Bridging the Career Gap for Underrepresented 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

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Tips for Submitting a Successful NIH Application

What to DO
and
What Not to DO
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

- Monitor Institute websites and the NIH 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
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.
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
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?