Great Grant Writing: Learning the Fundamentals of Effective Proposal Development

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THE OHIO STATE UNIVERSITY

iPR
[initiative in population research]

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Please feel free to contact with any suggestions or questions
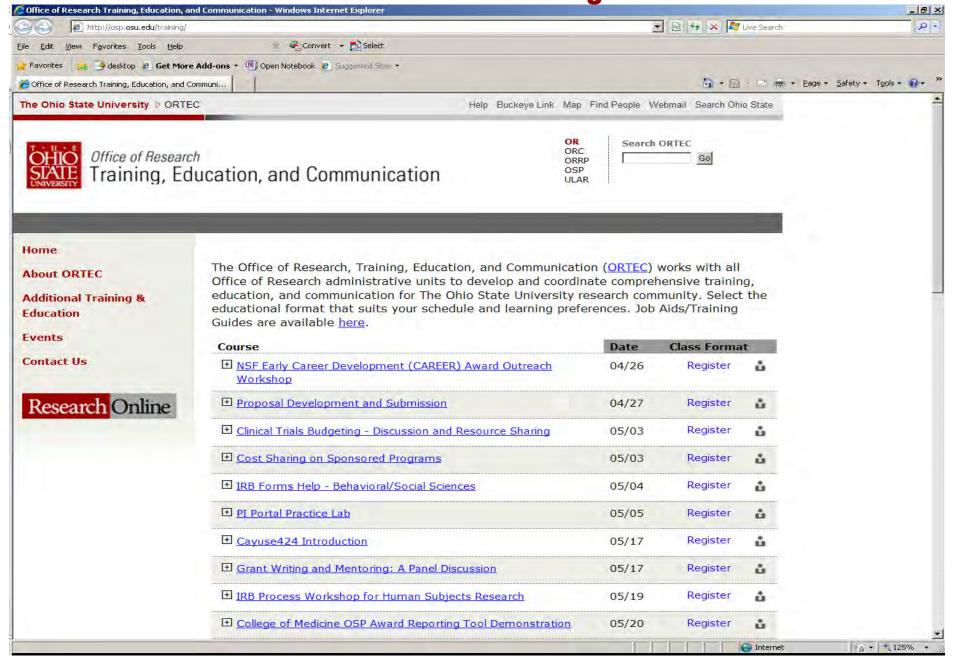
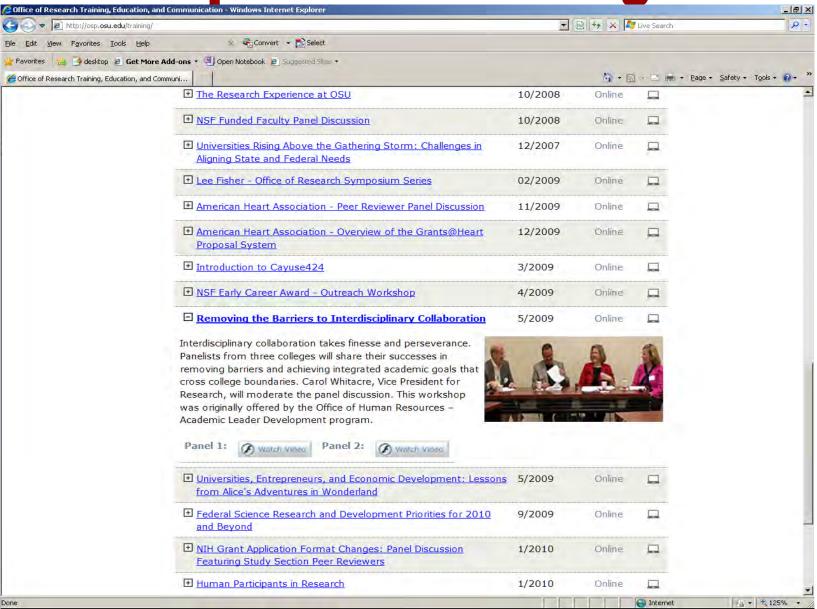# AGENDA

- *OSP website*

  Videos to watch
  Training and events

- *Funding Opportunities*

  NIH, NSF and private foundations

- *NIH Key Points*

  Applicant tips

  Web links

- *NSF Key Points*

  Applicant tips

  Web links

The following slides are from the Office of Research website: OSP.osu.edu/training/

osp.osu.edu/training/

Videos worth watching! Look! There is John Casterline!

Particularly useful videos on osp.osu.edu/training/:

- *NIH Grant Application Format changes: Panel Discussion Featuring Study Section Peer Reviews*

- *NSF Funded Faculty Panel Discussion*

- *NSF Early Career Award-Outreach Workshop*

- *Removing the Barriers to Interdisciplinary Collaboration*

Funding-Why Bother?

BENEFITS

- Release time

- Quarter off duty support

- HELP!-Post docs, GRA

- Promotion and Tenure

- Ability to pursue your passion

FUNDING SOURCES

NIH - *Big & small money (NICHD, NIA)*

NSF - *Big & small money*

Private Foundations
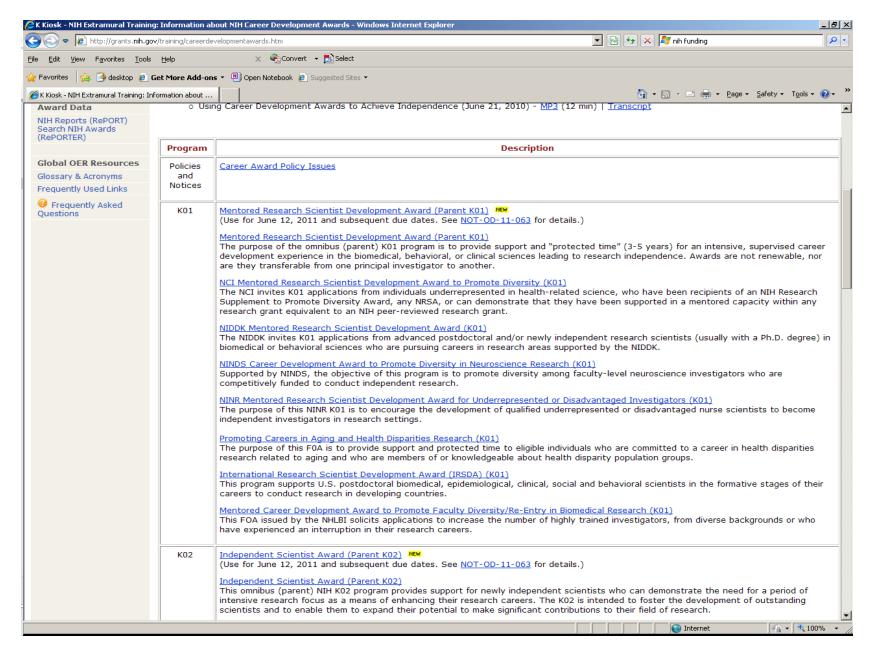
Nih funding opportunities

Nih funding opportunities

- **Early career awards** for junior faculty and post docs

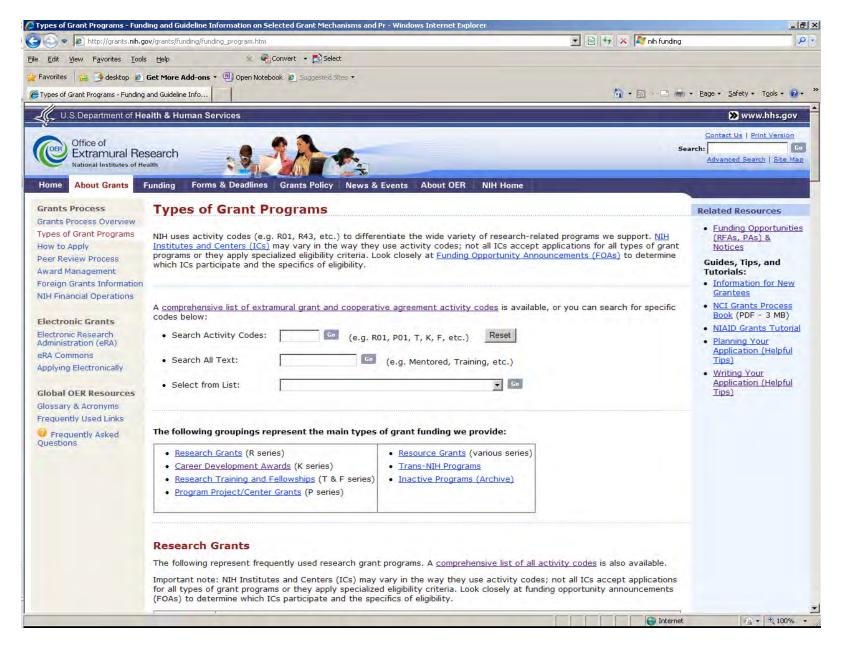 - ➤ **PECASE**-Presidential early career award for scientists and engineers Program
    http://grants.nih.gov/grants/policy/pecase.htm

  - ➤ **K01**, F32, K99, R00, K22, R03

Nih training grants

o Using Career Development Awards to Achieve Independence (June 21, 2010) - MP3 (12 min) | Transcript

Award Data

NIH Reports (RePORT)
Search NIH Awards (RePORTER)

Global OER Resources

Glossary & Acronyms

Frequently Used Links

Frequently Asked Questions

Program	Description
Policies and Notices	Career Award Policy Issues
K01	**Mentored Research Scientist Development Award (Parent K01)** NEW (Use for June 12, 2011 and subsequent due dates. See NOT-OD-11-063 for details.) Mentored Research Scientist Development Award (Parent K01) The purpose of the omnibus (parent) K01 program is to provide support and "protected time" (3-5 years) for an intensive, supervised career development experience in the biomedical, behavioral, or clinical sciences leading to research independence. Awards are not renewable, nor are they transferable from one principal investigator to another. NCI Mentored Research Scientist Development Award to Promote Diversity (K01) The NCI invites K01 applications from individuals underrepresented in health-related science, who have been recipients of an NIH Research Supplement to Promote Diversity Award, any NRSA, or can demonstrate that they have been supported in a mentored capacity within any research grant equivalent to an NIH peer-reviewed research grant. NIDDK Mentored Research Scientist Development Award (K01) The NIDDK invites K01 applications from advanced postdoctoral and/or newly independent research scientists (usually with a Ph.D. degree) in biomedical or behavioral sciences who are pursuing careers in research areas supported by the NIDDK. NINDS Career Development Award to Promote Diversity in Neuroscience Research (K01) Supported by NINDS, the objective of this program is to promote diversity among faculty-level neuroscience investigators who are competitively funded to conduct independent research. NINR Mentored Research Scientist Development Award for Underrepresented or Disadvantaged Investigators (K01) The purpose of this NINR K01 is to encourage the development of qualified underrepresented or disadvantaged nurse scientists to become independent investigators in research settings. Promoting Careers in Aging and Health Disparities Research (K01) The purpose of this FOA is to provide support and protected time to eligible individuals who are committed to a career in health disparities research related to aging and who are members of or knowledgeable about health disparity population groups. International Research Scientist Development Award (IRSDA) (K01) This program supports U.S. postdoctoral biomedical, epidemiological, clinical, social and behavioral scientists in the formative stages of their careers to conduct research in developing countries. Mentored Career Development Award to Promote Faculty Diversity/Re-Entry in Biomedical Research (K01) This FOA issued by the NHLBI solicits applications to increase the number of highly trained investigators, from diverse backgrounds or who have experienced an interruption in their research careers.
K02	**Independent Scientist Award (Parent K02)** NEW (Use for June 12, 2011 and subsequent due dates. See NOT-OD-11-063 for details.) Independent Scientist Award (Parent K02) This omnibus (parent) NIH K02 program provides support for newly independent scientists who can demonstrate the need for a period of intensive research focus as a means of enhancing their research careers. The K02 is intended to foster the development of outstanding scientists and to enable them to expand their potential to make significant contributions to their field of research.

Nih funding opportunities

Nih research grants

- **R01** Research Project Grant Program http://grants.nih.gov/grants/funding/funding_program.htm#RSeries

  - ➢ 3-5 years duration-renewable

  - ➢ No specific $ amount unless specified in FOA

  - ➢ $500K+ per annum needs advanced permission

  - ➢ Most commonly used/used by all ICs

  - ➢ Parent FOA: PA-10-067 http://grants.nih.gov/grants/guide/pa-files/PA-10-067.html

Nih research grants

- **R03** Small Grant Program

  ➢ Provides limited funding for a short period of time to support a variety of types of projects, including: pilot or feasibility studies, collection of preliminary data, secondary analysis of existing data, small, self-contained research projects, development of new research technology, etc.

  ➢ 2 year max-not renewable

  ➢ $50K per year

  ➢ Parent FOA: PA-10-064

  http://grants.nih.gov/grants/guide/pa-files/PA-10-064.html

NIH research grants

- **R13** Conferences and scientific meetings
  - ➢ Support for high quality conferences/scientific meetings that are relevant to NIH's scientific mission and to the public health
  - ➢ Up to 5 years
  - ➢ $$$ varies-set by IC
  - ➢ Parent FOA: PA-10-071

  http://grants.nih.gov/grants/guide/pa-files/PA-10-071.html

Nih research grants

- **R15**-Academic research enhancement award

  ➢ Support small research projects in the biomedical and behavioral sciences conducted by students and faculty in health professional schools and other academic components that have not been major recipients of NIH research grant funds

  ➢ 3 year max

  ➢ $300K max

  ➢ Parent FOA: PA 10-070

  http://grants.nih.gov/grants/guide/pa-files/PA-10-070.html

Nih research grants

- **R21** Exploratory/Developmental Research Grant Award

  ➢ Encourages new, exploratory and developmental research projects by providing support for the early stages of project development. Sometimes used for pilot and feasibility studies

  ➢ 2 years max
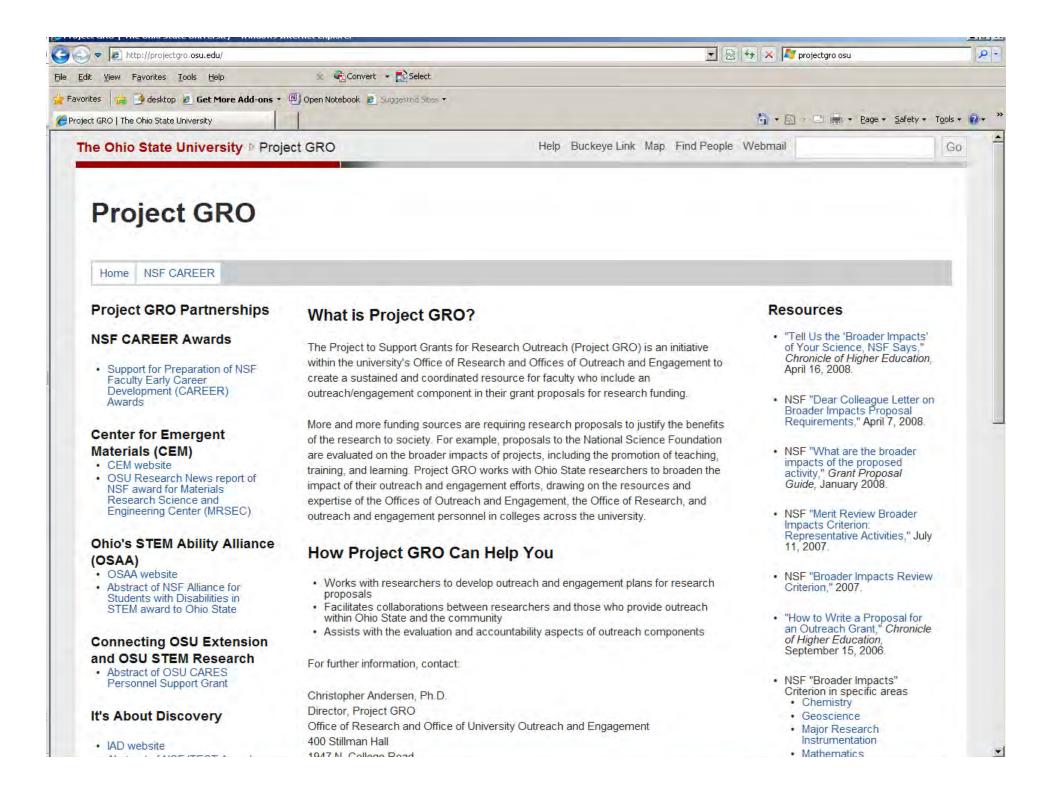
  ➢ $275,000 max total

  ➢ No preliminary data required

Nsf Funding opportunities

- ***Early Career awards***

  ❖ Faculty Early Career Development Program-CAREER

  http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214

  Help at OHIO STATE:

  http://projectgro.osu.edu

Project GRO

Home   NSF CAREER

Project GRO Partnerships

NSF CAREER Awards

- Support for Preparation of NSF Faculty Early Career Development (CAREER) Awards

Center for Emergent Materials (CEM)

- CEM website
- OSU Research News report of NSF award for Materials Research Science and Engineering Center (MRSEC)

Ohio's STEM Ability Alliance (OSAA)

- OSAA website
- Abstract of NSF Alliance for Students with Disabilities in STEM award to Ohio State

Connecting OSU Extension and OSU STEM Research

- Abstract of OSU CARES Personnel Support Grant

It's About Discovery

- IAD website

What is Project GRO?

The Project to Support Grants for Research Outreach (Project GRO) is an initiative within the university's Office of Research and Offices of Outreach and Engagement to create a sustained and coordinated resource for faculty who include an outreach/engagement component in their grant proposals for research funding.

More and more funding sources are requiring research proposals to justify the benefits of the research to society. For example, proposals to the National Science Foundation are evaluated on the broader impacts of projects, including the promotion of teaching, training, and learning. Project GRO works with Ohio State researchers to broaden the impact of their outreach and engagement efforts, drawing on the resources and expertise of the Offices of Outreach and Engagement, the Office of Research, and outreach and engagement personnel in colleges across the university.

How Project GRO Can Help You

- Works with researchers to develop outreach and engagement plans for research proposals
- Facilitates collaborations between researchers and those who provide outreach within Ohio State and the community
- Assists with the evaluation and accountability aspects of outreach components

For further information, contact:

Christopher Andersen, Ph.D.
Director, Project GRO
Office of Research and Office of University Outreach and Engagement
400 Stillman Hall
1947 N. College Road

Resources

- "Tell Us the 'Broader Impacts' of Your Science, NSF Says," *Chronicle of Higher Education,* April 16, 2008.

- NSF "Dear Colleague Letter on Broader Impacts Proposal Requirements," April 7, 2008.

- NSF "What are the broader impacts of the proposed activity," *Grant Proposal Guide,* January 2008.

- NSF "Merit Review Broader Impacts Criterion: Representative Activities," July 11, 2007.

- NSF "Broader Impacts Review Criterion," 2007.

- "How to Write a Proposal for an Outreach Grant," *Chronicle of Higher Education,* September 15, 2006.

- NSF "Broader Impacts" Criterion in specific areas
  - Chemistry
  - Geoscience
  - Major Research Instrumentation
  - Mathematics

Nsf Early career award

Just the Facts

Deadlines for CAREER proposals

July 25, 2011 for BIO< CISE<HER<OCI

July 26, 2011 for ENG

July 27, 2011 GEO< MPS<SBE<OPP

❖ 425 awards each year, $80,000,000 per yr

❖ ONE submission per year, max 3 reviewed

❖ 5 year award duration- minimum $400,000
(except for BIO- $500,000)

Nsf Early career award

PI Requirements

❖ PhD

❖ Untenured but in a tenure track position as an Assistant Professor as of Oct 1

❖ Have not previously received a NIH PECASE or NSF CAREER Award

Early career award

❖ www.NSF.gov/career

❖ Program Solicitation # 08-557

http://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=503214&ods_key=nsf08557

❖ Division CAREER Contacts

http://www.nsf.gov/crssprgm/career/contacts.jsp

Nsf funding opportunities

Nsf funding opportunities

Nsf funding opportunities

2. EArly-concept Grants for Exploratory Research (EAGER)

The EAGER funding mechanism may be used to support exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches. This work may be considered especially "high risk-high payoff" in the sense that it, for example, involves radically different approaches, applies new expertise, or engages novel disciplinary or interdisciplinary perspectives. These exploratory proposals may also be submitted directly to an NSF program, but the EAGER mechanism should not be used for projects that are appropriate for submission as "regular" (i.e., non-EAGER) NSF proposals. PI(s) must contact the NSF program officer(s) whose expertise is most germane to the proposal topic prior to submission of an EAGER proposal. This will aid in determining the appropriateness of the work for consideration under the EAGER mechanism; this suitability must be assessed early in the process.

- The Project Description is expected to be brief (five to eight pages) and include clear statements as to why this project is appropriate for EAGER funding, including why it does not "fit" into existing programs and why it is a "good fit" for EAGER. Note this proposal preparation instruction deviates from the standard proposal preparation instructions contained in this Guide; EAGER proposals must otherwise be compliant with the GPG.

- The box for "EAGER" must be checked on the Cover Sheet.

- Only internal merit review is required for EAGER proposals. Under rare circumstances, program officers may elect to obtain external reviews to inform their decision. If external review is to be obtained, then the PI will be so informed in the interest of maintaining the transparency of the review and recommendation process. The two standard NSB-approved merit review criteria will apply.

- Requests may be for up to $300K and of up to two years duration. The award size, however, will be consistent with the project scope and of a size comparable to grants in similar areas.

- No-cost extensions, and requests for supplemental funding, will be processed in accordance with standard NSF policies and procedures.

- Renewed funding of EAGER awards may be requested only through submission of a proposal that will be subject to full external merit review. Such proposals would be designated as "EAGER renewals."

3. Facilitation Awards for Scientists and Engineers with Disabilities (FASED)

As part of its effort to promote full utilization of highly qualified scientists, mathematicians, and engineers, and to develop scientific and technical talent, the Foundation has the following goals:

- to reduce or remove barriers to participation in research and training by physically disabled individuals by providing special equipment and assistance under awards

NIH Key Points to Remember:

- Make sure your ***goals are in line with the NIH goals***! Or any funding agencies goals- look at annual reports for what has been funded in the past-contact the program officer and **ASK!!!**

- **<u>NIH's mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability:</u>** http://www.nih.gov/about/mission.htm

NIH Key Points to Remember:

- Less is more!!!! (early investigators tend to write too much unnecessary information in **Significance** section)

- Be precise and include only essential critical data to the project- spend a great deal of time on methodology-also show expertise in a pub or with a key person!

- Shows reviewers you know what you are doing-address potential problems and solutions

- Readable figures and legends -check out NIH version online-print it /read it!

- Let others read your grant **before** it is ready-seek advise from peers/mentors

- **Impact** is very important!-Will your research provide advancement and

breakthroughs to the field-will it move the field forward? (Overall IMPACT Score) **http://nexus.od.nih.gov/all/2010/02/01/overall-impact-is-distinct-from-the-review-criterion-significance/**

- Get to know your **SRO/PO/SO** from the NIH: ***find the right study section for your proposal!***

NIH application steps

Pieces and Parts

1. Introduction (Resubmission or Revision Applications only)
2. **Specific Aims**
3. **Research Strategy (Significance, Innovation and Approach)**
4. Inclusion Enrollment Report (Renewal or Revision Applications only)
5. Bibliography and References Cited/Progress Report Publication List
6. Protection of Human Subjects
7. Inclusion of Women and Minorities
8. Targeted/Planned Enrollment Table
9. Inclusion of Children
10. Multiple PD/PI Leadership Plan
11. Consortium/Contractual Arrangements
12. Letters of Support (e.g., Consultants and OSU Chair)
13. Resource Sharing Plan(s)
14. Resources and Facilities (Environment)
15. Bio sketch (Investigator)

Nih grant writing tips

http://grants.nih.gov/grants/grant_tips.htm

NIH scoring Guidelines

Research Strategy **-Background and Significance, Preliminary Studies/ Progress Report, Research Design and Methods**

o ***SIGNIFICANCE*** (background and significance-addresses an important problem?)

o ***INNOVATION*** (This is new to all applications-address how your research is new and different)

o ***APPROACH*** (research design and methods-appropriate for this project? Feasibility?, preliminary studies/ progress report-do not include publications list here)

• ***INVESTIGATOR*** (qualified, if not surrounds self with help?)

• ***ENVIRONMENT*** (does it support success?-must show your Dept/ OSU is willing to help out)

WILL GET **1** FINAL OVERALL **IMPACT SCORE**

Helpful to have summary statements to highlight these areas

NIH BIO Sketch

- Follow the <u>new</u> instructions:

- A. ***Personal statement*** –state what makes you particularly awesome for this project (if need to can explain lack of productivity here: ex. Family emergency)

- C. ***Publications- 15 max.*** Only list the most relevant to this application. Some do 5 most relevant then 10 others that are also relevant.

NIH website

- Guidelines for Reviewers-scored from

  1 good-9 bad

  http://grants.nih.gov/grants/peer/ reviewer_guidelines.htm

- Podcasts

  http://grants.nih.gov/podcasts/All_About_Grants/ index.htm

- Researching all grant related things

  www.grants.gov

Helpful web addresses for NIH

- Enhancing peer review-cover letter to **guide to correct study section**-can contact Scientific Review Administrator- website for roster lists (can cite them in your proposal ☺)
  http://era.nih.gov/roster/index.cfm

- Peer review videos to watch to see the process in action
  http://enhancing-peer review.nih.gov/application_changes_video.html
  http://www.youtube.com/watch?v=kfgzdLe92c0

- Scoring guideline link for reviewers
  http://grants.nih.gov/grants/peer_review_process.htm#scoring2

- Tips for Applicants
  http://www.youtube .com/watch?v=lAOGtropM6Q&feature=relmfu

NSF tips for success

Administration Review

- **Compliance check - Reasons for return without review**

  – Print problems, format, page limits, font size and margins, spacing, etc.- **PAY ATTENTION to these rules!**

    ### *A DEADLINE IS A DEADLINE!!!!*

  – Failure to follow program announcement guidelines-read these and read them **BEFORE!** submission

  – Not within NSF funding areas

  – Failure to address reviewers concerns in resubmission

  – Duplicate submission-not fully reworked

  – NSF already funding like proposal

NSF Tips for success

Proposal must address these points:

- Objectives and scientific, engineering or educational significance

- Suitability of the methods to be employed

- Qualifications of the investigator and the grantee organization

- Effect of the activity on the infras:

- structure of science, engineering and education

- Amount of funding required

Nsf tips to success

Proposal Guidelines

- *Grant Proposal Guide* pg 111-1
  http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/nsf11_1.pdf

Nsf tips for success

Project Summary -1 page

Failure to address both criteria will result in "returned without review"

- **Intellectual merit**

- **Broader impact**

(make separate headings)

NSf tips for success

Merit Review Criteria

- **Intellectual merit**
  - Creativity and originality and *transformative potential*
  - Potential to advance knowledge
  - Conceptualization and organization
  - Qualifications of investigators
  - Access to resources
- **Broader impacts**
  - Promotes teaching, training and learning
  - Participation of underrepresented groups
  - Enhancement of infrastructure
  - Dissemination of results
  - Benefits to society

NSF Tips for success

Merit Review

Examples of what they are looking for:

- http://www.nsf.gov/bfa/dias/policy/meritreview/

- http://www.nsf.gov/bfa/dias/policy/meritreview/facts.jsp#1

NSF helpful hints to success

Project Description

- Max 15 pages

- Clear statement of work,

- Objectives,

- Longer term goals,

- Present knowledge in field, PIs work in progress and other work in progress

NSF helpful hints to success

BIO Sketch

- 2 page limit-all senior project personnel

- NO PERSONAL INFO!

- A) **Professional Preparation** (education)

- B) **Appointments**

- C) **Publications** 10 max-5 most closely related to project, 5 significant others

- D) **Synergistic Activities-** 5 examples to show broader impact- A list of up to five examples that demonstrate the broader impact of the individual's professional and scholarly activities that focuses on the integration and transfer of knowledge as well as its creation.-Show committees, review boards etc....

- E) **Collaborations & Other Affiliations** (used to eliminate conflicts and bias)
  - Collaborators and Co-Editors
  - Graduate Advisors and Postdoc sponsors
  - Thesis Advisor and postgraduate-scholar sponsor

Nsf helpful links

*** NEW DATA MANAGEMENT PLAN ***

http://www.nsf.gov/bfa/dias/policy/dmp.jsp

No more than 2 pages, must address sharing of the data - how will you make accessible to the public?

**** Preparing Proposal ****

http://nsf.gov/funding/preparing

**** Merit Review ****

http://nsf.gov/bfa/dias/policy/meritreview/

IPR can help!

- Finding funding sources

- Linking up with people who can help

- Budgets and Budget Justifications

- Proof reading for grammatical errors

- Lots of resources, guides, helpful hints from NIH, NSF and more

- Cayuse-for NIH/NSF submissions

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