



# Writing a Home Run Research Strategy



Children's Foundation  
Research Institute



# Recent Changes

- Version F for application guides and forms
- Inclusion of individuals across the lifespan
  - Exclusion of any specific age or age range group (e.g., children or older adults) should be justified in this section.
- Guidelines for research using human fetal tissue
  - Added instructions for applications proposing the use of human fetal tissue obtained from elective abortions.

**FORMS VERSION F SERIES**

Released: March 2, 2020



# **TRAINING INSTRUCTIONS FOR NIH AND OTHER PHS AGENCIES**

SF424 (R&R) APPLICATION PACKAGES

Guidance developed and maintained by NIH for preparing and submitting applications via Grants.gov to NIH and other PHS agencies using the SF424 (R&R)

Section of Application	Page Limits * (if different from FOA, FOA supersedes)
<b>Project Summary/Abstract</b>	30 lines of text
Project Narrative	Three sentences
Introduction to Resubmission or Revision Application (when applicable)	1
Candidate Information and Goals for Career Development and Research Strategy	12 (for both attachments combined)
Specific Aims	1
Training in the Responsible Conduct of Research	1
Candidate's Plan to Provide Mentoring (Include only when required by the specific FOA, e.g., K24 and K05)	6
Plans and Statements of Mentor and Co-mentor(s)	6
Letters of Support from Collaborators, Contributors, and Consultants	6
Description of Institutional Environment	1
Institutional Commitment to Candidate's Research Career Development	1
Biographical Sketch	5



# Introduction

- For revised applications only
- Summarizes substantial additions, deletions, and changes
  - It is sufficient to outline the changes made to the resubmission application in the Introduction attachment. NIH has removed the requirement to identify 'substantial scientific changes' in the text of a resubmission application by 'bracketing, indenting, or change of



# Introduction

- Addresses the concerns and criticisms raised in the summary statement
- Respectful and appreciative language
  - “The reviewers are obviously not familiar with.....”
  - “We very much appreciate the thoughtful comments of the reviewers....”



# Research Strategy



- **Significance**
- **Innovation**
- **Approach**
  - **Research Design**
  - **Preliminary Data**
  - **Methods**
  - **Analysis of Results**
  - **Final Section**



# Research Strategy

- **Strengths and weaknesses of relevant prior research or preliminary data**
- **Strong scientific premise**
- **An experimental design and methods that will achieve robust, unbiased results**
- **Biological variables are factored into the research design, with justification provided for restrictions**





# Significance

- Review literature selectively and critically
- Show how your proposed work will fill gaps in knowledge in your field
- Emphasize impact
  - Remember that the final overall score of your grant is based on potential impact of your proposal
- Should be more compelling if you have less preliminary data
- Aim for a conceptual model that addresses the current project and your long-term plan



# Innovation

- Will your project challenge or shift the status quo?
- Does the study use new concepts, approaches, or methods?
- Will this study improve current methods or concepts or apply them in a new way?
- Are your research/career goals unique?
- Does your plan represent a “new wave” of research in your field?



# Approach: Research Design

- Show how the specific aims test the central hypothesis
- Use diagrams
- Explain rationale for your design, including compromises
- Clarify how the design addresses your primary questions/hypotheses
- Discuss limitations and alternative approaches
- Show how career development activities will enhance your research



# Approach: Preliminary Data

- Strong data to support your aims
- Demonstrate feasibility
- Preliminary data are more critical in R01s than in K awards but provide a competitive edge
- Should complement your Career Development Plan
- Put yourself in the spotlight! Don't give mentors or collaborators all the credit



# Approach: Methods

- Cite previously published methods
- Devote space only to methods that are crucial to the study and unpublished
- Offer alternatives to challenging experiments
- Indicate where career development plan will strengthen your skills
- Use letters of support to emphasize capabilities



# **Approach: Analysis of Results**

- **Statistical approach and methods**
- **Power calculations to justify sample size/number of experiments**
- **Alternative approaches to analysis and interpretation**
- **Special courses/studies that will develop analytic skills**
- **Letters of support to clarify mentors' role in data analysis**



# Approach: Final Section

- **Timeline and benchmarks for success**
- **Summarize project limitations**
- **Reiterate project importance and strengths (IMPACT)**
- **Relate your research project and future R01 to your career goals**
- **Graphical timeline integrating your Research and Career Development Plans**



# Additional Details

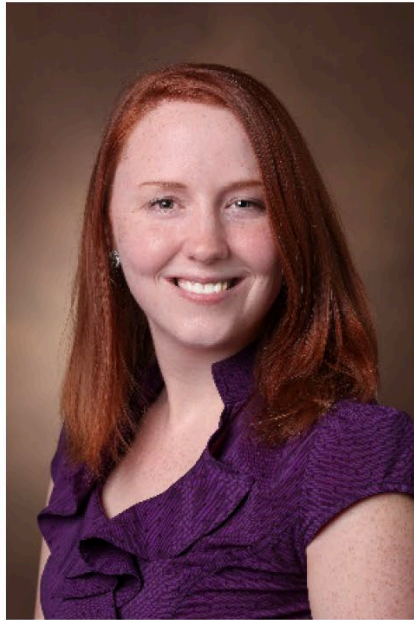
- Describe oversight of study subject safety, including DSMB, if needed
- Point out any procedures, situations, or materials that may be hazardous to personnel and precautions to be exercised
- Follow guidelines on use of human embryonic stem cells and human fetal tissue in research





# Pro Tips

- Use figures and tables to reduce text
- Avoid long stretches of unbroken monotonous text. Use paragraph breaks, figures and tables.
- Make figures and graphs easy to read and interpret
- Make sure figures depict what you say they do, especially fluorescent micrographs
- Avoid hyperbole (“highly innovative”, “paradigm-shifting”, etc.)
- Allow time for review by mentor(s) or collaborators and incorporation of feedback



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