subcontract)

The sooner the better!
>2-3 months



Write the application



Apply for Grant Funding

Prepare to Apply

Ensure all registrations are in place, get familiar with requirements, and choose which of the available submission options you will use.

[> 6-8 Weeks Before Submission]

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[Submit early!]

New (A0)

Fixed Submission Deadlines

Resubmission (A1)

R01

February 5	June 5	October 5
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March 5	July 5	November 5
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R21

February 16	June 16	October 16
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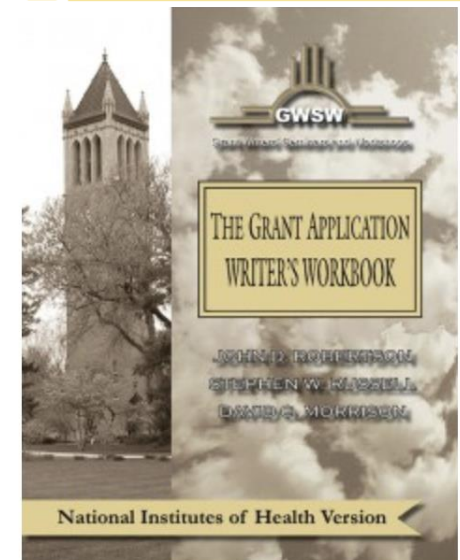
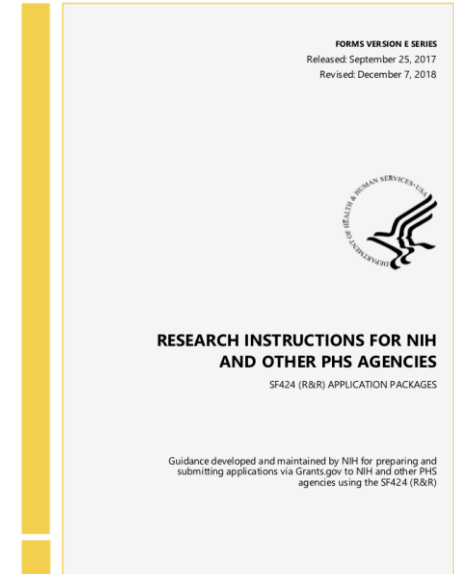
March 16	July 16	November 16
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Major elements

- **Specific Aims Page**
- **Title**
- **Research Strategy**
- **Biographical Sketch**
- **Facilities & Other Resources**
- **Budget and budget justification**
- **Equipment**
- **Human Subjects /Vertebrate animals**
- **Select agent research**
- **Resource sharing plan**
- **Authentication of key biological/chemical resources**
- **Summary/abstract**
- **Project narrative**
- **Cover letter**
- **Letters of support**

Before you start writing:

- Find the funding opportunity announcement and all relevant forms
- Use writing support tools
 - NIH website (podcasts)
 - KSU CAS and RASP
- Find what peer reviewers are looking for
- Are you a new (never had substantial NIH funding) or early stage (<10 years past terminal degree) investigator
 - Receive special consideration



Write for success: Format and style

- **Follow the formatting instructions !**
- **Reviewers read on screen (and sometimes print)**
- **Section and subsection headings**
- **Paragraphing**
 - Use bold, underline, italic sparingly
- **Spare, simple, clear, direct style to tell your “story”**
 - Clear, simple declarative sentences
 - Brevity! (R01: 12 pages; R21: 6 pages)
- **Do not use clichés and “empty generalities”**
 - “state-of-the-art research is expected to advance the field significantly”
- **Avoid use of nouns as adjectives**
- **Avoid use of “weak” qualifying words**
 - if, try, hope, should, may,
 - Whether



Write for success: Time management and Feedback

Time management:

- Lead time before submission deadline
- Quality time while preparing the proposal
- **Use a writing schedule**
- **Use set-aside time blocks**

Feedback:

- **Use a review network (feedback from experts)**
 - At all stages of the preparation (idea, specific aims page, research strategy, full proposal)

Note: contact CAS Writing Support

<https://www.kent.edu/cas/develop-proposals>



Title

- The title should emphasize the product of the research (the pay-off, not the process)
- Maximally informative and convey the novelty of your idea
- Do not rush the title:
 - take time and effort
 - to capture the attention of the reviewers



Specific Aims section (1 page)

- **THE most important page of your proposal**
- **Provides the conceptual framework**
 - Needs to include everything in your proposal that is important and exciting, but without details
 - Needs to have a flow of logic
 - Needs to convey the significance and innovation
 - Needs to generate enthusiasm from all reviewers

Specific Aims section

Introductory paragraph

- Frame the subject of the proposal
- **Opening Sentence**
- **Current knowledge**
- **Gap in knowledge/lack of something**
- **Statement of need and consequences of not meeting that need**

What, why, who paragraph

- Convince reviewer that results will meet the need
- **Long term goal;**
- **Overall objective**
- **Central hypothesis**

Specific Aims paragraph

- How you will test the central hypothesis

Pay-off paragraph

- Explain what is the return on investment
- **Expected outcomes**; positive impact

You will spend a very large portion of time on this 1 page (40-60% of grant writing time)

Research Strategy

R01: 12 pages; R21: 6 pages

- **Significance**

- Importance of the problem or critical barrier to be addressed
- Rigor of the prior research supporting the aims (published and unpublished)
- Significance of the expected research contribution

- **Innovation**

- Least understood of the five core-review criteria
- How the application challenges and seeks to shift current research or clinical practice paradigms
- Describe novel concepts, approaches or methodology, instrumentation, or interventions or the advantage over current concepts, approaches or methodology, instrumentation, or interventions



Rigor and Reproducibility

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[POLICY & COMPLIANCE](#)
[NEWS & EVENTS](#)
[ABOUT OER](#)

g Reproducibility through Rigor and Transparency

Enhancing Reproducibility through Rigor and Transparency

The information provided on this website is designed to assist the extramural community in addressing rigor and transparency in NIH grant applications and progress reports. Scientific rigor and transparency in conducting biomedical research is key to the successful application of knowledge toward improving health outcomes.

Definition

Scientific rigor is the strict application of the scientific method to ensure unbiased and well-controlled experimental design, methodology, analysis, interpretation and reporting of results.

Goals

The NIH strives to exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science. Grant applications instructions and the criteria by which reviewers are asked to evaluate the scientific merit of the application are intended to:

- ensure that NIH is funding the best and most rigorous science,
- highlight the need for applicants to describe details that may have been previously overlooked,
- highlight the need for reviewers to consider such details in their reviews through updated review language, and
- minimize additional burden.



Guidance: Rigor and Reproducibility in Grant Applications

Learn how to address rigor and reproducibility in your grant application and discover what reviewers are looking for as they evaluate the application for scientific merit.



Resources for Preparing Your Application

Learn how to prepare a rigorous application with select excerpts of rigor from awarded applications, authentication plan examples, and resources like the experimental design assistant (EDA), guidance on sample size calculation, and more.



Training and Other Resources

Resources and training on many aspects of rigor and reproducibility, including sex as a biological variable, research methods, reviewer guidance and more.



Notices, Blog Posts, and References

We are continuously working to enhance scientific rigor and transparency in biomedical research. [Learn more](#) about the timeline of our efforts.

Workshop
December 11th
12-1 pm

<https://grants.nih.gov/policy/reproducibility/index.htm>



Research Strategy

Approach:

- **Each Aim:**
 - Introduction
 - Research Design
 - Expected outcomes
 - Potential problems and alternative strategies
 - Timeline and benchmarks for success
 - Future Directions



Research Strategy

- **Consideration of relevant biological variables**
 - Sex: full consideration requires more than just inclusion of both sexes

<http://www.womenshealth.northwestern.edu/sex-inclusion>



HOME » PROGRAMS & RESOURCES » SEX INCLUSION AT NORTHWESTERN UNIVERSITY
SEX INCLUSION AT NORTHWESTERN UNIVERSITY



Welcome to the Sex-Inclusion Toolbox

In January of 2016, the NIH established a policy which requires the consideration of sex as a biological variable in biomedical and preclinical research. This policy marks a fundamental shift in the way researchers must evaluate sex in their experimental design. The WHRI established the **Sex-Inclusion Toolbox** to support and engage investigators who are currently, or interested in, conducting sex-inclusive research.

Learn how sex-inclusive research drives new discovery and improves the health and well-being of all from WHRI Director, Dr. Teresa Woodruff.



- Getting Started
- Benefits of Using the Sex-Inclusion Toolbox
- Ways to Use the Sex-Inclusion Toolbox
- Find Out Why Sex Matters in Research

<https://orwh.od.nih.gov/sex-gender>



HOME » SEX & GENDER
Sex & Gender

NIH is committed to improving health by supporting the rigorous science that drives medical advances. Sex/gender influence health and disease, and considering these factors in research informs the development of prevention strategies and treatment interventions for both men and women.

"Sex" refers to biological differences between females and males, including chromosomes, sex organs, and endogenous hormonal profiles. "Gender" refers to socially constructed and enacted roles and behaviors which occur in a historical and cultural context and vary across societies and over time. All individuals act in many ways that fulfill the gender expectations of their society. With continuous interaction between sex and gender, health is determined by both biology and the expression of gender.

Including women and diverse populations in research is not just a matter of enrolling women and diverse populations in clinical studies but requires changing norms of how research is designed, long before a volunteer signs up for a study.

Accordingly, NIH is calling on scientists to take a deliberate approach in considering sex and gender in research to make sure that women and men get the full benefit of medical research. By instructing researchers to take these factors into account as they develop their research questions, design experiments, analyze data, and report results, NIH continues to deliver the kind of rigorous science that drives the medical advances we need.



Sex & Gender

- NIH Policy on Sex as a Biological Variable (SABV)
- Sex/Gender Influences in Health and Disease
 - Methods and Techniques for Integrating Sex into Research
 - Reading Room: News and Journal Articles about Studying Sex/Gender
- Research Spotlights
 - Online Course on Sex/Gender Differences

Related Resources

- Sex and Gender in Systematic Reviews Planning Tool
- ORWH Mission & History
- Sex-Specific Reporting of Scientific Research
- An NIH Outreach Toolkit: How to Engage, Recruit, and Retain Women in Clinical Research

Director's Messages

- Guest Blog—Intimate Partner Violence: Raising Awareness, Taking Action

Biosketch and Facilities

- **Normally not “score drivers”, but extremely important to demonstrate likelihood of success**
- **Biosketch**
 - Personal statement and contributions:
 - Demonstrate that you (PI) can lead this proposal to success and that you can manage the team
- **Facilities**
 - Demonstrate that your environment will contribute to success

Budget

- **Contact RASP as soon as you *think you may* be submitting (weeks ahead of deadline)**
- **Work with them on your budget as soon as you have a research plan**
 - Modular budget (\$250 K/year)
 - Internal budget; can be restructured post-award
 - Non-modular budget (>250K, subcontracts)
 - Detailed itemized budget to reviewers
- **Budget Justification**
 - Budget must be perceived by reviewers to be appropriate for success of the proposed research



Coverletter: Choice of study section

Study Sections

Applications are reviewed in study sections (Scientific Review Group, SRG). Integrated Review Groups (IRGs) are clusters of study sections based on scientific discipline.

Chartered Study Sections

Reviews most investigator-initiated research applications (R01, R03, R21, R15, and Ks). Chartered study sections are those with both regular and temporary members.

Regular Standing Study Sections and Continuing SEPs

Find a Study Section

Enter Keyword or Title



- or -

Use our Guided Study Section Selector >

Filter Results:

Q Search

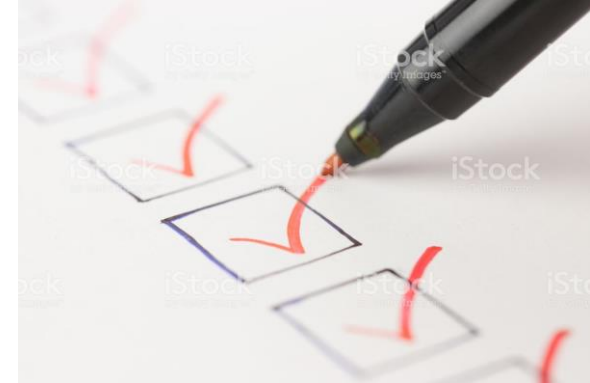
Study Section ^	Study Section Description	Scientific Review Officer
ACTS	Arthritis, Connective Tissue and Skin Study Section	Dr. Robert Gersch
AICS	Atherosclerosis and Inflammation of the Cardiovascular System Study Section	Dr. Natalia Komissarova
ANIE	Acute Neural Injury and Epilepsy Study Section	Dr. Elyse Schauwecker
APDA	Adult Psychopathology and Disorders of Aging Study Section	Dr. Serena Chu
ARM	Addiction Risks and Mechanisms Study Section	Dr. Kristen Prentice
ASG	Aging Systems and Geriatrics Study Section	Dr. Inese Beitins
AUD	Auditory System Study Section	Dr. Janita Turchi
BACP	Bacterial Pathogenesis Study Section	Dr. Marci Scidmore
BBM	Biochemistry and Biophysics of Membranes Study Section	Dr. Nuria Assa-Munt
BCHI	Biomedical Computing and Health Informatics Study Section	Dr. Karen Nieves Lugo
BDMA	Biodata Management and Analysis Study Section	Dr. Wenchi Liang
BGES	Behavioral Genetics and Epidemiology Study Section	Dr. Ramona Gianina Dumitrescu
BINP	Brain Injury and Neurovascular Pathologies Study Section	Dr. Alexander Yakovlev
BMBI	Biomaterials and Biointerfaces Study Section	Dr. Joseph Mosca
BMCT	Basic Mechanisms of Cancer Therapeutics Study Section	Dr. Lambratu Rahman Sesay
BMIO	Behavioral Medicine, Interventions and Outcomes Study Section	Dr. Lee Mann
BMIT-A	Biomedical Imaging Technology A Study Section	Dr. Songtao Liu
BMIT-B	Biomedical Imaging Technology B Study Section	Dr. Mehrdad Mohseni
BMRD	Biostatistical Methods and Research Design Study Section	Dr. Chittari Shivakumar

WORKING WITH RESEARCH AND SPONSORED PROGRAMS (RASP) TO PREPARE YOUR PROPOSAL

Proposal Preparation Resources

- **Sponsored Programs will:**

- Review Agency Guidelines
- Develop Budget
- Provide Assistance with budget narrative (financial language)
- Compliance checking
- Complete and provide assistance with forms
- Electronic Submissions Support (FASTLANE, Research.gov, Grants.gov, Proposal Central, PAMS, NSPIRE, eBRAP, AHA, NMSS FLUXX, *and others!*)
- Provide KUALI Assistance



Sponsored Programs



Lori
Burchard



Beverly
Robertson



Diana
Skok



Mark
van't Hooft



Susan
Goehring



Monica
Morson



Angelina
Steiner



Charmaine
Streharsky



Susan
Tribuzzo



Kent State University

Steps to Ensure a Successful Proposal Submission

10+ Business Days Before Deadline

Principal Investigator (PI):

- **ASAP:** Contact OSP with intent to submit and provide necessary info (link to RFP, collaborators, subawards)
- Inform department/college of intent to submit proposal
- If applicable, work with responsible unit(s) for any cost-share on proposal

Sponsored Programs (OSP)

- Create Kualo proposal record and grant PI access
- If applicable, contact proposal subawardees for budget and documentation

PI & OSP:

- Review proposal guidelines
- Develop budget in Kualo

5 Business Days Before Deadline

PI:

- Complete Kualo tasks (questionnaire, science code, research designation, others as needed)
- All named personnel complete Kualo Certification

PI & OSP:

- Finalize budget
- Provide/upload documents as available

OSP:

- Review proposal for compliance with agency guidelines, institutional (and other applicable) policies
- Route proposal for institutional approvals

2 Business Days Before Deadline

PI & OSP:

- Finalize all proposal documents

OSP:

- Secure internal approvals
- Review final proposal
- Submit final proposal
- Review submitted proposal and submit updates or corrections as needed

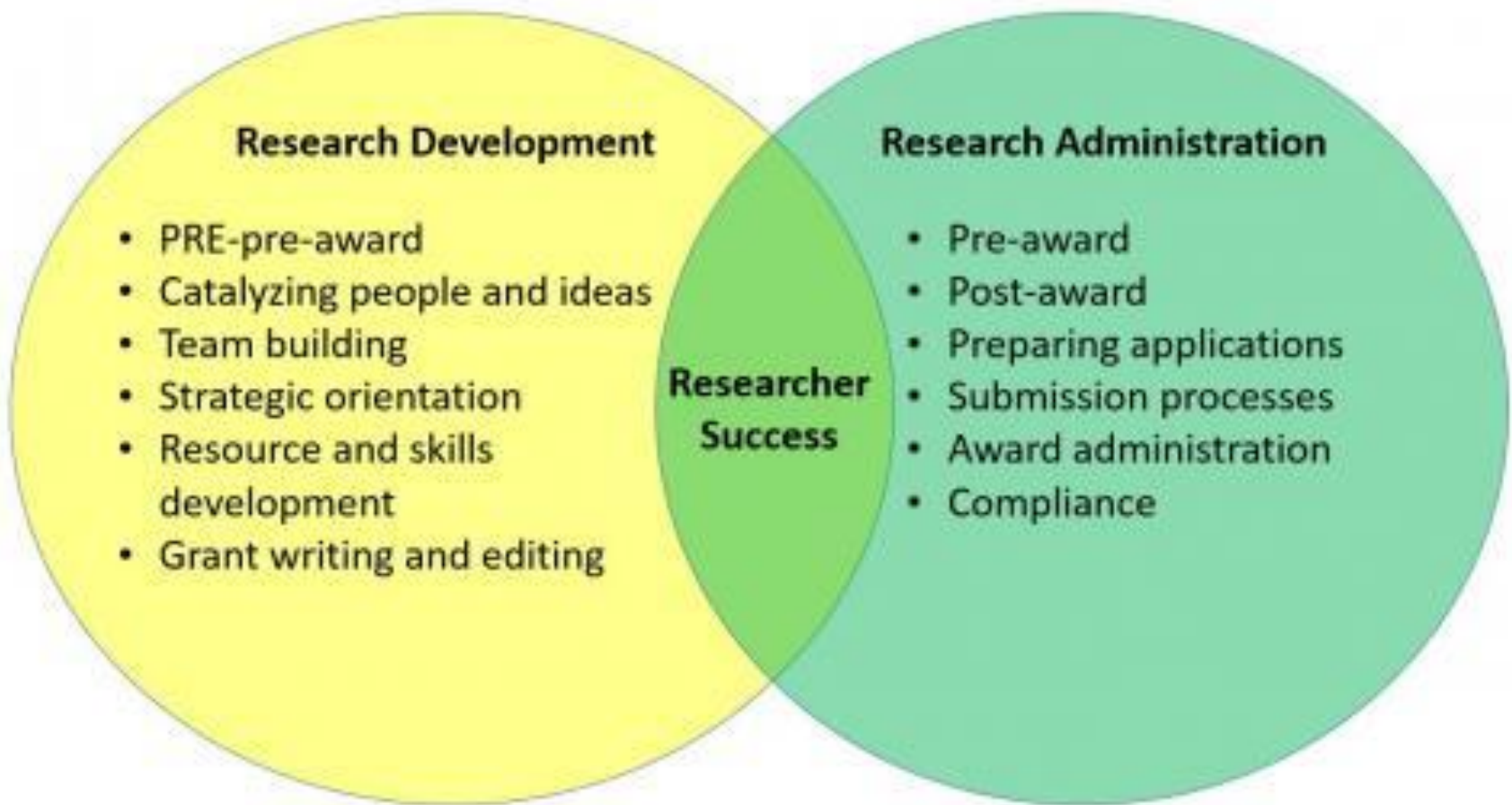
PI:

- If applicable, log into agency system to view submitted proposal
- Contact Research Safety & Compliance for any special review

Questions? Please contact us!

WWW.KENT.EDU

Kent State University | Office of Sponsored Programs | 207 Schwartz Center | 330-672-2070 | dskok@kent.edu



Research Development and Research Administration
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<https://www.kent.edu/research/research-faculty-development>

Ensuring High Quality Proposals

- **Team building/matchmaking**
- **One on One consulting/editing**
- **Internal review of proposals**
- **External review of proposals**
- **Resource library**
- **Passport to grant success program**

<https://www.kent.edu/research/research-faculty-development>

Passport to Grant Success – Pilot



- **Contact program officer**
- **Meet with OSP to discuss budget**
- **Seek internal or external review (at least 3 weeks before deadline)**
- **Submit 4 days prior to deadline to OSP; submit to agency 1 day before deadline**
- **\$1000 into faculty incentive account**

<https://www.kent.edu/research/research-faculty-development>

I WROTE MY PROPOSAL, SO WHAT HAPPENS NOW?

Sponsored Programs (what do they do with it?)



- Use Kuali to submit to Grants.gov
- Check compliance with funding opportunity and guidelines
- Verify completeness and consistency (budget justification, biosketches, etc.)
- Ensure all documents are loaded in appropriate format/font/naming conventions
- Any issue results in an error and rejection of the grant application



Why it is important to not wait until the last minute

Subject

FW: ACTION REQUIRED TO COMPLETE SUBMISSION - Application Errors and Warnings

- **Sloppy grants get scored poorly: typographical errors and inconsistencies will result in a worse score**
- **For standard deadlines, RASP staff have a list of proposals they are submitting that day**
- **Other KSU researchers' grants are put on hold to submit one at the last minute**
- **Network slowdowns (internal and external)**
- **No time to address errors or to double check the assembled package**



MY APPLICATION WAS
SUCCESSFULLY SUBMITTED,
NOW WHAT?



CELEBRATE



CENTER FOR SCIENTIFIC REVIEW

- Application will be assigned to a study section (you can request)
- Scientific Review Officer (SRO) assembles reviewers, identifies conflicts, and assigns 3 reviewers to each application (you can view meeting rosters – cite pertinent members)
- ~3-4 weeks prior to the meeting reviewers get their assignments
 - ~9 applications, mix of mechanisms and assignments (1st, 2nd, 3rd reviewer)



Reviewers

- **Provide an expert, thorough, fair, and objective review of the scientific and technical merits of applications**
 - Overall Impact – paragraph emphasizing score-driving strengths and weaknesses
 - 5 core review criteria – strength and weakness bullets
 - Significance
 - Investigators
 - Innovation
 - Approach
 - Environment



Score each criterion independently plus an overall score

	SCORE	DESCRIPTOR
HIGH	1	Exceptional
	2	Outstanding
	3	Excellent
MEDIUM	4	Very Good
	5	Good
	6	Satisfactory
LOW	7	Fair
	8	Marginal
	9	Poor

SCORED REVIEW CRITERIA

Reviewers will consider each of the five review criteria below in the determination of scientific and technical merit, and give a separate score for each.

1. Significance

Does the project address an important problem or a critical barrier to progress in the field? Is the prior research that serves as the key support for the proposed project rigorous? If the aims are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

- Focus on the importance of the research question, **assuming that all other aspects will be successful**. Any reservations you have about approach, investigators, etc., may temper your Overall Impact score, but the Significance score should be driven solely by importance of the question and the assumption that there are no flaws elsewhere.)
- Please be sure to specifically address **the rigor of the prior research**.

Strengths

-

Weaknesses

-

Significance

- **Does the project address an important problem or a critical barrier to progress in the field? Is the prior research that serves as the key support for the proposed project rigorous? If the aims are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?**



Significance (continued)

- Focus on the importance of the research question, assuming that all other aspects will be successful. Any reservations you have about approach, investigators, etc., may temper your Overall Impact score, but the Significance score should be driven solely by importance of the question and the assumption that there are no flaws elsewhere.
- Please be sure to specifically address the rigor of the prior research.



Investigator(s)

- Are the PD/PIs, collaborators, and other researchers well suited to the project? If Early Stage Investigators or those in the early stages of independent careers, do they have appropriate experience and training? If established, have they demonstrated an ongoing record of accomplishments that have advanced their field(s)? If the project is collaborative or multi-PD/PI, do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate for the project?

Innovation

- **Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions? Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense? Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?**



Approach

- Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project? Have the investigators included plans to address weaknesses in the rigor of prior research that serves as the key support for the proposed project? Have the investigators presented strategies to ensure a robust and unbiased approach, as appropriate for the work proposed? Are potential problems, alternative strategies, and benchmarks for success presented? If the project is in the early stages of development, will the strategy establish feasibility and will particularly risky aspects be managed? **Have the investigators presented adequate plans to address relevant biological variables, such as sex, for studies in vertebrate animals or human subjects?**



Approach (continued)

- If the project involves human subjects and/or NIH-defined clinical research, are the plans to address 1) the protection of human subjects from research risks, and 2) the inclusion (or exclusion) of individuals on the basis of sex/gender, race, and ethnicity, as well as the inclusion (exclusion) of individuals of all ages (including children and older adults), justified in terms of the scientific goals and research strategy proposed?
- Please be sure to include a comment that explicitly addresses the level of scientific rigor (do they provide enough information to convince you they have a robust and unbiased approach?).
- For single-sex studies, you should consider whether the scientific justification is convincing to you.



Environment

- **Will the scientific environment in which the work will be done contribute to the probability of success? Are the institutional support, equipment and other physical resources available to the investigators adequate for the project proposed? Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?**

Overall Impact

Please provide an overall impact paragraph to articulate your assessment of the “*likelihood for the project to exert a sustained, powerful influence on the research field(s) involved.*” Your paragraph should:

- Introduce the general objective of the project in one or two sentences
- State the level of impact the application will have and why (what is the major contribution/advance to be gained?).
- Identify the major score-driving factors that informed your assessment
- Explain how you balanced/combined/weighted the various criteria to arrive at the overall impact score.



Considerations from the reviewer standpoint

- As mentioned, 2-3 weeks to review a full slate of applications
- “Normal” work doesn’t stop during this time, so reviews are done late at night and on weekends
- Very little, if any, tolerance for typos and poor English
- **Style is important; figures; white space**
 - Consistency between components
 - Tell the reviewer why existing literature and proposed research is rigorous
 - Innovation bullets



Review Process

- ~1 week before the in-person meeting (study section), reviewers post their preliminary scores
- Read-phase – reviewers look at other reviews, focusing on discrepant scores
- Reviewers can change their scores if they are convinced by the other reviewers' comments
- End of the read-phase determines whether a proposal will be discussed (based on average score)



Study section meeting

- Reviewers arrive the night beforehand; start at 8AM
- Based on preliminary scores, the top half of proposals are scheduled for discussion: some exceptions
- Bottom half are non-discussed – you still get individual reviewer comments but no summary of discussion
- First reviewer presents the study and reasons for his/her score
- Second and third talk about what influenced their score

Study section meeting (continued)

- **Following third reviewer, full committee discusses**
 - Unlikely that the remainder of the committee read the full proposal – Aims are critical
- **After discussion, Chair summarizes and revisits final scores of reviewers**
- **Best and worst score following discussion determine the range of scores for the committee to score between**
 - Opportunity to score out of range
- **End up with an average score of all members**



Post-meeting



- **Reviewers asked to edit reviews to be consistent with changes in comments**
- **Summary statements**
 - If discussed, SRO prepares a summary of discussion highlighting the major points of the discussion.
- **Depending on score you may be asked for Just In Time documents, or you want to prepare for a revision**



Revising your Proposal

- Talk to Program Officer – they were able to listen in to the review
- Resubmit as soon as you can (but be realistic about addressing concerns) in order to optimize the likelihood of the same reviewers.
- Spend a lot of time on your Introduction to Resubmission



Introduction to Resubmission



- **1-page to respond to 12 pages of reviewer comments**
- **Many styles**
 - Highlight acknowledged strengths in prior version
 - Not always able to provide a point by point response: Identify common concerns
 - Identify changes in document with line in the margin
 - Be polite, “we weren’t clear...”
 - OK to argue a response but do so in a very respectful and well-defended way

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