

Key Elements for a Competitive R01 Application

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Objectives

Understand the

- General principles of good science communication
- Key scientific elements of an Ro1 application
- Issues related to presentation and “grantsmanship”

General Principles

What Makes for Good Scientific Communication?

- Communicates all of, and only, the essential information
 - Follows good ethical practices
 - Logical organization
 - Convincing
 - Presentation style
- *The way that we communicate about our work reflects the manner in which the work was/will be performed!*

Scientific Components to the Score

Review Criteria

- Significance
- Investigators
- Innovation
- Approach
- Environment

Developing the Significance Section

Objectives

- Convince reviewers of the necessity of solving the problem and of the value of your approach

What do Reviewers Want to See?

- The existence of a disease or scientific problem does not guarantee significance
- Significance lies in the identification and description of important approach to solving that problem
- Clinical needs, basic knowledge, technical capabilities all valued (but know your audience)
- Avoid hyperbole and unwarranted claims of significance

Developing the Significance Section

Practical Aspects

- Sell your idea by making a sound argument
- Construct the argument by
 - Outlining the major points
 - Supporting them in a way the people outside of your field can also appreciate
 - Presenting them in a way that builds to your conclusion regarding significance

Developing the Investigator Section

Objectives

- Convince reviewers that the PI is qualified to lead both the scientific and administrative aspects
- Convince reviewers that all necessary expertise/effort is present

What do Reviewers Want to See?

- Principal Investigator
 - New Investigators: Education/training record
 - Publication record
 - Leadership
 - Multi-PI applications

Developing the Investigator Section

What do Reviewers Want to See?

- Research team
 - Is all needed expertise present?
 - What are the qualifications of the co-investigators?
 - Support letters
- Effort levels

Developing the Investigator Section

Practical Guidance

- Biosketch
 - Opening paragraph
 - Carefully select the content
- Budget justification
- Present yourself well in all components of the grant

Developing the Innovation Section

Objectives

- Convince reviewers of the originality and uniqueness of your ideas

What do Reviewers Want to See?

- Reviewers look for creativity, originality, and currency
 - In overall model
 - In hypotheses
 - In methods and experimental approach

Developing the Innovation Section

What do Reviewers Want/Not Want?

- Reviewers penalize
 - Not using state of the art methods
 - Not reading the literature
 - Innovation that lacks significance
 - Innovation that lacks feasibility

Developing the Innovation Section

Practical Aspects

- Move beyond “it hasn’t been done before” to what is really original about your ideas
- Unique capabilities count, when they add value to the research plan
- Get your reviewer to say “that is so cool”
- Construct the argument in a similar fashion to Significance

Developing the Approach Section

Objectives

- Define and clearly present a rigorous and feasible experimental plan

What do Reviewers Want to See?

- Big picture stuff
 - An overall model that is supported by the literature/ your preliminary data
 - Aims, hypotheses that relate to this overall model
- Be balanced and fair

Developing the Approach Section

What do Reviewers Want to See?

- Preliminary data
 - Want to know that hypotheses are reasonable
 - Want to know that you can do the work
- Modern, state of the art methods
- Rigor in experimental design/methods
 - Controls
 - Statistics
 - Take issues such as sample size seriously

Developing the Approach Section

What do Reviewers Want to See?

- Define expected outcomes
- Present a well thought out set of contingency plans
- Reasonable, justified timeline

Practical Aspects

- Recall that the goal is to test a hypothesis using the best available methods
- Make it really clear what you are going to do – diagrams go a long way
- Everything is an argument: justify every decision

Developing the Environment Section

Objectives

- Demonstrate that the research environment at the institution (community) supports the research
- Demonstrate unique aspects of the research environment

What do Reviewers Want/Not Want?

- Ensure that the environment supports the work by
 - Providing appropriate facilities
 - Providing sufficient access to necessary patient populations or other key resources
 - Supporting the investigators

Developing the Environment Section

Practical Aspects

- Take the resources and facilities pages seriously
- Incorporate aspects of the environment into the Approach section

Grantsmanship

Some thoughts on “grantsmanship” and other intangibles

- General
 - Speak with program staff
 - Read some successful applications
 - Give yourself enough time to write it and get feedback before you submit it

Grantsmanship

Some thoughts on “grantsmanship” and other intangibles

- About the grant itself
 - You have to have them at “hello”
 - Ideas can be complicated; presentation of ideas does not need to be
 - Use as few words as needed to convey your message
 - Pay attention to detail
 - Don't annoy your reviewers