Overview of Clinical Research
How to get Research Support

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Resources

- The Grant Application Writer's Workbook by Robertson, Russel and Morrison. National Institute of Health Version (2023)
- Designing Clinical Research by Browner, Neman, Cummings, Grady, Huang, Kanaya, and Pletcher. 5th Edition. Lippincott Williams & Wilkins.

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National Institutes of Health

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 the burdens of illness and disability. The goals of the agency are:

- Foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health;
- Develop, maintain, and renew scientific human and physical resources that will ensure the Nation's capability to prevent disease;
- 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
- Exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

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Electronic Research Administration (eRA Commons)

The eRA Commons is an online interface where signing officials, principal investigators, trainees and post-docs at institutions/organizations can access and share administrative information relating to research grants.

https://**commons.era**.nih.gov

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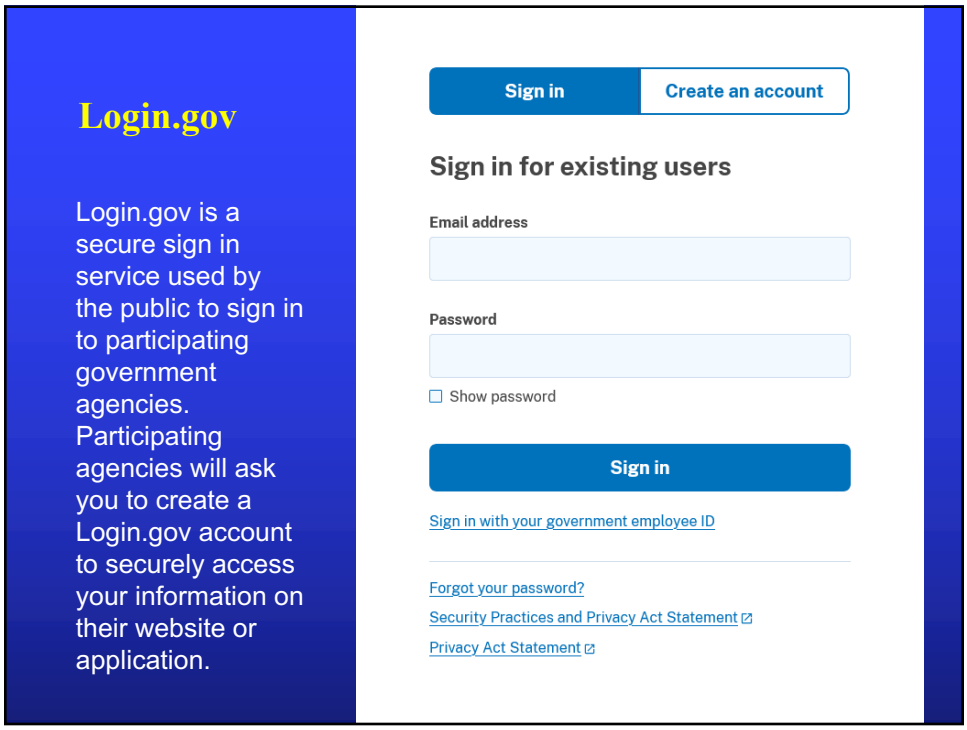
Login.gov
Login.gov is a secure sign in service used by the public to sign in to participating government agencies. Participating agencies will ask you to create a Login.gov account to securely access your information on their website or application.
Sign in
Create an account
Sign in for existing users
Email address
Password
Show password
Sign in
Sign in with your government employee ID
Forgot your password?
Security Practices and Privacy Act Statement
Privacy Act Statement

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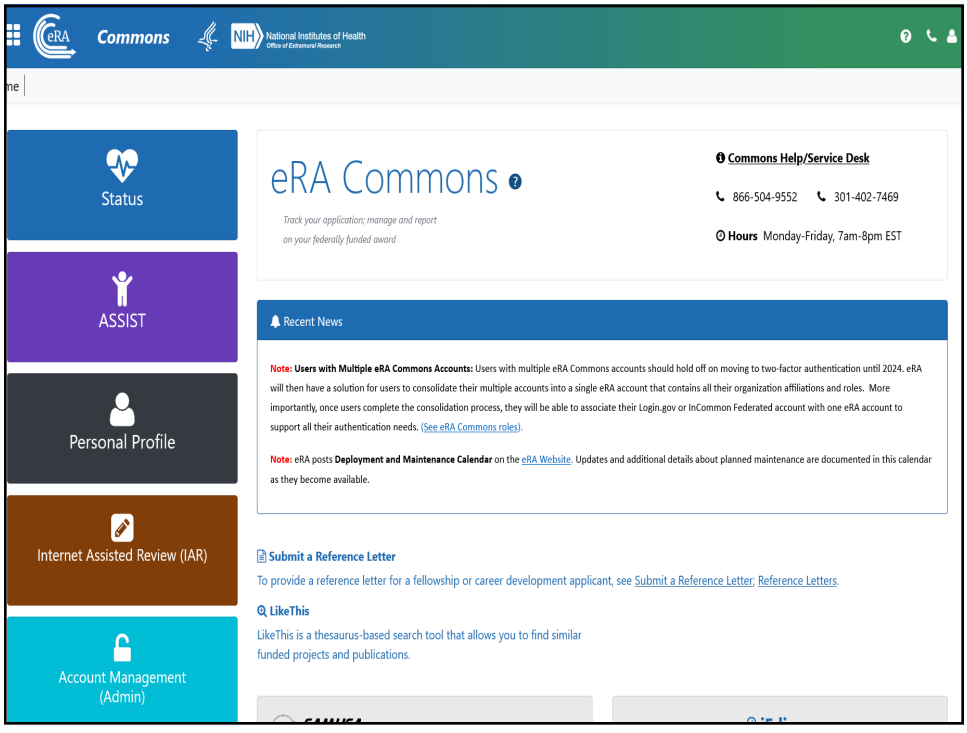
eRA Commons
National Institutes of Health
Status
ASSIST
Personal Profile
Internet Assisted Review (IAR)
Account Management (Admin)
eRA Commons
Track your application; manage and report on your federally funded award
Commons Help/Service Desk
866-504-9552
301-402-7469
Hours Monday-Friday, 7am-8pm EST
Recent News
Note: Users with Multiple eRA Commons Accounts: Users with multiple eRA Commons accounts should hold off on moving to two-factor authentication until 2024. eRA will then have a solution for users to consolidate their multiple accounts into a single eRA account that contains all their organization affiliations and roles. More importantly, once users complete the consolidation process, they will be able to associate their Login.gov or InCommon Federated account with one eRA account to support all their authentication needs. (See eRA Commons roles).
Note: eRA posts Deployment and Maintenance Calendar on the eRA Website. Updates and additional details about planned maintenance are documented in this calendar as they become available.
Submit a Reference Letter
To provide a reference letter for a fellowship or career development applicant, see Submit a Reference Letter; Reference Letters.
LikeThis
LikeThis is a thesaurus-based search tool that allows you to find similar funded projects and publications.

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Summary of Research Award Programs*

Activity Code	Program Description
R01	Research Project
R03	NIH Small Grant Program
R13	Conference
R15	NIH Academic Research Enhancement Award (AREA)
R21	NIH Exploratory/Developmental Research Grant Award
R25	Education Projects
U01	Research Project – Cooperative Agreements
U13	Conference - Cooperative Agreements
G07	Resources Improvement Grant
S10	Biomedical Research Support Shared Instrumentation Grants
DP1	NIH Director's Pioneer Award (NDPA)

*This is not a comprehensive list of activity codes.

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

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Research Designs

Observational
- Cross-sectional
- Case Control
- Cohort

Experimental
- Clinical Trial
- Group Randomized Trial

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SF 424 Application

To apply for funding at the NIH use the SF 424 application package

FORMS H application packages incorporate the latest versions of the federal-wide forms managed by Grants.gov and must be used on or before dates January 24, 2025

FORMS I application packages incorporate the latest versions of the federal-wide forms managed by Grants.gov and must be used on or after dates January 24, 2025

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

Follow the Directions – Follow the Directions

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Instructions for FORMS-I are not Yet Available

Application instructions for FORMS-I application packages will be posted on the How to Apply - Application Guide page no later than October 25, 2024.

This lecture will use the NIH format applicable for FORMS-H application since FORMS-I application instructions are not yet available.

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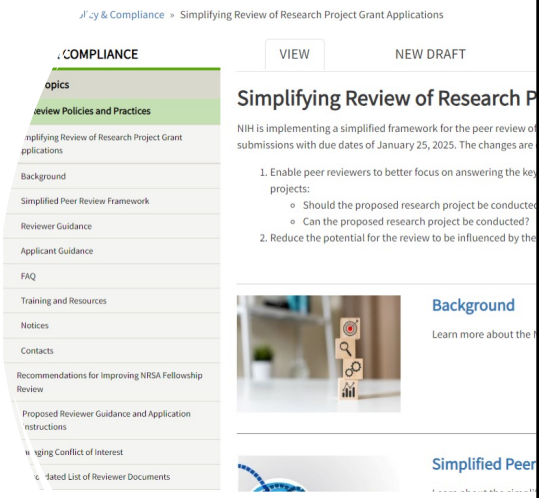
Public Website on Simplified Review Framework

- Development background
- Description of changes
- Guidance for reviewers
- Guidance for applicants
- Training and resources
- Notices and reports
- FAQs
- Contacts



grants.nih.gov/policy/peer/simplifying-review.htm

National Institutes of Health
Turning Discovery Into Health

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The Simplified Review Framework Reorganizes Five Regulatory Criteria into Three Factors

Before January 25, 2025

- Significance - scored
- Investigator(s) – scored
- Innovation – scored
- Approach – scored
- Environment - scored

On or after Jan 25, 2025 - Simplified Framework
(all considered in Overall Impact Score)

- Factor 1: Importance of the Research
  - Significance, Innovation
  - Scored 1-9
- Factor 2: Rigor and Feasibility
  - Approach (*also include Inclusions and Study Timeline for clinical trials*)
  - Scored 1-9
- Factor 3: Expertise and Resources
  - Investigators, Environment
  - Evaluated as appropriate or gaps identified; gaps require explanation
  - Considered in overall impact; no individual score

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The Simplified Review Framework Updates the Main Review Factors and Additional Criteria

MAIN REVIEW FACTORS – all affect Overall Impact score

- **Factor 1: Importance of the Research [scored]** - strengths/weaknesses
  Significance, Innovation
- **Factor 2: Rigor and Feasibility [scored]** - strengths/weaknesses
  Approach
- **Factor 3: Expertise and Resources [not scored** - drop down- appropriate, or identify gaps]
  Investigators, Environment

- Study Timeline (for clinical trial (CT) only)
- Inclusion of Women, Minorities, and Across the Lifespan

ADDITIONAL CRITERIA – not scored, but can affect Overall Impact score

- ~~Study Timeline (for CT only)~~
- Human Subject Protections (for Human Subjects (HS) research and Clinical Trials)
- ~~Inclusion of Women, Minorities, and Across the Lifespan (for HS and CT)~~
- Vertebrate Animal Protections
- Biohazards
- Resubmission/Renewal/Revisions

Plus: Reviewers briefly comment on Budget and Chem/Bio resources authentication plans

National Institutes of Health
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The Simplified Review Framework Reduces Additional Review Considerations

Most Additional Review Considerations **removed** from first-level peer review; responsibility will shift to awarding institute/center

Current	Simplified Framework
Additional Review Considerations (no effect on overall impact score)	**Additional Review Considerations (no effect on overall impact score)**
•Applications from Foreign Organizations	•Authentication of Key Biological and/or Chemical Resources
•Select Agent Research	•Budget and Period of Support
•Resource Sharing Plans	
•Authentication of Key Biological and/or Chemical Resources	
•Budget and Period of Support	

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List of Changes Under the Simplified Review Framework

Before January 25, 2025

Review Criteria (affects overall impact score)
- Significance [scored] – strengths/weaknesses
- Investigator(s) [scored] - strengths/weaknesses
- Innovation [scored] - strengths/weaknesses
- Approach [scored] - strengths/weaknesses
- Environment [scored] - strengths/weaknesses

Additional Review Criteria (concerns can affect Overall Impact Score)
- Human Subject Protections
- Inclusion of Women, Minorities, and Across the Lifespan
- Vertebrate Animal Protections
- Biohazards
- Resubmission/Renewal/Revisions

Additional review considerations (no effect on overall impact score)
- Applications from Foreign Organizations
- Select Agent Research
- Resource Sharing Plans
- Authentication of Key Biological and/or Chemical Resources
- Budget and Period of Support

On or After January 25, 2025

Review Criteria (affects overall impact score)
- **Factor 1: Importance of the Research**
- **[scored] - strengths/weaknesses**
  - **Significance, Innovation**
- **Factor 2: Rigor and Feasibility**
  - **[scored] - strengths/weaknesses**
  - **Approach**
  - **Inclusion of Women, Minorities, and Across the Lifespan**
  - **Study Timeline (for clinical trials)**
- **Factor 3: Expertise and Resources**
  - **[not scored - drop down- appropriate, gaps identified]**
  - **Investigators, Environment**

Additional Review Criteria (concerns can affect Overall Impact Score)
- **Human Subject Protections**
- **Vertebrate Animal Protections**
- **Biohazards**
- **Resubmission/Renewal/Revisions**

Additional review considerations (no effect on overall impact score)
- **Authentication of Key Biological and/or Chemical Resources**
- **Budget and Period of Support**

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Features of the SF424 (R&R)

- The SF424 (R&R) is an application form that is comprised of common data elements developed for use by Federal agencies funding **R**esearch and **R**esearch-Related programs
- Also provides a consistent electronic submission process through Grants.gov

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Features of the SF424 (R&R)

- SF424 (R&R) data is arranged in components
- Not all components will be used for every Funding Opportunity Announcement (FOA)
- Agencies "construct" application packages for each FOA
- The FOA will indicate which components are required and which are optional
- Each FOA will have the appropriate application package attached

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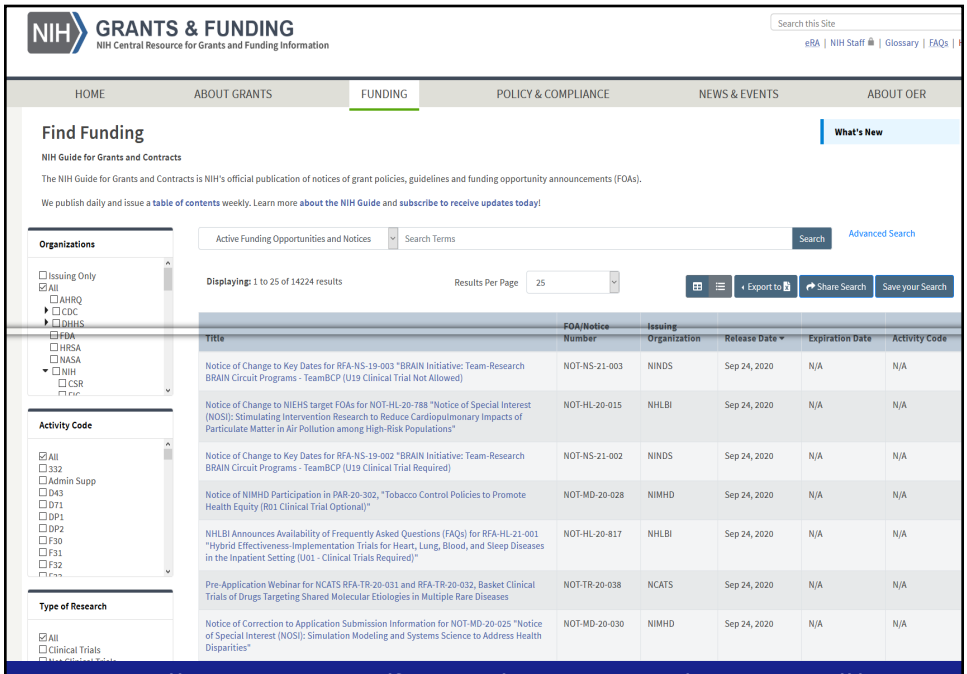

https://grants.nih.gov/funding/searchguide/index.html#/

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Parent Announcements (For Unsolicited or Investigator-Initiated Applications)

Parent announcements are broad funding opportunity allowing applicants to submit investigator-initiated applications for specific activity codes. They are open for up to 3 years and use standard due dates.

Not all NIH Institutes and Centers participate on all parent announcements. Before submitting your application, make sure the NIH Institute or Center that might be interested in your research is listed as a participating organization in the announcement.

The following Parent Announcements are available (sorted by Activity Code):

[Research (R) | Research Training (T) | Career Development (K) | Fellowships (F) | Admin Supplements | Post-award Administrative Action]

Research (R) Announcements

Activity Code(s)	Title	Announcement Number	Issuing Organization	Release Date	Open Date	Expiration Date
R01	NIH Research Project Grant (Parent R01 Clinical Trial Not Allowed)	PA-20-185	NIH	05/05/2020	05/05/2020	05/08/2024
R01	Research Project Grant (Parent R01 Basic Experimental Studies with Humans Required)	PA-20-184	NIH	05/05/2020	05/05/2020	05/08/2024
R01	Research Project Grant (Parent R01 Clinical Trial Required)	PA-20-183	NIH	05/05/2020	05/05/2020	05/08/2024
R03	NIH Small Research Grant Program (Parent R03 Clinical Trial Not Allowed)	PA-20-200	NIH	05/07/2020	05/16/2020	05/08/2024
R13	NIH Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed)	PA-21-151	NIH	02/10/2021	03/12/2021	01/08/2024

https://grants.nih.gov/grants/guide/parent_announcements.htm

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Features of the SF424 (R&R)

- A complete application to NIH will include a combination of (R&R) components & PHS 398 components
- The applicant **must** complete the application using the package attached to that particular FOA
- Applicants can *not* use any sample form packages or form packages from other announcements
- Applicants will complete data entry in all necessary components and upload appropriate attachments

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Features of the SF424 (R&R)

- SF424 (R&R) Components include:
  - SF424 (R&R)—*An application cover component*
  - Research & Related Project/Performance Site Location
  - Research & Related Other Project Information
  - Research & Related Senior/Key Person
  - Research & Related Budget
  - Research & Related Personal Data *(NIH will not use)*
  - R&R Subaward Budget Attachment Form
  - SBIR/STTR Information

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Features of the SF424 (R&R)

- NIH requires additional data collection to accommodate the unique information required for review of its biomedical research portfolio. Therefore, NIH has also developed agency-specific components (titled PHS 398):
  - PHS 398 Cover Letter File
  - PHS 398 Cover Page Supplement *(supplements the R&R Cover)*
  - PHS 398 Modular Budget
  - PHS 398 Research Plan

It's the OMB-cleared data collection instrument that gives NIH the authority to request these additional data elements

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Features of the SF424 (R&R)

- Application components include specific data fields as well as multiple attachments
- NIH requires PDF for text attachments
  - Attachments can be generated using any word processing software but will need to be converted to PDF before they can be attached to the application form

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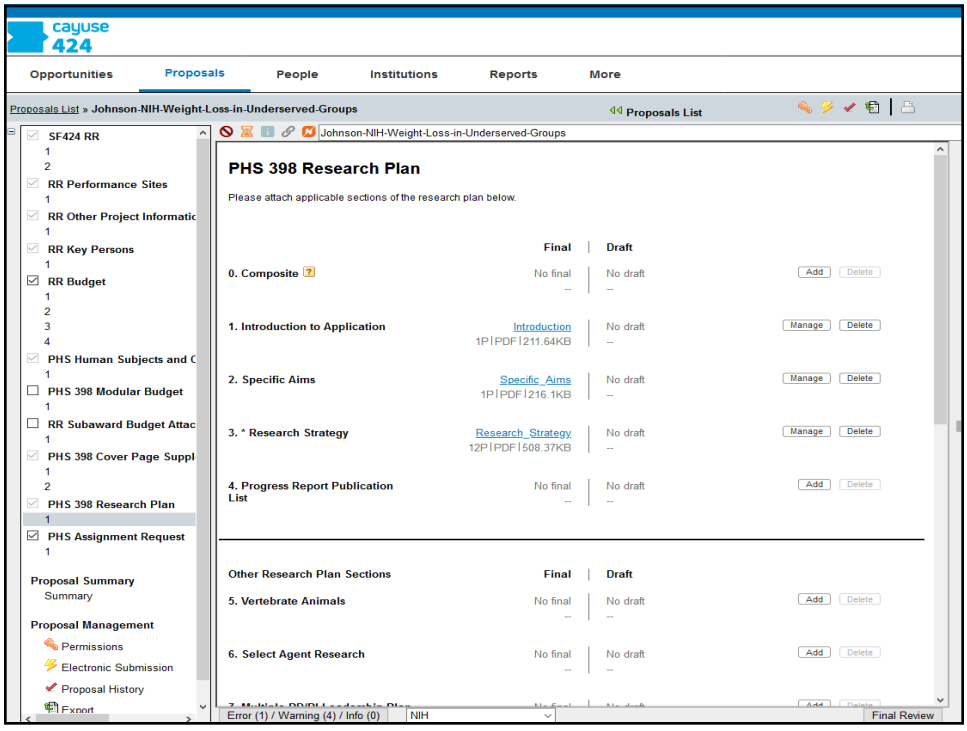

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SF 424 Application

Title of Application
- Descriptive
- 200 character length including spaces
- Revisions have the same title
- Helps direct your application

Cover letter
- Used to assign to review group
- Used to assign to institute or center

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SF 424 Application

Paper size – 81/2 x 11

Page Margins – one half inch

Standard single column format

Figures may be in color

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SF 424 Application

Font

11 point or larger in black font

Typeface

Arial	Linotype
Helvetica	Georgia
Palatino	

15 characters per sq inch

Single spaced

No headers or footers (these are system generated)

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SF 424 Application

PDF

When validating page limits, the eRA Commons will not count the white space created by breaking the text into separate files for uploading

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SF 424 (R&R) Application for Federal Assistance

Sections of SF 424 Application

Biographical Sketch

Project Summary / Abstract

Project Narrative

Bibliography and References Cited

Facilities and Other Resources

Equipment

Budget and Budget Justification

Planned Enrollment Report

Project / Performance Sites Locations

Cover letter

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SF 424 (R&R) Application for Federal Assistance

PHS 398 Research Plan

1. Introduction to Application (Resubmissions)
2. Specific Aims
3. Research Strategy
    a. Significance
    b. Innovation
    c. Approach
        i. Introduction
        ii. Research Design
        iii. Expected Outcomes
        iv. Potential Problems and Alternative Approaches
    d. Timeline

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SF 424 (R&R) Application for Federal Assistance

PHS 398 Research Plan

4. Progress Report Publication List
5. Protection of Human Subjects
6. Inclusion of Women, Minorities, and Across the Lifespan
7. Vertebrate Animals
8. Select Agent Research
9. Multiple PD/PI Leadership Plan
10. Consortium/ Contractual Arrangements
11. Letters of Support
12. Resource Sharing Plan
13. Appendix

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SF 424 (R&R) Application for Federal Assistance

Introduction – used with resubmissions (1 page)

Specific Aims (1 page)

- Goals of project
- Concise
- Feasible
- Expected outcomes (Primary and Secondary)
- Specific objectives – test hypothesis
- Safety concerns

Make sure your hypothesis is testable

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Specific Aims

Provides the overview of the entire project

Becomes the template for grant

Persuade reviewers that the project is important, feasible and will advance the state of the science

Aims should describe something you can measure

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Clinical Trial Specific Aims

- Background of Problem
- Overall approach
- Intervention
- Outcomes (Disease, Surrogate, etc)
- Type of Participant
- General purpose and specific purpose
- Parameters to be measured

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SF 424 (R&R) Application for Federal Assistance

Research Strategy (12 pages)

- Significance
  - Importance of the problem
- Innovation
  - How will project move field forward
- Approach
  - How will you do the project
  - Potential problems and solutions

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Research Strategy - Significance

Present and critically evaluate current knowledge

State what is not known – research gaps

Relate how the current project will answer the questions of what is not known

Write this section as if the reviewer does not know your topic area

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Research Strategy - Innovation

What makes your project different

How is your project different from previous work

Describe how you project is different from the status quo

Address how your project is important to an NIH relevant problem

Significance and Innovation used to be the old Background section

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Research Strategy - Approach

Description of how to accomplish your specific aims

Rational of procedures to carry out the study

Be specific and detailed

Be consistent with yourself

Spell check your grant

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Research Strategy - Approach

- Characteristics of the participants
- Recruitment plans
- Allocation of participants to groups
- Blinding
- Study treatment
- Outcome measures / efficacy measures
- Safety
- Quality Control
- Timetable

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Research Strategy - Approach

- Visit schedule
- Sample size and power
- Data Collection
- Database
- Data entry
- Data analysis
- Control of bias and confounding
- Participant adherence
- Safety / Adverse events
- Informed consent issues
- Staff and training issues

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Inclusion / Exclusion Criteria

Characteristics of participants

- Age
- Gender
- Weight
- Behaviors
- Etc

Characteristics of the disease or treatment

- Disease being evaluated
- Previous treatments
- Washout periods
- History of other diseases
- Present clinical status

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Inclusion / Exclusion Criteria

Other Factors

- Participant cooperation
- Participation in another trial
- Occupation
- Geographical location
- Language
- Etc

Evaluation during screening

- Laboratory tests
- ECGs
- Physical Exam
- ETT
- Etc

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Recruitment

Always takes longer than you project

Always is more expensive than you think it will be

Difficult to recruit certain subgroups

Multiple strategies are often needed

Monitoring and Readjustment of recruitment plans during recruitment is necessary and important

Meeting Sample size and recruitment goals (gender and racial goals

Generalizability

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Study Treatment or Interventions

- Dosage forms and formulations
- Dispensing study medications
- Dosing schedule and increments
- Route of administration
- All components
- Length of intervention
- Withdrawal of study medications
- Issues with placebo

Medically justifiable / ethical
Reasonable doubt about efficacy

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Outcome Measures

Types of Outcomes to be Evaluated

- Objective outcomes (laboratory test)
- Subjective outcomes (QOL questionnaire)
- Surrogate outcomes
- Disease outcomes

Timing of Outcome Assessment

- Schedule of Activities
- Time to observe the effect

Multiple Outcome Measures

- Adjust level of significance

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Outcome Measures

Desired Characteristics of Outcome Measures

- Free of Measurement or Ascertainment Bias
- Chosen before the start of the data collection
- Capable of being observed independent of treatment assignment

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Study Measures

Desired Characteristics of Study Measures

- Easy and rapid to administer and interpret
- Little or no training to administer or interpret
- Sensitive to change elicited by the intervention
- Low rate of false positive or false negatives
- May be used multiple times without a training effect on participant
- Results are reproducible and valid
- Interpretation correlates with other clinical parameters of interest

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NIH PROMIS

PROMIS® stands for Patient Reported Outcomes Measurement Information System, which is a system of highly reliable, precise measures of patient–reported health status for physical, mental, and social well–being.

- Comparability – measures are standardized
- Reliability and Validity tested

http://www.nihpromis.org/about/overview

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NIH PROMIS

- Physical Health
- Anxiety
- Depression
- Fatigue
- Sleep
- Social Function
- Pain
- Global Health

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NIH Toolbox

NIH Toolbox is a multidimensional set of brief measures assessing cognitive, emotional, motor and sensory function from ages 3 to 85, meeting the need for a standard set of measures that can be used across diverse study designs and settings.

NIH Toolbox monitors neurological and behavioral function over time, and measures the domain constructs across developmental stages. This facilitates the study of functional changes across the lifespan, including evaluating intervention and treatment effectiveness.

http://www.nihtoolbox.org/Pages/default.aspx

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NCI Diet History Questionnaire

The Diet History Questionnaire (DHQ) is a freely available food frequency questionnaire (FFQ) developed by staff at the Risk Factor Monitoring and Methods Branch (RFMMB) at NCI.

http://appliedresearch.cancer.gov/dhq2/

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Study Visits

- Obtain Informed Consent
- Determine Eligibility and Interest
- Assign to study intervention
- Provide study intervention or medication
- Collect outcome data
- Collect safety data

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Study Visits

- Phone Visit
- Screening Visit
- Baseline or Randomization Visit
- Follow-up Visit

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TARGIT Schedule of Activities

Activities	SV	BV	6 month	12 month	24 month
Eligibility Assessed	X	X			
Informed Consent[1]	X	X			
Contact Information	X	X	X	X	X
Demographics	X				
Medical History / Medications Used	X				
Orientation to Group Assignment		X			
Diet and Physical Activity Questionnaires	X	X	X	X	X
Smoking Questionnaires	X	X	X	X	X
Other Questionnaires		X	X	X	X
Exhaled Carbon Monoxide	X	X	X	X	X
Salivary Cotinine[2]			X	X	X
Vital Signs including BP	X	X	X	X	X
Weight / Height	X	X	X	X	X
Waist and Hip Circumferences		X	X	X	X
Interval Medical History/ Medications Used / Adverse Events Assessed		X	X	X	X
2-week Diary run-in[3]	X				

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Randomization

Method to allocate participants to a group

Creates comparable groups

Reduces bias and confounding

Need to have clinical equipoise to randomize

Block randomization is commonly used

Stratified randomization is often used in multicenter clinical trials

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Equipoise

Clinical equipoise, also known as the **principle of equipoise**, provides the ethical basis for medical research that involves assigning patients to different treatment arms of a clinical trial

Means that there is genuine uncertainty over whether a treatment will be more beneficial than the control or comparison condition.

We don't already know the answers to the questions we are asking in the clinical trial

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Random Number Generator

Research Randomizer is a free resource for researchers and students in need of a quick way to generate random numbers or assign participants to experimental conditions. This site can be used for a variety of purposes, including psychology experiments, medical trials, and survey research. The site has generated **945 million** sets of random numbers.

https://www.randomizer.org/

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Masking or Blinding

Masking or blinding in a clinical trial involves keeping information about the intervention group assignment from either participants, staff, investigators, or DSBM members

Reduce certain types of bias (i.e. observer bias)

Placebo

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Retention

Failure to retain increases risk to study validity

Concerning if there is differential retention

Incomplete follow-up may increase risk of bias
- Drop-outs are different from those who do not
- Less than 5% leads to little bias

Must account for lost-to-follow-up in power calculations

Have the best retention rate possible
- greater than 20% lost threatens validity

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How to Improve Retention

Recruit a committed participant

Active monitoring plan to recognize problems

Active interest in participant
- Birthday cards
- Retention events
- Incentives

Make study visits convenient and valuable

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How to Improve Retention

Have adequate contact information
- Address
- Phone number (home, cell, work)
- Known associate to contact for information
- Social media (Facebook, twitter)
- Social Security Number (NDI)

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Quality Control

Clinical Level
- Training
- Certification / Recertification
- Manual of Operations

Data Level
- Data Entry
- Data Audits / Edits
- Independent Measurement and Readings
- Repeat Measures

Laboratory Level

Performance Monitoring
- Monitor secular trends
- Site visits

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Rigor and Transparency

Scientific Premise

Rigorous experimental design

Consideration of relevant biologic variables (gender)

Authentication of Key Biological and / or chemical resources

https://grants.nih.gov/reproducibility/module_1/presentation.html

https://grants.nih.gov/policy/reproducibility/guidance.htm

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4 AREAS OF FOCUS	WHAT DOES IT MEAN?	WHERE SHOULD IT BE INCLUDED IN THE APPLICATION?
Rigor of the Prior Research	A careful assessment of the **rigor of the prior research** that serves as the key support for a proposed project will help applicants identify any weaknesses or gaps in the line of research. Describe the strengths and weaknesses in the rigor of the prior research (both published and unpublished) that serves as the key support for the proposed project. Describe plans to address weaknesses in the rigor of the prior research that serves as the key support for the proposed project *See related FAQs, blog post	**Research Strategy** ➢ Significance ➢ Approach
Scientific Rigor (Design)	**Scientific rigor** is the strict application of the scientific method to ensure robust and unbiased experimental design, methodology, analysis, interpretation and reporting of results. Emphasize how the experimental design and methods proposed will achieve robust and unbiased results. *See related FAQs, blog post, examples from pilots	**Research Strategy** ➢ Approach
Biological Variables	**Biological variables**, such as sex, age, weight, and underlying health conditions, are often critical factors affecting health or disease. In particular, sex is a biological variable that is frequently ignored in animal study designs and analyses, leading to an incomplete understanding of potential sex-based differences in basic biological function, disease processes and treatment response. Explain how relevant biological variables, such as the ones noted above, are factored into research designs, analyses, and reporting in vertebrate animal and human studies. Strong justification from the scientific literature, preliminary data or other relevant considerations must be provided for applications proposing to study only one sex. *See related FAQs, blog posts, article	**Research Strategy** ➢ Approach
Authentication	**Key biological and/or chemical resources** include, but are not limited to, cell lines, specialty chemicals, antibodies and other biologics. Briefly describe methods to ensure the identity and validity of key biological and/or chemical resources used in the proposed studies. These resources may or may not have been generated with NIH funds and: • may differ from laboratory to laboratory or over time; • may have qualities and/or qualifications that could influence the research data; • are integral to the proposed research. The authentication plan should state in one page or less how you will authenticate key resources, including the frequency, as needed for your research. Note: Do not include authentication data in your plan. *See related FAQs, blog post, examples	**Other Research Plan Section** ➢ Include as an attachment ➢ Do not include in the Research Strategy.

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Safety

How to evaluate safety?

- Chemical laboratory test
- Clinical examination
- Probe for adverse reactions v. self-report
- Psychological test
- Other testing (ECG, X-Ray, etc)

Timing of Safety evaluations

Adverse Events (AEs)

- Termination of study intervention
- Serious Adverse Events
- Death

Reporting AEs

- IRB
- Sponsor

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Sample Size and Power

Get help from a biostatistician

BERD Clinic

https://berd.uthsc.edu//

Online tools to calculate sample size and power

https://www.qualtrics.com/blog/calculating-sample-size/

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Data Analysis Plan

- Exploratory Analyses
- Descriptive Analyses
  - Summarize findings
  - Describe sample
- Inferential Analyses
  - Draw conclusions

Intent to Treat Analysis

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Data Analysis Plan

Subgroup Analyses

- Gender and Race

Missing Data – try to have very little missing

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Human Subjects

Human subject - means a **living** individual about whom an investigator (whether professional or student) conducting research obtains

(1) data through intervention or interaction with the individual; or

(2) identifiable private information.

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Human Subjects

Includes use of human organs, tissues, residual diagnostic specimens, DNA, and body fluids

Includes graphic, written, or recorded information from living individuals

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SF 424 - Protection of Human Subjects

1. Risks to the Subject
   A. Human Subject Involvement and Characteristics (Inclusion and Exclusion Criteria)
   B. Sources of Material
   C. Potential Risk

2. Adequacy of Protection Against Risk
   A. Recruitment
   B. Informed Consent / IRB / Data Safety Monitoring Plan
   C. Protection Against Risk

3. Potential Benefits of Proposed Research to Subject and Others

4. Importance of the Knowledge to be Gained

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Training on the Protection of Human Subjects

- All key individuals responsible for designing and conducting this research project have received education on the protection of human research participants. Staff hired in the future will also receive this training prior to interacting with study participants. Therefore, we believe that our proposal follows the standards and requirements on the protection of human research participants.

Good Clinical Practice (GCP) Training

- All key individuals responsible for designing, conducting or managing this research project have received education on Good Clinical Practice (GCP) consistent with the principles of the International Conference on Harmonization per the NIH Policy (Notice Number NOT-OD-16-148). Staff hired in the future will also receive this training prior to interacting with study participants.

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IRB Approved Version of Consent Form

- As **required by the Revised Common Rule**, you are required to post an IRB-approved version of the study consent form that has been used to enroll participants on a public federal website such as http://www.clinicaltrials.gov designated for posting such consent forms.
- As required, the form will be posted after recruitment closes and no later than 60 days after the last study visit by any subject, as required by the protocol.

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Phase III Clinical Investigation

As defined by NIH, a broadly based prospective Phase III clinical investigation (usually involving several hundred or more human subjects) to evaluate an experimental intervention in comparison with a standard or control intervention or to compare two or more existing treatments.

The definition includes pharmacologic, non-pharmacologic, and behavioral interventions given for disease prevention, prophylaxis, diagnosis, or therapy.

Community trials and other population-based intervention trials also are included

Phase III Clinical trials need a DSMB

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SF 424 Application

NIH Defined Phase III Clinical Trial

Plans to conduct valid analyses among gender and racial subgroups

Plans to include all gender and racial subgroups

To define racial and ethnic groups must be prepared to ask the participants 2 questions

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NIH Standard for reporting Ethnicity and Race

NIH minimum standards for maintaining, collecting, and presenting data on race and ethnicity for all grant applications, contract and intramural proposals and for all active research grants, cooperative agreements, contract and intramural projects.

Ethnicity –	Hispanic or Not Hispanic
Race –	American Indian or Alaska Native Asian Black or African American Native Hawaiian or other Pacific Islander White Other

Must allow participant to choose all that apply for racial category.

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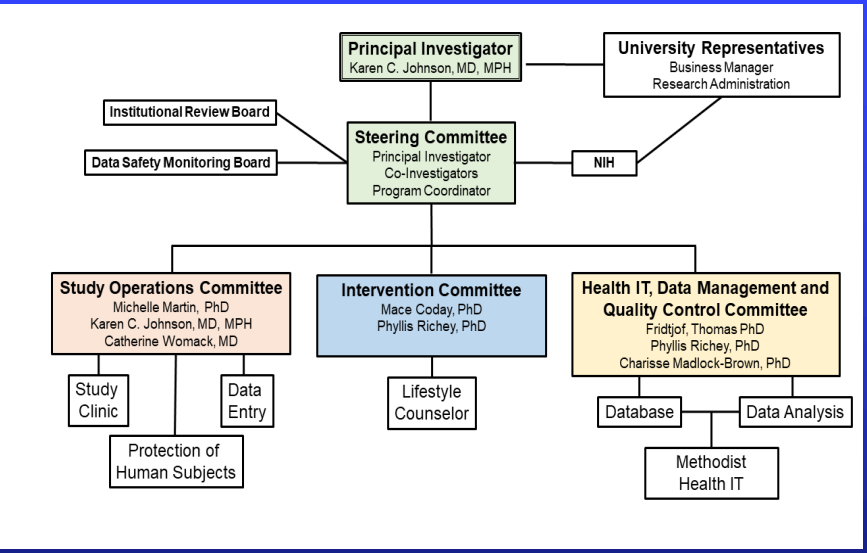
Overall Structure of Study Team



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Protocol Synopsis

- Brief Summary
- Study Design
- Outcome measures
- Statistical Design and Power
- Subject Participant Duration
- Will the Study use FDA-regulated intervention?
- Dissemination Plan

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SF 424 Application

Inclusion of Children

Child is defined as a person under the age of 21

Can exclude children if:

1. Research topic is not relevant
2. Law barring children
3. Knowledge being sought is already available for children
4. A separate age-specific study is warranted
5. Insufficient data to judge the risk in children

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Inclusion of Women and Minorities

Must justify if excluding anyone

Inclusion across the Lifespan

Includes all ages (children to seniors)

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Vertebrate Animals

Select Agent Research

- Hazardous biologic agents and toxins
- Threat to the safety

Multiple PD / PI Plan

- Making decisions
- Resolving conflict
- Plan if PI leaves the institution

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Consortium / Contractual Arrangements

Letters of Support

- All investigators
- Administrators from UT
- Collaborators
- Others

Data Management and Sharing Plans

https://sharing.nih.gov/data-management-and-sharing-policy

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Data Management and Sharing Plans

Element 1: Data Type

A. Types and amount of scientific data expected to be generated in the project:
B. Scientific data that will be preserved and shared, and the rationale for doing so:
C. Metadata, other relevant data, and associated documentation

Element 2: Related Tools, Software and/or Code:

Element 3: Standards:

Element 4: Data Preservation, Access, and Associated Timelines

A. Repository where scientific data and metadata will be archived:
B. How scientific data will be findable and identifiable:
C. When and how long the scientific data will be made available:

Element 5: Access, Distribution, or Reuse Considerations

A. Factors affecting subsequent access, distribution, or reuse of scientific data:
B. Whether access to scientific data will be controlled:
C. Protections for privacy, rights, and confidentiality of human research participants:

Element 6: Oversight of Data Management and Sharing:

https://grants.nih.gov/grants/forms/data-management-and-sharing-plan-format-page

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SF 424 Application - Appendix

Applicants are prohibited from using the appendix to circumvent page limitations in any section of the application for which a page limit applies.

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SF 424 Application

Appendix

- Publications
  - Manuscripts – accepted not published
  - Patents
- Surveys / questionnaires / data collection
- Protocols / informed consent documents
- Videos

Do not include digital photographs or publications that are publicly accessible

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Planned Enrollment Report

This report format should NOT be used for collecting data from study participants.

Study Title:

Domestic/Foreign: **Domestic**

Comments:

Racial Categories	Ethnic Categories				Total
	Not Hispanic or Latino		Hispanic or Latino		
	Female	Male	Female	Male	
American Indian/ Alaska Native					0
Asian					0
Native Hawaiian or Other Pacific Islander					0
Black or African American					0
White					0
More Than One Race					0
Total	0	0	0	0	0

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Biosketch

5 pages or less
eRA Commons User Name
Education and Training
Format

A. Personal Statement

1. Ongoing Research Support

B. Positions and Honors

C. Contribution to Science

1. Statement of contribution in area followed by up to 4 publications **with PMCID numbers** if available
2. Full list of published work website (No longer required)

OMB No. at top with date approve through on it

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SF 424 Application

Project Summary / Abstract

Summary of Proposed activity
No longer than 30 lines of text

Project Narrative

Description of the relevance of research to public health
2-3 sentences long

References Cited

Bibliography
PMCID reference number or PMID number

Facilities and Other Resources

Used to assess the capability of the organizational resources available to perform the effort proposed

Equipment already available

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Project Summary / Abstract

Brief Literature review

Highlight research gaps

What needs to be done

What you propose to do

State hypothesis – primary outcome

State specific aims

No more than 30 lines of text

Do not put confidential Information in this section

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Project Narrative

Public Health relevance of the project

No more than 2-3 sentences

Written in plain language understandable by general public

Describe how, in the short or long term, the research would contribute to: the fundamental knowledge about the nature and behavior of living systems, and/or the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

Published on the NIH Reporter

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Facilities and Other Resources

Department
University / College
Support Staff
Research Space
Office Space
Existing Equipment
Partners
Computer and Data Management Resources
Other UT resources (library)
Laboratory
Animal
Core facilities available

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Additional Questions you will have to answer

Is proprietary / privileged information included in the application?

Does this project have an actual or potential impact on the environment?

Is the research performance site designated as an historical site?

Does this project involve activities outside the US?

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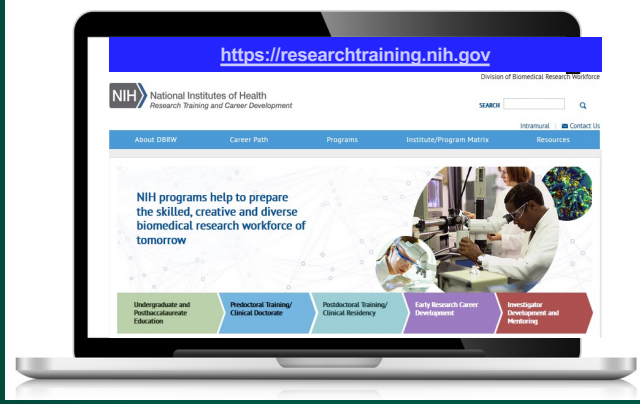
NIH Research Training Website



- **Launched in 2015** one stop for funding opportunities
- **Useful resource** for trainees, postdocs, potential K award applicants and early stage faculty

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Questions

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