Bridging the Career Gap for Under-represented Minority Scientists Workshop

Key Elements of a Successful Research Project (R) Grant Application

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Award Mechanisms

- Research Project Grants
  - Traditional – R01
  - Small and Exploratory/Development Grants – R03/R21/R33/R34
  - Program Project – P01
  - Small Business – R41, R42, R43, R44
  - Clinical trials- R34 (planning), R01 (low risk clinical trial), U01 (high risk clinical trial)

Typical Timeline for a New Individual Research Project Grant Application (R01)

- Three overlapping cycles per year
  - 9-10 months from submission to funding
- **Know the deadlines**
  - Special dates for AIDS or non-AIDS applications

Submission	Review	Council	Earliest Award
February	June	September	December
June	October	January	April
October	February	May	July

NIH Office Of Extramural Programs

Tips for Submitting a Successful NIH Application

What to DO

and

What Not to DO

National Institute of Allergy and Infectious Diseases

NIAID

Elements of a Successful Application (before you start writing)

- Components of successful applications
  - Strong Idea
  - Strong Science
  - Strong Team
  - Strong Presentation
- Match idea/science to the NIH Institute
  - Every IC has a specific mission
  - http://www.nih.gov/icd/
- Monitor Institute websites and the NIH Guide
  - http://grants.nih.gov/grants/guide/

Elements of a Successful Application (cont.)

- Identify and know the Program Officer(s) for your scientific area
  - Contact them about your research ideas
    - Do they fit with institute mission and priorities?
    - Identify the best grant mechanism or program
    - Identify the best study section for review
- Communicate with Scientific Review Officer and Grants Management Officers listed in the FOA
- Read changes in Science and Policies on NIH web pages (Office of Extramural Research, NIH)

Strategies for Funding Success

Use peer review committee information to your advantage

- Identify the Scientific Review Panel that you want to evaluate your application
- Prepare your application with the science focus of that review panel in mind
- Request the CSR Office of Receipt and Referral to assign your application to that Review Panel
- Review panel information: http://cms.csr.nih.gov/peerreviewmeetings/csrirgdescriptionnew/

Writing A Successful Application

Make Sure Applications Are Complete

- Address all solicitation requirements
- Follow instructions as stated in the RFA or PA
- Follow application submission instructions

Writing A Successful Application (cont.)

- Review criteria: **Significance, Investigators, Innovation, Approach, Environment** should all be addressed, in order, in the application
- Your Abstract should be understandable and complete (write it last!)
- If the work is not hypothesis-driven, explain why it is important

Writing A Successful Application (cont.)

Facilitate the Review

- Include everything necessary for reviewers to assess your work
- Have a clear, organized presentation
- Don’t be too ambitious! Focus and be concise
- Add visual aids
  - Figures, charts, tables, diagrams, flow-charts
  - Label figures (number, description) and reference them appropriately in the text
- Adhere to page limits
- **Use appendices properly**

Other tips for success

Don’t Work In A Vacuum

- Actively seek out collaborations
- Network widely
- Read a successful similar application (and its summary statement)
- Solicit honest feedback from senior investigators
- Carefully read and edit the application
- Participate in workshops and symposia
- **Serve as a reviewer for the NIH!**

Other tips for success (cont'd)

Don't Give Up!!

- Initial failure is common → it is the application not the person
- Learn from failed submissions
- **Study comments in Summary Statement**
- Decide if problems are "fixable"
- Attend diligently to each comment
- Keep a positive tone and attitude
- Achieve the goal: "Outstanding" resubmitted application

Additional Strategies for Funding Success

Understand why applications succeed / fail

Revise applications carefully

- Restate every criticism and answer each
- Identify how you revised the application- make it easy for reviewers to find your “answers”
- Be diplomatic and positive. Don’t argue with reviewers.
- Avoid an angry tone
- Avoid overstating your data

Common Problems in Applications

- Insufficient preliminary data (R01, etc.)
- Lack of new or original ideas
- Absence of sound scientific rationale
- Lack of testable hypothesis or no hypothesis
- Lack of letter of support, if collaborating
- Diffuse, superficial, or unfocused research plan
- Proposed experimental approaches are not feasible
- Lack of alternate approaches
- Inadequate power analysis

Common Problems in Applications (cont.)

- Future directions unclear
- Lack of Principal Investigator's experience
- Lack of essential expertise in research team and/or collaborators
- Level of effort for the projects is too high or too low
- Unrealistically large amount of work *(overly ambitious)*
- Lack of knowledge of published relevant work *(citations)*
- *Missing VA, HS, and Biohazards information*
- Typographical errors

Additional Strategies

Shuffle between R types - every unsolicited R type application (R03, R21, R01) can be submitted only twice (original and one resubmission)

Since ideas are limited, minimize the problem

- Apply as an R21 (or R01), if not funded use critique to submit a strong R03 (or R21)
- Since responses to RFAs are considered NEW, apply against an RFA and use the evaluation to prepare a better unsolicited R series application
- Use variations of the above until funded

Additional Strategies

Be an active part of the Peer Review Process!

- Submit CV to CSR Scientific Review Officers (SROs) or to Institute SROs

Advantages of Participating in Peer Review

- Networking with other people in the field who may be potential reviewers on your application – it helps that reviewers know you.
- In this regard: participate in the discussion during peer review!
- Participation in an actual peer review meeting (as opposed to just watching a mock review) will give you a better feel for what reviewers look for in an application and enable you to see what distinguishes a fundable from a non-fundable application.

Elements of a Successful R01

Thank You

Questions?