Putting It All Together:
The Components of an NIH Grant Application

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Overview of Grant Application Components

- Title
- Cover letter
- Assignment request form
- Project summary/abstract
- Project narrative
- Bibliography/references
- Facilities & other resources
- Equipment
- Authentication of key resources plan
- Biosketches
- Budget and justification
- Introduction

- Specific aims
- Research strategy
- Human subjects
- Inclusion of women/minorities
- Inclusion of children
- Planned enrollment table
- Vertebrate animals
- Select agent research
- Multiple PI plan
- Consortium/contractual
- Letters of support
- Appendix

Specific Aims (1 page)

- Your 1 page to sell the grant
- Prioritize the aims for the reviewers
  - Primary aim
  - Secondary aim(s)
  - Exploratory aim(s)
- As appropriate, an aim may have a primary outcome and one or more secondary outcomes
- For longitudinal studies, is there a primary vs. secondary follow-up time point?
- Specify hypotheses and/or research questions
- The scope of aims should match the grant type (e.g., R03, R01)
- What are potential next steps if the aims are achieved?

Research Strategy

- Explain and justify why you made certain decisions
  - Describe the thought process
  - Let reviewers know the pros/cons of alternate approaches and why you DIDN'T adopt those approaches
  - Why do you need 3 follow-up time points?
  - Why did you select this particular outcome measure?
- Openly acknowledge potential challenges you may face
- For randomized controlled trials of interventions, it's often the comparison/control group that is critiqued more than your great intervention!
- Justify your sample size carefully (don't blindly cite Cohen!)
- Use tables, figures, graphs; include a detailed timeline
- Leave some white space

Introduction (1 page)

- Your chance to respond to the prior critiques
- Rule 1: be as responsive as possible
- Rule 2: you don't have to do everything they said
- Rule 3: don't be defensive
- Rule 4: you may need to gather more preliminary data
- Rule 5: responding by adding a famous (but unknown to you) person as a consultant isn't always the best approach
- Rule 6: give a response to EVERY issue raised
- Organize issues/responses separately for each reviewer or you can group them thematically

Facilities and Other Resources

- Be selective yet detailed
- Leave no doubt for reviewers that you have all necessary resources available
- Tailor this section for each application
  - What facilities and resources are relevant for THIS PROJECT?
- Provide contextual information if it helps
  - e.g., Our research office building is a 2-minute walk from the hospital, where patients will be recruited from Dr. ABC's clinic.

Biosketches

- Tailor the biosketches for your specific grant application
  - You may need to help other investigators with their biosketches
  - Consider consistent look/feel of formatting across all biosketches

- Use the personal statement text wisely
  - Tell a story: Who I am; What I have done to prepare (When, Where); Why I am uniquely qualified; What next (including potential)
  - Write it in the first person
  - Sound engaged and enthusiastic
  - About 300 words

- Contributions to science
  - Appropriate to your level of experience
  - Frame the scientific issue related to each contribution
  - Explain your role
  - Can list non-publication research products

Letters of Support

- Outline the person's qualifications and experiences
- Explain exactly what the person is agreeing to do:
  - When
  - Where
  - What
  - Frequency
- Express a clear commitment to the project
- Draft the letters yourself

Rigor and Reproducibility

Area of Focus	Description	Grant Section
Scientific premise	Strengths/weaknesses of prior research; rationale	Research strategy: significance
Scientific rigor (design)	Use of appropriate design and methods to produce robust, unbiased results	Research strategy: approach
Biological variables	Explain how relevant biological variables are considered in the research design analyses	Research strategy: approach
Authentication	Authentication of key biological and/or chemical resources	Separate section