Strategy Guide for Preparing NIH Grants

Specific Aims (1 page)

- Opening Sentence *(Should get the reader’s attention.)*
- Current Knowledge
- Gap *(What is the unmet need?)*
- Current Barrier to Progress in the field/area
- Long-term Goal
  - Overall objective *(This is the next step to achieve the long-term goal.)*
  - Central hypothesis
- Rationale that underlies the proposed research...
- Specific Aims that link back to the central hypothesis
  - Specific Aim 1: *To determine...*
    - *Our working hypothesis is...*
    - *To test this hypothesis, we will...*
- Payoff *(These aims will yield the following expected outcomes...)*
- Impact *(These outcomes are expected to have an important positive impact because...)*

Research Strategy: (12 pages)

*Note: The (*) terms below must be included as headers. [see page I-110 of the SF424 (R&R) Application Guide for more details]*

1. Significance* (0.75 to 1 page)
   a. How will completion of your project bridge the knowledge gap? *(Justify the need.)*
   b. Critical analysis of literature. Provide specific details to support the existence of the need. *(Why is this problem important?)*
   c. Conclusion. *(The contribution of the proposed research is expected to be...)*
   d. Statement of significance. *(This contribution is significant because...)*
      i. How are the concrete benefits relevant to the NIH mission? *(Seek assistance from your Program Officer.)*

2. Innovation* (0.25 page)
   a. What are the norms or status quo? *(Why is this limiting?)*
   b. The proposed research is innovative because...
   c. What are the benefits of this approach or research? *(How will this help bridge the knowledge gap?)*

3. Approach* (0.25 page)
   a. State your overall research rationale.
      i. If you have methods that are repeated in each Aim or subAim, you can bullet them here and refer back to them
      ii. You can include your statistical plan here. If it is different for each Aim, you should put it under the individual aim.
   b. For each Aim (EXAMPLE):
      i. Rationale for Specific Aim 1.
1. To test our working hypothesis..., we will... (*This is usually composed of several strategies*)... measure the extent to which factor X regulates gene expression Y, by transfection with..., immunoprecipitation of...

2. In support of our experimental rationale, ...

   *(Include the Preliminary data to support the justification and feasibility of this Aim.)*

   ii. Research Design

   1. To measure the extent to which..., we will... (*It helps to number each section and start the section with “To test...” or “To measure...” followed by your techniques. This ties the experiment directly back to your Specific Aim.*)

   iii. Expected Outcomes

   iv. Potential Problems / Alternative Strategies

   v. Discuss procedures, situations, or materials that may be hazardous to personnel and discuss the necessary precautions. *(Select agents need to be addressed separately.)*

   c. Summarize the expected outcomes and their impact at the end of each aim or at the end of the application *(one paragraph).*

   d. Timeline *(can be at the end of each aim or at the end of the document).*

**Environment**

1. What are the unique features of your scientific environment? *(What keeps you at Duke?)* Answers to this question should be included in each of the sections below.

2. How will each of the following items contribute to success of the project?

   a. Laboratory Environment *(Other expertise, shared lab meetings)*

   i. Are there special considerations of your lab? *(Handling biohazardous agents, proximity to surgical facilities, access to clean room, etc.)*

   b. Relationship with Colleagues *(Interest groups, collaborators at Duke who participate in your project)*

   c. Core Labs that you will utilize

   d. Clinical Environment, if applicable

   e. Geographical Environment *(Collaborators at nearby institutions and any resources you share with them)*

3. Institutional Support

4. Early Stage Investigators *(How will the institutional investment contribute to your success? Protected time, mentors, lab space, faculty development courses, etc.)*

**Reminder**

*These are the instructions for your reviewer:*

- 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?
Biosketch (4 pages)

1. How do your skills, training, and environment enhance the achievement of the goals of this grant?
2. Limit of 15 publications (List publications relevant to this application first, then others)
3. Remember to have your Key Personnel update their biosketches as well.

A. Personal Statement
Convince your reviewers that you are the best person to carry out this project. (This is about YOU, not Duke.) See example sentences below:

- The goal of the proposed research is to . . . (one line)
- Specifically, we will examine . . . (one to two lines only)
- I am uniquely qualified to carry out this project because . . . (include years of experience, publications, clinical care activities, review articles)
- My specific research accomplishments related to this project . . .

For Early Stage Investigators
- My previous experience as a PI . . . (supervising staff etc.)
- My training in . . . As funded by the K08 award . . .
- The focus of my laboratory . . .
- The proposed work is an extension of the previous experiences . . . (skills, techniques, etc.)
- I meet regularly (weekly, monthly) with my colleagues (areas of expertise and their diversity) to review literature, present data, propose new projects . . .
- I have established productive collaborations with . . .
- By presenting my research at XX national/international meetings per year (name them), I maintain interactions with leading researchers in the field representing expertise in . . .
- In summary, . . . "I am uniquely qualified to successfully complete this project because . . ."