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 R01 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!
Review Criteria

- Significance
- Investigators
- Innovation
- Approach
- Environment
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
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
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
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
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
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
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
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
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
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
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
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