

## Preparing Your First NIH Proposal Overview

This overview is geared towards early career faculty who are submitting their first R01 grant, the most common research funding mechanism of the NIH. However, this information is largely applicable to most other NIH funding mechanisms, including those for graduate students and postdocs.

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### Tips for Preparing Your Proposal

#### Tip 1: Determine the Right Time to Submit

##### QUESTIONS TO CONSIDER

- Do you have published papers related to your proposed research aims?
- Do you have enough preliminary data to justify the rationale of your proposed work?
- Do you have the right collaborators to make your project a success?

#### Tip 2: Follow the Do's and Don'ts of Preparing a Proposal

##### THE DOs

- Thoroughly read the guidelines in the funding opportunity announcement that best fits your work.
- Contact the program officer listed in the announcement or NIH center or institute you intend to apply to and get the program officer's feedback on your research idea.
- Organize your research idea into an outline and use that as the basis for creating a strong specific aims page.
- Create a plan and timeline for developing and submitting your application.
- Read examples of funded proposals. (Examples available on the website of the National Institutes for Allergy and Infectious Disease.)
- Start writing your research strategy and the other proposal components.

##### THE DON'Ts

- Do not write as if you are preparing a scholarly article. This is an exercise in persuasion.
- Do not presume that reviewers have the same knowledge as you.
- Do not submit an application without others critiquing your drafts.
- Do not wait to start the administrative documents (e.g., biosketch, facilities)

#### Tip 3: Know the Reasons for Unfunded Proposals

##### MOST COMMON REASONS BEHIND UNFUNDED PROPOSALS

- Lack of a new or original idea in your proposed research. Your research idea should advance the science vertically rather than incrementally.
- A diffuse, superficial or unfocused research plan. With NIH funding rates as low as 10 to 15 percent, only the strongest plans will be funded.
- Demonstrated lack of knowledge of published or relevant work.

- Lack of experience in the proposed methodology.
- Uncertainty concerning the future directions of your research.
- Questionable reasoning in experimental approach / lack of sufficient experimental detail.
- The absence of acceptable scientific rationale for your proposed work.
- Presenting an unrealistically large amount of work for the proposed time.
- An uncritical approach to your own work.

#### Tip 4: Allow Enough Time to Develop a Strong Proposal

##### TIMELINE TO SUBMISSION DEADLINE

- *8 months out:*
  - Assess your readiness.
  - Shop your research idea to the appropriate NIH institute and funding program.
  - Get your ducks in a row when it comes to human or animal subject protocols.
- *6 months out:*
  - Work with Sponsored Project Services (SPS) to create a login and profile for eRA Commons (NIH portal).
  - Outline your application and begin writing.
  - Get a head start on the ancillary materials in addition to the specific aims page and research strategy.
- *2 months out:*
  - Begin initial peer feedback on the research strategy and aims and revise your drafts accordingly.
  - Share your application with Research Development Services (RDS) for proposal critique and copy edits. **Note that RDS has an external reviewer program to compensate any expert you find outside the institution for doing a deep dive into your narrative.**
- *1 month out:*
  - Meet UO's internal deadlines for grant submission. A budget must be prepared for Sponsored Projects Services' approval at least 6-8 days before the deadline. Drafts of specific documents must be uploaded in the university's proposal administrative system 3 days before deadline.
  - **Note that you should not wait until the deadline to submit your proposal, leaving yourself vulnerable to any electronic delays or problems that may not be resolved by the 5 pm deadline.**

#### Tip 5: Know Who is Responsible for What

- *Principal Investigator:* You are responsible for the overall proposal development and interfacing with all other parties that will assist you.
- *Research Development Services:* Provides resources such as checklists and templates tailored to the program to which you are applying; drafts letters of support; and edits and reviews all proposal components.
- *Department Grants Administrator:* Helps with budget development and the mandatory creation of a proposal record in our administrative portal and will interface with NIH ASSIST—the official application submission portal of the NIH.

## Tip 6: Pay Careful Attention to All Proposal Components

The NIH proposal is one of the most complicated in the field of grant funding. There are number of components that need careful attention.

### ANCILLARY COMPONENTS

| PROPOSAL COMPONENTS: ANCILLARY      |  |   |
|-------------------------------------|--|---|
| ITEM                                | DESCRIPTION  | RESOURCES                               |
| Budget                              | Modular vs. Detailed   | SPS template                            |
| Budget Justification                | Modular vs. Detailed   | RDS Template                            |
| Biographical Sketches               | 5 pages  | NIH template                            |
| Facilities & Other Resources        | No page limit  | RDS templates and boilerplate narrative |
| Equipment                           | No page limit; can be combined with Facilities                                     | RDS templates and boilerplate narrative |
| Letters of Support                  | Generally no page limit; must include for consultants and significant contributors | RDS can help draft                      |
| Assignment Request Form             | Indicate institute and study section preference; key words; CDI                    | NIH template                            |
| Consortium/contractual arrangements | Documents for subawards  | DGA/SPS                                 |
| Cover Letter                        | Required for late applications, K grants, etc.                                     | RDS Template                            |
| Foreign Justification               | If foreign subaward  | RDS Template                            |
| Diversity eligibility certification | Depends on FOA   | RDS Template                            |

### NOTE THE FOLLOWING:

- NIH **budgets** can either be detailed or modular, the latter meaning that you budget in increments of \$25,000 for personnel, equipment, and so on. The modular budget can only be used if direct costs are \$250,000 or less per year. Budgets over that amount require a detailed budget and grants requesting over \$500,000 per year require pre-approval from a program officer. For modular budgets, you are only required to justify personnel and items that impact indirect cost calculations. Detailed budgets require a full budget justification.
- The **equipment and facilities and resources** documents are particularly important for an early career researcher. You will want to note the resources and support available to you as a new faculty member, demonstrating that your scientific environment will contribute to the success of your proposed research project.
- The **biosketch** builds a story of your training and scientific contributions to date. The personal statement helps the reviewer understand you holistically as a researcher, including your career goals and how you are well-suited for your role in the project, based on your prior training and research to date. It is incredibly important to tailor the personal statement to your proposed project for each application.

## SCIENTIFIC COMPONENTS

| ITEM   | DESCRIPTION   | RESOURCES                   |
|--|---|-----------------------------|
| Specific Aims  | 1 page; most important component of the proposal  | RDS Template and Examples   |
| Research Strategy  | 6 or 12 pages for most proposals  | RDS Template                |
| Project Summary  | 30 lines of text  | RDS Template                |
| Project Narrative  | 2-3 sentences   | RDS Template                |
| Bibliography   | Include PMID numbers for your publications  | See Instructions            |
| Authentication of Key Biological and/or Chemical Resources | 1 page  | RDS Template                |
| Resource Sharing Plan                                      | Optional for many applications with budgets under \$500K.   | My DMP Tool at UO Libraries |
| Human Subjects   | If applicable. Note differences between clinical v. non-clinical v. justification for using human specimens data. | RDS Template and examples   |
| Vertebrate Animals (if applicable)                         | If applicable   | RDS Template                |
| Multiple PI Leadership Plan                                | If applicable   | RDS Template and Examples   |
| Introduction (if resubmission)                             | 1 page response to reviewer critique  | PI                          |
| Progress Report Publication List (if renewal)              | Required for renewals only  | RDS Template                |
| Select Agent Research (not common at UO)                   | For particular biosafety considerations   | RDS Template                |

**Tip 7: Craft a Compelling Specific Aims Page (see on demand video and overview)**

**Tip 8: Develop a High-Quality Research Strategy**

## RESEARCH STRATEGY COMPONENTS

The following guidance is informed by the Grant Writers' Seminars and Workshops workbook on applying to the NIH.

### SIGNIFICANCE

- Extends and validates the assertions you make in the first paragraph of your aims.
- Frames a statement of need, which is your justification for the proposed research.
- Reiterates the importance of the problem to be addressed.
- Elaborate on the significance of your expected contribution.
- Addresses the rigor of prior research that informed your specific aims. Per the NIH, [scientific rigor](#) “is the strict application of the scientific method to ensure robust and unbiased experimental design, methodology, analysis, interpretation and reporting of results.” Applications *that do not address rigor will receive poor scores* and may not even be discussed during the peer review.

### INNOVATION

- Demonstrate how your proposed research is a new departure from the status quo that addresses an important, NIH-relevant problem, thereby enabling new, NIH-pertinent horizons to be reached that otherwise would likely have remained unattainable.
- Diplomatically describe the status quo in research, knowing that your reviewers may have contributed to the status quo.

- Describe your innovation in the context of your field, framing it as “our opinion is” because your innovation is not yet proven.
- Describe how barriers you are breaking down have prevented others from reaching the “new horizon” you envision.

Note that **significance and innovation** represent 40% of your overall score.

**APPROACH (in the order listed below)**

1. Restate each aim verbatim.
  - a. Introductory Paragraph
    - i. Research objective
    - ii. Working hypothesis
    - iii. Overall approach to the problem
    - iv. Rationale for approach
    - v. Expected outcome(s)
  - b. Rigorous research design
  - c. Expected outcome(s) (i.e., pay-off of experiment)
  - d. Potential problems and alternative strategies
2. Create a timeline for each approach with benchmarks or milestones.
3. Share the future directions of achieving your research outcomes (i.e., what will you do with future NIH funding).

**Tip 9: Participate in Early Career Reviewer Program**

NIH has an [Early Career Reviewer Program](#) for newer faculty to help applicants learn how to be competitive, train high quality reviewers, and deepen the existing pool of reviewers.

**ELIGIBILITY**

- Must have at least 2 years of experience as a full-time faculty member or researcher in a similar role. Post-doctoral fellows are not eligible.
- Must show evidence of an active, independent research program.
- Have at least 2 recent senior-authored research publications in peer-reviewed journals in the last 2 years. In press publications are considered and author position can be as single author, corresponding author, or first or last author.

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Contact [Research Development Services](#) for support on this or any application to fund for your research.