

Grantsmanship & Clinical Research Skills Development Workshop
March 13, 2009

Grantsmanship for the Research Professional

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WORKSHOP AGENDA

- OVERVIEW
- FUNDING OPPORTUNITIES
- RESOURCES
- REVIEW PROCESS
- PROPOSAL PLANNING
- PROPOSAL COMPONENTS
- PROPOSAL SUBMISSION
- TEAM SCIENCE

INTRODUCTIONS

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OVERVIEW

Grantsmanship

- The **BAD** news:
"It is not a process by which bad ideas get transformed into good ones; rather, it is more often the case of a good idea disguised as a bad one"

Grantsmanship

- The **GOOD** News:
"The skills associated with the grant application and award processes. These skills are **learned**, sometimes through trial and error experiences, but can be taught to those who are open to the advice of their experienced colleagues."

Reasons to Write a Proposal

- \$\$\$
- Leadership
- Self-supporting
- Innovative
- Independent
- Tenure/Job advancement
- Establish formal collaboration/partnership

Writing Differences

<u>GRANT WRITING</u>	<u>ACADEMIC/SCHOLARLY/ TECHNICAL WRITING</u>
Goal: Sponsor goals, Service attitude	Scholarly pursuit, Individual passion
Orientation: Future, Work that should be done	Past, Work that has already been done
Centered: Project-centered, Objectives and activities	Theme-centered, Theory and thesis
Rhetoric: Persuasive, "Selling" the reader	Expository, Explaining to the reader
Tone: Personal, Conveys excitement	Impersonal, Objective and dispassionate
Scholarship: Team-focused, Feedback needed	Individualistic, Primarily a solo activity
Length : Strict constraints, Brevity rewarded	Few constraints, Verbosity rewarded
Terminology: Accessible language, Easily understood	Specialized, jargon

Reasons to Write a Proposal

- \$\$\$
- Leadership
- Program effectiveness
- Establish formal collaboration/partnership

Successful Grant Writers

- Novel/innovative idea—Paradigm Shifters
- Plan ahead
- Revise, revise, revise
- Seek input
- Know the literature/competition
- Identify and punch agency hot buttons
- Understand review criteria

Keys to Successful Grant Writing

- Formal grantsmanship training
- Support from senior colleagues
- Early/frequent interaction with funding agency/program officials
- Adequate and consistent administrative support
- Active engagement in program planning with funding agencies and their consultants

FUNDING OPPORTUNITIES

Giving Philosophies and Missions

- Charitable Sector-Private Philanthropy
 - Philanthropic (altruistic concern for human welfare and advancement) support to the community
- Corporations
 - In the business of making money
- Government Agencies
 - Specific services to be funded have already been determined as a result of policy or law

Charitable Sector-Private Philanthropy

- Foundations and Corporate Philanthropy
- Distribute at least 5% of their assets to nonprofits
- Defined goals and mission, set by Board
- Extreme variations
- Establish own processes
- Not under a lot of scrutiny

Types of Foundations

- **General Purpose Foundations**
 - Larger, well known foundations
 - Operates with relatively few grant-making restrictions, and are considered the pacemakers or standard setters within the foundations field
 - Usually governed by a knowledgeable board of directors assisted by a trained professional staff person
 - Has about two thirds of all assets of foundations, and 50% of all grants awarded (ex. Ford Foundation)
- **Special Purpose Foundations**
 - Funding restricted to a specific field of research, a particular activity, or a designated geographic area.
- **Corporate or Company Sponsored Foundations**
 - Channel the philanthropies of business organizations although they are separate legal organizations from the sponsoring corporations
 - Generally, grants are given within the communities where the company is located

Types of Foundations

- **Family Foundations**
 - By far the largest number of private foundations in the U.S.
 - Usually have been set up by the donor for his/her current contributions
 - Rarely reached by an appeal outside the donor's range of interest; grants usually reflect the immediate interest of the donor and go to a college, church hospital, or community fund, of the donors' choice
- **Community Foundations**
 - Supported by, and operated for a specific community or region.
 - Usually restrict their giving to a specific geographic area and administers them to support any particular designated interests of the donors. Great sources for scholarships for local students; needs assessment for local problems; funds to use to raise more money. Usually not interested in research or in creating a unique solutions to a problem. (ex. Chicago Community Trust)

Mission – MacArthur Fdn

- "The John D. and Catherine T. MacArthur Foundation is a private, independent grantmaking institution dedicated to helping groups and individuals foster lasting improvement in the human condition. Through the support it provides, the Foundation fosters the development of knowledge, nurtures individual creativity, strengthens institutions, helps improve public policy, and provides information to the public, primarily through support for public interest media. The Foundation believes its grantmaking is most effective when focused on relatively few areas of work, combined with sufficient resources over a long enough period of time to make a measurable difference. The Foundation makes grants and loans through four programs."

Government Agencies

- **Local Government**
 - Susceptible to people's will, cognizant of public perception
 - Volunteer community leaders set priorities
 - Variations occur between geographic regions
 - Processes are carefully and strategically determined
 - Funding competitive, typically small, short-term awards
 - Vulnerable to failed levies and to change in the funding allocations at the local level
 - Tend to fund services, not organizations

Government Agencies

- **State Governments**
 - Administration is determined by vote of the people
 - Cognizant of public perception and liability issues
 - Concern about being re-elected
 - Priorities established by administration
 - Variations between states
 - Review and approval process are strategically determined
 - Funding more competitive, medium to high awards
 - Can include multi-year contracts/grants
 - Funding vulnerable to abrupt change

Government Agencies

- **Federal Governments**
 - Administration determined by vote of the people
 - Priorities established by department heads as determined by the administration
 - Review and approval processes are rigorous
 - Cognizant of liability issues
 - Equates to lengthy, formal application processes
 - Funding very competitive, medium to very high awards
 - Multi-year grants and contracts
 - Vulnerable to progressive change or Congressional funding

Government Agencies and You

Factor	Local	State	Federal
Time	Least	More	Most
Grant Sills	Relationships	Relationships/Research/Writing	Research/Writing
Level of Competition	Least	More	Most
Organizational Reputation	Extremely Important	Somewhat	Not a factor
Fiscal accountability	High	Medium/High	Medium/High
Collaborative Partnerships	Encouraged	Often Mandated	Often Mandated
Dollar Amounts	Lower	Medium/High	Medium/Highest
Your Competition	Apples to Oranges	Apples to Apples	Apples to Apples

Federal Funding

- **Entitlement programs** guarantee that all individuals who meet the eligibility criteria are served. Some federal entitlement funds flow directly to state agencies, which are responsible for operating the particular program or turning the funds over to local agencies to operate the program; in other states, city or county governments run the program. States may also use federal entitlement funds to contract with private nonprofit agencies to perform specific activities that are part of the state plan.
- **Formula or block grants** provide states with a fixed allocation of funds to states based on an established formula that may, for example, be linked to a state's poverty rate. On a regular basis, states must submit a general plan describing the broad functions and population to be served by the state program to the federal agency that oversees the program. Like entitlements, block grants flow directly to state agencies that are responsible for operating the particular program, sub-granting the funds through a proposal process, or otherwise turning the funds over to local governments or nonprofit agencies. Unlike entitlements, however, formula grants do not guarantee to cover everyone who is eligible.

Federal Funding

- **Demonstration grants** are pilot projects generally involving a small number of sites in an effort to learn about the effectiveness of a new program or approach. An effective demonstration grant program may lead to further funding in the form of discretionary grants. Demonstration grants also are awarded on a competitive basis and can go to state and local governments or to community-based organizations, depending on the program's eligibility requirements.
- **Direct payments** are funds paid by the federal government directly to individual beneficiaries who satisfy federal eligibility requirements. These programs may, however, be administered by an intermediate state agency.
- **Loan or Loan Guarantee** programs enable community-based organizations, public and private entities, and some private businesses to borrow funds, sometimes at below-market rates, from public or private lenders for specific purposes. Loan programs can provide funds directly to a program or initiative or to community-based institutions that act as intermediaries. Loan funds go directly to the loan applicant, which is responsible for repayment. Loan Guarantee programs do not provide loan funds, but provide indemnification to lenders in the case of default by those responsible for loan repayment. Loan guarantees make it more attractive for private lenders to make potentially riskier loans.

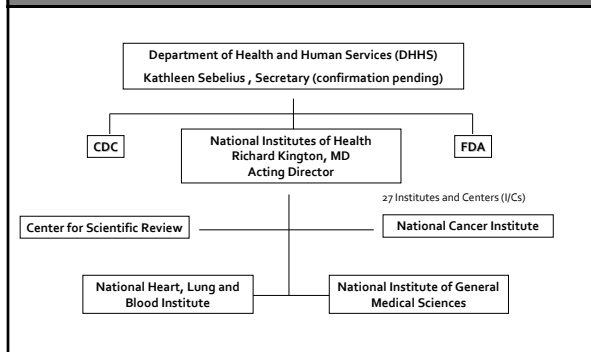
Federal Funding

- **Contracts** between the state or federal government and other private or public agencies require the provision of specified services and often incorporate specific performance standards that contractors must meet.
- **Discretionary or project grants** fund a wide range of targeted federal efforts, from preventing juvenile delinquency to improving infant health outcomes. Depending on the program requirements, state and local governments, research institutions, universities, community-based organizations, or coalitions of groups and agencies can apply directly to the sponsoring federal agency to gain access to these funds through a competitive bidding process. Application for discretionary grants does not guarantee an award, and the amounts received by grantees are not predetermined by a formula.

Mission – NIH

“ The National Institutes of Health is the steward of medical and behavioral research for the Nation. Its mission is science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to extend healthy life and reduce the burdens of illness and disability.”

Organization – NIH



Mission - NSF

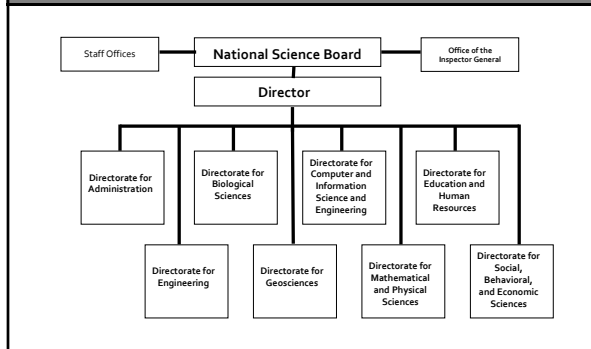
“NSF’s continuing mission is set out in the preamble to the National Science Foundation Act of 1950 (Public Law 810507): To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense, and for other purposes. The Act authorizes and directs NSF to initiate and support:

- Basic scientific research and research fundamental to the engineering process,
- Programs to strengthen scientific and engineering research potential,
- Science and engineering education programs at all levels and in all fields of science and engineering, and
- An information base on science and engineering appropriate for development of national and international policy.”

Over time, the following additional responsibilities were added to the agency’s mission:

- Foster the interchange of scientific and engineering information nationally and internationally,
- Support the development of computer and other methodologies,
- Maintain facilities in the Antarctic and promote the U.S. presence through research conducted there,
- Address issues of equal opportunity in science and engineering.”

Organization – NSF



Federal Extramural Funding

- DoD
- HHS (NIH, FDA, CDC)
- NASA
- NSF
- DOE
- DOT
- EPA
- DOC
- ED
- DHS
- USDA

Grants vs. Contracts

- | | |
|--|---|
| <p>Grants:</p> <ul style="list-style-type: none"> ▪ Mission-driven ▪ Assistance ▪ Project/proposal is well-defined, but no formal agreement ▪ Progress/final reports, may be milestone driven ▪ Broad topics funded ▪ Agency contact unlimited ▪ Budget not negotiated ▪ Investigator initiated | <p>Contracts:</p> <ul style="list-style-type: none"> ▪ Procurement ▪ Well-defined, legally binding statement of work, obligations, responsibilities ▪ Specific deliverables defined ▪ Milestone driven ▪ Topic-specific response ▪ Agency contact limited ▪ Costs negotiated ▪ Closely monitored |
|--|---|

Announcement Types

- Omnibus Solicitation/Parent Announcement
- RFA - Request for Applications
- PA – Program Announcement
- PS – Program Solicitation
- RFP – Request for Proposals
- RFI – Request for Information
- NOT – Notice
- BAA – Broad Agency Announcement
- CAN – Cooperative Agreement Announcement
- FOA – Funding Opportunity Announcement

NIH Announcement Types

Type	Receipt Date	Money Set Aside	Peer Review	Specificity of Topic	Advantage to Applicant
Parent Announcement	Standard receipt dates, usually open for three years	None	In Center for Scientific Review (CSR) or in an IC, by one of many review committees	Non-specific investigator initiated. Not all ICs participate in all parent roles.	May submit any topic within the breadth of the NIH mission. Competition tied mainly to an IC's overall <u>profile</u> .
IC-specific Program Announcements (PA)	Standard receipt dates, usually open for three years	No set aside (unless <u>EAS</u>); high-priority applications may be funded beyond the <u>profile</u> .	In CSR or in an IC, by one of many review committees (unless <u>EAS</u>)	Often broadly defined or a reminder of a scientific need; <u>investigator initiated</u> .	Competition tied mainly to the IC's overall <u>profile</u> .
Request for Applications (RFA)	Single	Specifies funds and targets number of awards	Usually in and IC, but sometimes in CSR. Same review committee for all applications. Usually reviewed by a Scientific Review Group, called a Special Emphasis Panel, that is convened on a one-time basis.	Well-defined scientific area	Competition depends on number of applicants and dollars set aside.

NIH Funding Mechanisms

- R-series - Research Project Grants
 - R01 Individual research grants, most common
 - R03 Small Grant
 - R15 Academic Research Enhancement Award
 - R21/R33 Exploratory/Development Grants
 - R37 Method to Extend Research in Time (MERIT) Award
- T-series – Training Grants
 - T32 Institutional NRSA
- F-series - Fellowships
 - F31/F32 – Pre/Postdoc NRSA
- K-series - Career Development Awards
 - K01 Mentored Res Scientist Development Award
 - K02 Independent Scientist Award
 - K08 Mentored Clinical Scientist Development Award
 - K22 Career Transition Award
- P-series - Program Grants
 - P01 Program Project Grants
 - P50 Research Center Grants
- U-series - Cooperative Agreements
 - U54 Specialized Center-Cooperative Agreements
- N-series - Contracts

NSF Announcement Types

- General Announcements
 - **Unsolicited**/Investigator-initiated proposals for fundamental and basic research in several varied scientific fields and disciplines
 - PD-09-1234
- Program Solicitations
 - **Solicited** proposals
 - NSF-09-1234

NSF Funding Mechanisms

- Standard Research Grants : individual or multi-investigator research projects
- Scholars Awards
- Grants for Collaborative Research
- Postdoctoral Fellowships
- Professional Development Fellowships
- Doctoral Dissertation Research Improvement Awards
- Small Grants for Training
- Small Grants for Exploratory Research
- Centers
- Conference /Symposia/Workshop Awards
- Supplements
- Graduate Fellowships
- Data Collection and Dissemination
- Computer Equipment and Other Instrumentation
- Research Experience for Undergraduates/Teachers

NSF Unsolicited Funding Programs

- Biomedical Engineering
- Biophotonics, Advanced Imaging, and Sensing for Human Health
- Biotechnology, Biochemical, and Biomass Engineering,
- Catalysis and Biocatalysis
- Chemical and Biological Separations
- Combustion, Fire, and Plasma Systems
- Energy for Sustainability
- Environmental Engineering
- Environmental Implications of Emerging Technologies
- Environmental Sustainability
- Fluid Dynamics
- Interfacial Processes and Thermodynamics
- Particulate and Multiphase Processes
- Perception, Action & Cognition
- Process and Reaction Engineering
- Research to Aid Persons with Disabilities
- Thermal Transport Processes

Comprehensive Search Engines

- **Illinois Technology Development Alliance Funding Alert:** This weekly publication highlights federal technology development financing opportunities for technology entrepreneurs and lists funding opportunities offered by the federal government, foundations and other agencies derived from various sources, including the State Science and Technology Institute (SSTI).
- **FundSource:** A tool designed to help behavioral and social scientists find research funding. It has been designed to be specific to behavioral and social science research. The database includes short descriptions; contact information; and web links to programs in federal agencies, foundations, and international organizations that fund behavioral and social science research.

Government Funding

- **Grants.gov Find Opportunities service ("FedGrants.gov"):** Official federal grants and contracts search site, provides weekly email service.
- **FedBizOpps via Commerce Business Daily:** The Most Powerful Federal Bid Alert System Available! The single government point-of-entry for Federal government procurement opportunities over \$25,000. You can search, monitor, and retrieve product and services contract awards, procurement invitations, and subcontracting leads solicited by the Federal government. **See also:** fedbizoppes.gov, a direct link with limited search capability
- **NIH Guide for Grants and Contracts:** A weekly email compilation of new research opportunities from across the NIH
- **NIH News Releases:** A daily news bulletin of new programs and findings from the NIH.
- **NIH NIBIB Listserv:** A periodic email alert for programs through NIBIB and other related funding agencies.
- **NIH Behavioral and Social Sciences Research Grants Guide:** Recent publications in the "NIH Guide to Grants and Contracts" relevant to Behavioral and Social Science Research compiled and distributed by the Office of Behavioral and Social Sciences Research.
- **National Science Foundation Update (formerly MyNSF and the Custom News Service):** A daily email alert service with subscription options that include new research opportunities, upcoming deadlines, and other content categories.

Government Funding

- **NASA Research Solicitation Announcements:** An electronic Subscription Service available to obtain notification of the release of NASA research solicitation announcements.
- **CDC Cooperative Agreement Funding Opportunities Web site:** Funding opportunities from CDC that are available to members of the sponsoring associations: Association of American Medical Colleges (AAMC), the Association of Schools of Public Health (ASPH) and the Association for Prevention Teaching and Research (APTR).
- **Environmental Protection Agency:** A list of all open announcements, not an automated search site.
- **The Federal Register:** The Federal Register is the official daily publication for rules, proposed rules, and notices of Federal agencies and organizations, as well as executive orders and other presidential documents. To subscribe to the Federal Register Table of Contents LISTSERV electronic mailing list, go to listserv.access.gpo.gov and select Online mailing list archives, FEDREGTOC-L, Join or leave the list (or change settings), then follow the instructions.
- **Illinois Department of Human Services (IDHS) Grant Alert System:** Serves as a resource and provides general information pertaining to funding opportunities of interest to the non-profits serving the citizens of Illinois.
- **Faith-based and Community Initiatives:** Access to links to current Federal funding opportunities at various Federal agencies for faith-based and community initiatives.

Foundation Funding

- **The Foundation Center:** Philanthropy News Digest posts requests for proposals (RFPs) submitted by grantmakers everyday. Each RFP listing provides a brief overview of a current funding opportunity offered by a foundation or other grantmaking organization. You can subscribe to RFP Bulletin, a free listing of new RFPs delivered weekly by e-mail by visiting the Newsletters page.
- **Foundation Directory Online:** The Foundation Center's online searchable dB of grantmaker and grants data. Print and CD-ROM available at the Evanston Public Library & Donors Forum of Chicago or via purchase of a license.
- **Illinois Funding Source:** Donors Forum online dB of Illinois grantmaker profiles and grant lists.
- **Bank of America Philanthropic Management:** Free tool to search foundations and grants managed through Bank of America
- **Guide Star:** Free 990 search dB.

Other dBs

- **Grantsweb:** For: government funding and resources, general research administrator resources, private funding information, policy information & regulations, SRA international foundation list.
- **Grant Spy:** Grant Spy does the legwork for grant seekers in non-profits, government agencies, schools, police and fire departments, special districts, and other public organizations across the nation, so that they can spend less time searching for funding and more time writing proposals. Free 1 mo trial code: aagpo865311

Domain Specific Resources

- **National Association of Children's Hospitals and Related Institutions:** Funding (Federal and private) information for pediatric research and research at children's hospitals and affiliated research institutes.
- **Directory of Grants and Fellowships in the Global Health Sciences:** It includes nearly 500 funding opportunities related to biomedical and behavioral sciences, with a special emphasis on researchers in the developing world and their collaborators. An addendum listing 100 grants specifically for short-term travel and externships.
- **Youth Services America:** Grants and awards support and motivate youth, teachers, service-learning coordinators, and youth-serving organizations to plan and implement projects for Global Youth Service Day and on-going service throughout the year.

Trans-NIH Opportunities

- NIH Roadmap (Office of Portfolio Analysis and Strategic Initiatives; OPASI)
 - Transformative Ro1 Program (T-Ro1)
- Office of Behavioral and Social Sciences Research (OBSSR)
- Office of Research on Women's Health (ORWH)
- Office of AIDS Research (OAR)
- Office of Disease Prevention (ODP)
- NIH Blueprint for Neuroscience Research
- NIH Obesity Research
- The Bioengineering Consortium (BECON)
- Biomedical Information Science and Technology Initiative (BISTI)
- Model Organisms for Biomedical Research
- Trans-NIH Mouse Initiatives

Opportunities for Predocs

- National Science Foundation Graduate Research Fellowships
- DoD Nat'l Defense Science & Engineering Graduate Fellowships Program (NDSEG)
- Homeland Security Scholarship and Fellowship Program
- American Association of University Women American Dissertation Fellowships
- NIH National Research Service Awards (NRSA; ind or instit)
- Ford Foundation Predoctoral Fellowships for Minorities

Opportunities for Postdocs

- Helen Hay Whitney Foundation
- Damon Runyon-Walter Winchell Foundation
- Jane Coffin Childs Memorial Fund for Medical Research
- American Cancer Society American Heart Association
- NIH National Research Service Awards (NRSA; ind or instit)
- NIH K awards
- DHS Research Associateship Program

Opportunities for Transition Awards

- NCI Temin Award
- Burroughs Wellcome Career Awards for Medical Scientists
- BWF Career Awards at the Scientific Interface
- NIH K99/R00 Awards

Opportunities for Junior Faculty

- Burroughs Wellcome Fund New Investigator Award in Molecular Toxicology
- NSF Faculty Early Career Development (CAREER) Program & Presidential Early Career Awards for Scientists and Engineers (PECASE) Program:
- American Society for Cell Biology Women in Cell Biology Career Recognition Junior Award
- David and Lucile Packard Fellow
- Camille Dreyfus New Faculty Award & Teacher-Scholar Award
- MacArthur Fellow Program ("Genius" Awards)

Opportunities for Junior Faculty

- March of Dimes Foundation Basil O'Connor Starter Scholar Award
- Leukemia and Lymphoma Society Scholar Award
- American Chemical Society Eli Lilly Award in Biological Chemistry
- W. M. Keck Foundation Distinguished Young Scholars in Medical Research Award
- Beckman Scholar Award
- Searle Scholars Program
- Pew Scholars Program in Biomedical Sciences Protein Society Irving Sigal Young Investigator Award

Opportunities for Junior Faculty

- Sidney Kimmel Foundation Scholars Award
- Ellison Medical Foundation New Scholar Award in Aging
- American Societies for Cell Biology
- American Society for Biochemistry and Molecular Biology
- American Society for Microbiology
- Biophysical Society

Opportunities for Physician-Scientists

- American Heart Association National Fellow-to-Faculty Transition Award
- Doris Duke Clinical Scientist Development Award
- NIH K awards
- Burroughs Wellcome Fund Translational Awards
- Burroughs Wellcome Career Awards for Medical Scientists
- American Heart Association National Scientist Development Award
- American Cancer Society Mentored Research Scholar Grants in Applied and Clinical Research (formerly Clinical Research Training Grants for Junior Faculty)

Opportunities for Physician-Scientists

- American Lung Association Research Award
- American Society of Hematology Junior Faculty Scholar Award
- American Diabetes Association Development Awards
- Charles E. Culpeper Scholarships in Medical Science
- Robert Wood Johnson Clinical Scholars Program
- AGA Fellowship/Faculty Transition Awards Program
- Damon Runyon Cancer Research Foundation

RESOURCES

Professional Organizations

- American Association of Grant Professionals (AAGP)
- Grant Professionals Certification Institute (GPCI) and the Grant Professional Certification™ (GPC)
- Society of Research Administrators Int'l (SRA)
- National Council of University Research Administrators (NCURA)
- Association of Fundraising Professionals (AFP)
- National Grants Management Association (NGMA)
- Association of Proposal Management Professionals (APMP)

Regional Workshops

- NIH Regional Seminars in Program Funding and Grants Administration
- NSF Regional Grants Conference
- Other NIH workshops
 - National Animal Welfare Workshops
 - Office for Human Research Protections (OHRP) Workshops
 - Small Business Research Conferences
 - Office of Research Integrity Workshops and Conferences
- Army Research Office (ARO)/Army Research Laboratory (ARL)
- iBIO SBIR/STTR workshops

Print Resources

- Writing the Winning Grant Proposal
- The Ultimate Grants ToolKit
- The Foundation Center's Guide to Proposal Writing
- Program Planning & Proposal Writing
- Anatomy of a Grant Proposal
- Writing the NIH Grant Proposal
- Grant Application Writer's Handbook
- Guide to Effective Grant Writing
- Winning Strategies for Developing Proposals and Managing Grants
- How to Write and Publish a Scientific Paper
- Collaboration in Grant Development and Management

Nonprofit Resources

- **Donors Forum**
 - Resources
 - Workshops
 - dBs
- **General Nonprofit**
 - Nonprofit Sector Research Fund
 - Center for Lobbying in the Public Interest
 - Center for Effective Nonprofits
- **Federal**
 - White House Office of Faith-Based and Community Initiative
 - Government Benefit Programs
 - National Priorities Project
- **Children and Families**
 - Child Welfare Information Gateway
 - National Clearinghouse on Families and Youth
 - Promising Practices Network (Afterschool program listserv)
 - Promising Practices Catalog
- **Statistics**
 - FED STATS
 - National Center for Charitable Statistics
 - US Census Bureau
 - Nat'l Ctr for Health Stats (NIH, NHIS, NSFG, CDC, etc)
 - Forum on Child and Family Statistics

Grant Writing Consultants

- Me! School of Continuing Studies, Philanthropy Program
- Grant Writers' Seminar and Workshops, LLC
- FASEB Grantsmanship Training Programs
- Biotechnology Business Consultants
- **IL Department of Human Services**
- Write4Health
- The Grant Institute
- The Grantsmanship Center
- Sigma Xi-The Grantsmanship Center, Inc.
- University of Illinois at Chicago, External Education
- Seliger and Associates Grant Writing
- EditAvenue
- Grant Wrangler listing

Research Resources

- Colleagues, Supervisors, Mentors, Professional Organizations
- Federal Resources
 - NIH resources
 - NSF resources
- HHMI-BWF *Making the Right Moves*

Resources for New & Early-career Investigators

NIH

- Early Stage Investigator Status/Policies
- New Investigators Program
- New Investigator Guide to NIH Funding
- Early-career Stage Investigator Portal
- Advice to Investigators Submitting Clinical Research Applications
- Training Awards Kiosk
- Career Development (K) Awards Kiosk
- Pathway to Independence (K99/R00) Award
- Director's New Innovator Award

Other Agencies

- NSF Faculty Early Career Development (CAREER) Program
- Research Funding Opportunities for New and Young Faculty

Clinical Research Resources

- Clinical Trials Networks Best Practices: NIH Roadmap
- Advice to Investigators Submitting Clinical Research Applications
- NHLBI Clinical Research Guide
- NHLBI Pediatric Clinical Research Website
- Investigator-Initiated, Multi-site Clinical Trials
- Clinical Research Skills Development Core
- An Evidence-Based Guide to Writing Grant Proposals for Clinical Research

REVIEW PROCESS

Review Criteria

- **Mandatory** criteria reviewers consider
- Recent NIH criteria emphasize *clinical, interdisciplinary, and translational* research
- Recent NSF criteria emphasizes *transformative* research

Write Review for Reviewer

- "Do not write the application for yourself...unless you are going to fund it yourself!"
- Reviewers are never wrong/never right, they simply provide an assessment of the material provided in your application

Review Criteria – NIH

- Significance
- Approach
- Innovation
- Investigator
- Environment
- Protection of human subjects from research risk
- Vertebrate animal welfare
- Biohazards
- Additional considerations
- New criteria for 2010

Review Criteria – NIH

- **Significance-** Does this study address an important problem? If the aims of the application are achieved, how will scientific knowledge or clinical practice be advanced? What will be the effect of these studies on the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

Review Criteria – NIH

- **Approach-** Are the conceptual or clinical framework, design, methods, and analyses adequately developed, well integrated, well reasoned, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics? *For new investigators: Emphasis on feasibility rather than quantity of preliminary results.*

Review Criteria – NIH

- **Innovation-** Is the project original and innovative? For example: Does the project challenge existing paradigms or clinical practice; address an innovative hypothesis or critical barrier to progress in the field? Does the project develop or employ novel concepts, approaches, methodologies, tools, or technologies for this area?

Review Criteria – NIH

- **Investigator-** Are the investigators appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers? Does the investigative team bring complementary and integrated expertise to the project (if applicable)? *For new investigators: Emphasis on quality of training/background and not number of previous publications.*

Review Criteria – NIH

- **Environment-** Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed studies benefit from unique features of the scientific environment, or subject populations, or employ useful collaborative arrangements? Is there evidence of institutional support? *For new investigators: Evidence of institutional support.*

Review Criteria – NIH

- **Protection of human subjects from research risk**
- **Vertebrate animal welfare**
- **Biohazards**
- **Additional considerations**
 - Not factored into priority score
 - Budget
 - Foreign Institutions
 - Resource Sharing

Merit Review Criteria – NSF

- Intellectual Merit
- Broader Impact

Merit Review Criteria – NSF

- Intellectual Merit**
- **Potential of the Research to Advance Knowledge and Understanding:** How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?
 - **Qualifications of Researchers:** How well qualified is the proposer (individual or team) to conduct the project?
 - **Originality, Creativity and Transformative Nature of Proposal:** To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?
 - **Organization and Conceptual Foundation of the Proposed Activities:** How well conceived and organized is the proposed activity?
 - **Access to Necessary Resources:** Is there sufficient access to resources?

Merit Review Criteria – NSF

NSF Intellectual Merit vs. NIH Review Criteria

- Potential of the Research to Advance Knowledge and Understanding = Significance
- Qualifications of Researchers = Investigator
- Originality, Creativity and Transformative Nature of Proposal = Innovation
- Organization and Conceptual Foundation of the Proposed Activities = Approach
- Access to Necessary Resources = Environment

Merit Review Criteria – NSF

Broader Impact

- **Integration of Research and Education:** How well does the activity advance discovery and understanding while promoting teaching, training, & learning?
- **Integrating Diversity:** How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?
- **Infrastructure:** To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, & partnerships?
- **Dissemination:** Will the results be disseminated broadly to enhance scientific and technological understanding?
- **Societal Impact:** What may be the benefits of the proposed activity to society?

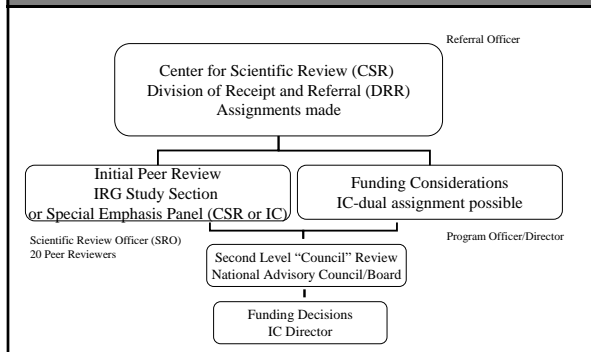
Write Review for Reviewer

- The **significance** of the results is...
- The **feasibility** of this approach is demonstrated by...
- The **outcome** of these experiments will be...
- The **innovation** of this project is defined by...
- The potential for **transformation** by this research is evident by...
- Our **team** is especially well-qualified to undertake this project because...
- Our **environment** contributes significantly to the aims of this project in that...
- This proposal will **advance knowledge**/have a **broader impact** by...

Review Process

- Each fund source has its own review process
- Federal agencies generally have formalized review panels of experts
- State agencies generally use staff as external panelists to review proposals
- Foundations generally rely on staff to make review decisions
- Panelists are given a proposal rating sheet and instructed to assign points based on how well the review criteria are met

NIH Review Process



Division of Receipt and Referral

- 12-15 referral officers
- Checks for completeness
- Determines area of research
- Assigns an identification number
- Assigns a grant number
- Assigns application to specific NIH IC for possible funding
- Assigns a Scientific Review Group
- Receives over 80,000 applications/year!

Review Purview

- Center for Scientific Review (CSR)
 - Most Ro1s, fellowships, and small business applications
 - Some Program Announcements (PA, PAR, RFA)
- Institute/Center Review
 - IC-specific features
 - Program Project Grants (PPG; P01)
 - Training grants
 - Career development awards
 - Most RFAs

Scientific Review Officer (SRO)

- Formerly SRA
- Designated federal officer
- Extramural scientist
- IDs and recruits reviewers
- Manages COI
- Oversees review meeting arrangements
- Presides at review meetings
- Prepares and releases resume + summary statements

IRGs and Study Sections

Integrated Review Groups (IRGs)

- IRGs Within CSR
- AARS AIDS and Related Research
 - BARB Behavioral and Behavioral Processes
 - BSCS Biochemical Sciences
 - BPC Biophysical and Chemical Sciences
 - BDCN Brain Disorders and Clinical Neuroscience
 - CDS Cardiovascular Sciences
 - CDF Cell Development and Function
 - ENE Endocrinology and Reproductive Sciences
 - GEN Genetic Sciences
 - IMM Immunological Sciences
 - IDM Infectious Diseases and Microbiology
 - IFCN Integrative, Functional, and Cognitive Neuroscience
 - MDCN Molecular, Cellular, and Developmental Neuroscience
 - MDD Musculoskeletal and Dental Sciences
 - NMS Nutritional and Metabolic Sciences
 - ONC Oncological Sciences
 - PCS Pathophysiological Sciences
 - RCH Risk, Prevention and Health Behavior
 - SSEM Social Sciences, Nursing, Epidemiology, and Methods
 - SBS Surgery, Radiology and Bioengineering

Scientific Review Groups (SRGs) - "Study Sections" or "Panels"

- Molecular and Cellular Biophysical Study Section (MBCBS)
- Biophysical Chemistry Study Section (BBCS)
- Metallochemistry Study Section (METS)
- Biorganic and Natural Products Chemistry Study Section (BNPC)
- Medical Chemistry Study Section (MCHS)
- Physical Biochemistry Study Section (PBBS)
- Biological Engineering & Chemistry Special Emphasis Panel (BECM SEPE)
- SBC Small Business Activities

Know your reviewers!!

Study Section Descriptions

For Chartered Study Sections:

- One-paragraph overview of the scientific areas reviewed by each study section
- Bulleted list of the key specific topics
- Links to the membership roster and the three most recent meeting rosters
- Links to related study sections that review similar areas of science

Reviewers

- 3 reviewers/proposal
 - 2 primary, write critiques
 - 1 discussant
- Telephone and mail-in reviews as well
- Chartered
 - Permanent, 4 yrs
 - Ad hoc member
- Special Emphasis Panel
- ~18,000/yr
- Expertise
- Stature in field
- Mature judgment
- Impartiality
- Geographic balance
- Diversity
- Workload
 - 6-8 as reviewer
 - 2-3 as discussant
- No COI

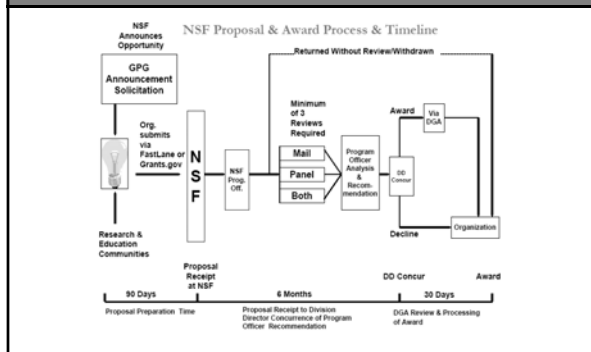
NIH Scoring

- Study section score
 - Streamlining, unscored or “triaged”
 - ~50% R01s, ~40% shared instrumentation, 30% fellowships, Pre-arranged for RFAs
- Priority score
- Percentile
- Pay lines
 - e.g. 2001 → 237 vs. 2005 → 185
- New 9-pt scoring scale for 2010

NIH Enhancing Peer Review

- Only one resubmission
- New 1-9 scoring scale
- Enhanced review criteria
- Critiques for each criterion in a structured summary statement
- Preliminary score for streamlined applications
- Separate percentiling of new vs. resubmissions
- Revised "New Investigator" designation, clustered during review
- Shorter (12 page) Ro1 applications
- Applications restructured to align with review criteria

NSF Review Process



NSF Review Process

- Proposal arrives electronically, assigned to the appropriate program(s) for review
- Review process overseen by a Division Director
- Program officer (or team of POs) reviews the proposal and assigns it to at least three external reviewers (mail or in-person review)
 - No external review required: SGER, small conferences, workshops, symposia

NSF Higher Order Review

- Division Director reviews all program officer recommendations
- Large awards may receive additional review
 - Director's Review Board reviews award recommendations with an average annual award amount of 2.5 percent or more of the awarding Division's annual budget
 - National Science Board reviews recommended awards with an annual award amount of one percent or more of the awarding Directorate's annual budget
- Grants Officer performs an administrative review of award recommendations before final approval

NSF Program Officers

- Selects reviewers and panel members
- Checks for COI
- Synthesizes the comments of the reviewers and panel
- Makes recommendation to award/decline proposal
 - External proposal reviews
 - Support for potentially transformative advances in a field
 - Novel approaches to significant research questions
 - Capacity building in a new and promising research area
 - Potential impact on the development of human resources and infrastructure
 - NSF core strategies, such as 1) the integration of research and education and 2) broadening participation
 - Achievement of special program objectives and initiatives
 - Other available funding sources
 - Geographic distribution

NSF Rating

- Descriptive, not numerical
 - Excellent
 - Very Good
 - Good
 - Poor
- Proposal funding rate
 - FY00 → 33%
 - FY07 → 26% (50% more proposals received than FY00)

Other Agencies

- Each fund source has its own review process
- State agencies generally use staff as external panelists to review proposals
- Foundations generally rely on staff to make review decisions

Proposal Rejection

- Insufficient funding
- Proposal doesn't fit funder's interests
- Deadline for submission not met
- Guidelines not followed
- Lack of new or original ideas
- Diffuse, superficial, or unfocused research plan
- Lack of knowledge of published, relevant work
- Lack of prelim data and/or experience in essential methodologies
- Budget unrealistic
- Uncertainty concerning future directions
- Questionable reasoning in approach
- Absence of an acceptable rationale
- Unrealistically large amount of work
- Lack of sufficient experimental/programmatic detail
- Uncritical approach
- Not as promising as competing applications

Moving Forward

- Read reviews carefully or inquire regarding the specific reasons your proposal was declined
- Consider ways to improve the proposal in the next round
- Consider other funders to whom you can submit the proposal

Getting a Second Look

- New Investigator
- Dual assignment
- Agency priority area
- Bridge funding
- Resubmission
 - Women vs men
 - Must have substantive changes
 - Must address—do not rebut!—issues identified in previous summary statements

PROPOSAL PLANNING

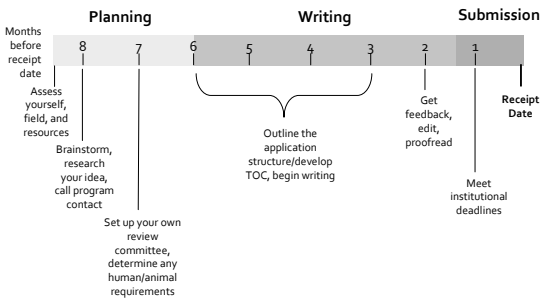
Be Proactive

- Understanding federal policy and foundation motivation
- Agency advisory councils/boards
- Requests for Information (RFI)

Eligibility

- Organization
 - Type
 - Status
 - Size
- Citizenship/Residency
- New Investigators
- Priority populations
 - Diversity
 - Re-entry

Timeline



Timeline

- Select a "grant committee"
- Discuss research goals, aims, and ideas
- Read proposal review criteria
- Draft 1 page specific aims
- Discuss w/ committee
- Refine aims according to feedback
- Draft other sections of proposal
- Check against proposal review criteria
- Seek feedback on complete draft

Due Diligence/Intelligence

- Funder's web site
- Annual Reports
- Published literature
- Awards made dBs
- Old program solicitations
- Determine if Letter of Inquiry is required
- Interact with program officials

Interact with Program Officials

- Program officers, directors, managers, SRO (NIH)
- Review and read the web site
 - Mission statement
 - Director's page
- Find a *real person*
- Ask questions
- Earlier the better

Program Officials

- Manages portfolio of grants/contracts/cooperative agreements
- Identifies opportunities and needs of science/programs specific to an organization's mission
- Stimulates interest in areas of emphasis/priority of the organization
- Communicates program priorities and develops RFAs

Program Officials

- Manages portfolio of funding opportunities
- Identifies opportunities and needs of programs specific to an organization's mission
- Stimulates interest in areas of emphasis/priority of the organization
- Communicates program priorities and develops grant solicitations
- Provide technical assistance to applicants
- Participates in review process
- Reviews annual progress of grantees, reports on accomplishments

Program Officials

- Provide technical assistance to applicants
- Observes review meetings
- Discusses review issues with applicant
- Evaluates programmatic merit and mission relevance of applications
- Prepares funding recommendations
- Reviews annual research progress of grantees
- Reports on research/program progress and accomplishments

Concept Paper

- Facilitates productive discussion with program officer
- Study goals – you want support to do what
- Problems/background – why does this topic need a study/funding; Demonstrate you know the organization's priorities
- Significance – why is this important to the field
- Research question – what hypothesis will you test
- Problem statement – what need are you addressing
- Design/analysis – what design/methodology do you propose
- Team- who will be key participants and collaborators

Proposal Guidelines

- Keep the original funding announcement, register for addendums
- Read ALL proposal and form instructions
- Recognize funding announcement key elements
- Note what is *not* eligible for funding
- Follow proposal instructions EXACTLY
- Note submission deadline *and* time
- Use correct form package (Grants.gov)
- Online vs paper submission
- Formatting (e.g. font size/style, margins)
- Read and understand review criteria
- Program Official contact information
 - Submit questions
 - Attend bidder/technical workshop

Organization and Presentation

- Organization = happy reviewers = \$
- Craft a title that is informative
- Use section headings
- Be consistent!!!
- Detailed Table of Contents
- Be familiar with page layout features of software program
- Design tables and figures that are self-explanatory

PROPOSAL COMPONENTS

Proposal Functions

- Sales Piece – develop a link between the missions of the funder and your research
- Concept Paper – Describes your plans: why, what, and how
- Plan – Step-by-step working plan, what objectives you'll be shooting for
- Agreement – Legal, binding agreement
- Evaluation Design – Basis for evaluating the project/program, clear and detailed picture of your intentions

Component Overview

- Letter of Intent
- Cover Letter
- Face Page
- Description/Abstract/Project Summary & Relevance
- Public Health Relevance Statement/ Narrative
- Senior Personnel
- Table of Contents
- Budget and Justification
- Biosketches
- Resources/Facilities, Equipment, & Resources
- Research Plan

Component Overview

- Research Plan/Project Description
 - Introduction (resubmission/revision)
 - Specific Aims Section: Hypothesis and Aims
 - Background and Significance/Introduction
 - Preliminary Studies/Progress Report
 - Research Design and Methods (incl Evaluation Plan)
 - Bibliography/References Cited

Component Overview

- Consortium/Contractual Arrangements
- Letters of Support
- Resource Sharing Plan
- Protection of Human Subjects
- Inclusion of Women and Minorities
- Targeted/Planned Enrollment Table
- Inclusion of Children
- Vertebrate Animals
- Select Agent Research
- Multiple PI/PD Leadership Plan
- Appendix(ces)

Letter of Intent

- Facilitates productive discussion program officials
- Program goals – you want support to do what
- Problem statement – what need are you addressing
- Background – why does this problem need a funding; Demonstrate you know the organization's priorities
- Significance – why is this important
- Approach – what methodology do you propose
- Team – who will be key participants

Cover Letter

- Program information
 - Grant title
 - Program name and number
 - Disciplines involved
- Directs proposal to appropriate section of funding agency (e.g. I/C)
- Reviewers
 - Recommend review group and study section
 - Recommend competitors who should not review
 - Suggest expertise needed for appropriate review
- One request per line

Table of Contents

- Sections listed in TOC in the order in which they appear
- Page numbers
- *Detailed* section headings

Abstract / Project Summary & Relevance

- Summary of the proposed work
- No past accomplishments
- Broad, long-term goals and specific aims
- Relevance of project/program to agency mission
- Approach and methods for achieving the goals
- Use third person
- Address *all* review criteria
- Usually one page or less
- In the public domain if proposal funded
- Write last

NSF Project Summary

- Must explicitly address both
 - Intellectual Merit
 - Broader Impact

**Public Health Relevance Statement/
Narrative**

- Specific to NIH/HHS, new component
- Public health relevance statement
- 2-3 sentences only
- Describe relevance of research to public health
- Use lay language

Budget

- Presents proposal/program in a financial sense
- Reflects the plan and how resources will be allocated to implement the plan
- Tells how the money will be used to the work described in the proposal/program
- All budget items should relate to project/program objectives

Budget

- Budget for each year of support requested
- Amounts requested for each budget line item should be documented and justified in the Budget Justification
- Permissible if item and amount are considered necessary, reasonable, allocable, and allowable under the applicable cost principles
- Direct costs
- Facilities & Administrative (F&A; Indirect) Costs

Budget

- Use categories developed by agency
- Relate line items to program objectives
- Reasonable requests
- Include all amounts/items asked of funder
- Include all amounts/items to be paid for by other sources, including donations and in-kind support
- Explain overlap with other sources of funding

Budget Justification

- Use categories developed by agency: In same order as on Budget form
- Relate line items to program objectives
- Reasonable requests
- Include all amounts/items asked of funder
- Include all amounts/items to be paid for by other sources, including donations and in-kind support
- Carefully justify
- Explain overlap with other sources of funding
- Cost share judiciously
- Be explicit about institutional support

Biographical Sketch

- Biosketch
- Required for all Key/Senior Personnel
- Not a CV or resume
- Varies at each agency
- NIH – new Public Access Policy
 - PubMed Central (PMC) ID required

Facilities, Equipment, and Resources

- Scientific/Program environment
- Subject populations
- Useful collaborative arrangements
- Develop boilerplate text for your organization/lab/team

Research Plan / Project Description

- Introduction (resubmission/revision)
- Specific Aims Section/Goals & Objectives
 - Hypothesis/Needs Statement
- Background and Significance/Introduction
- Preliminary Studies/Progress
- Research Design and Methods/Program Plan (incl Evaluation Plan)
- Bibliography /References Cited
- 5-25 pages

Introduction

- Resubmission
- Revision
- Address past critiques
- Progress made
- 3 pages

Specific Aims Section

- Most important section of the proposal
- Short applications are expanded versions
- Can serve as a pre-proposal or executive summary
- Most difficult section to write
- Must engender enthusiasm for your research
- Start broad, move towards specificity
- Cohesive, highly focused
- 1-2 pages

Specific Aims Section Model #1

- Title HFK2
- Significance
- Background
- Hypothesis
- Approach
- Innovation
- Impact

Specific Aims

- Specific research objectives
- Relate to the broad, long-term goal(s)
- Test the hypothesis
- Lead to results upon which you can draw conclusions
- Structure as end points, not best efforts
- Attainable in the stated time frame, not long-term goals
- Measurable, discrete
- Determine and predict the content and specific types of experiments to be conducted
- When all aims are reached, testing of the hypothesis will be complete
- Brief and clear: 2-5

Slide 134

HFK2 Need to build out this model w/ add'l slides
hjf799, 3/2/2009

Background & Significance / Introduction

- **NOT** a review of the literature in the field
- Consider Significance, Investigator, and Environment
- Provide reviewers with all info to review grant AND get excited about your research
- Penultimate section
- 2-3 pages

Background & Significance / Introduction

- Strategic emphasis to significance over background. Review literature selectively and critically, show how your proposed work will fill gaps in knowledge, consider potential reviewers
- Identify knowledge gap/leads to need. State why work is important in the broad context of public health/science.
- Broad overview of past accomplishments & activities then most recent findings/successes
- Outline a conceptual model for the research, e.g., diagram of hypothetical causes and effects

Background & Significance / Introduction

- Review state of knowledge in field to justify your choice of specific aims
- Describes innovation, justify your proposal
- Review status of methodology in the field to justify experimental approach, if necessary
- Restate the importance of your work in the context of your field of investigation, how the results will matter
- Mission relevance to agency

Preliminary Studies / Progress

- Consider Investigator, Approach, Innovation, Environment
- Past experiences and accomplishments
- Critically interpret outcomes
- Show how they support your proposal
- Subject collection/availability of required population
- Experience with proposed methods or document availability of "borrowed" expertise
- Existence of functional and productive team
- New Investigators special consideration

Research Design & Methods

- Conceptual or clinical framework, procedures, and analyses to be used
- How data will be collected, analyzed, and interpreted; data-sharing plan as appropriate
- New methodology and advantage over existing methodologies.
- Novel concepts, approaches, tools, or technologies
- Procedures, situations, or materials that may be hazardous to personnel and the precautions to be exercised

Research Design & Methods

- Evaluation Plan
- Potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims
- Provide a tentative sequence or timetable for the project

**Research Design & Methods
Model #1**

- Specific Aim (restated)
- Rationale for aim and design
- Approaches to be taken
- Experimental detail/controls
- Anticipated results
- Interpretation of data
- Alternatives
- Summary of Aim

**Research Design & Methods
Model #2**

- Research Design
 - Outline experimental design approach, outcome measures, timeline)
 - Rational for design (definitive, feasible, economical)
 - Defend specific research approach (population/experimental group, experimental model)
 - Design limitations + contingencies

**Research Design & Methods
Model #2**

- Methods
 - Format for quick reference, organize around aims
 - Justify method selection (validity/reliability, feasibility, cost)
 - Describe methodologies, special attention to novel or difficult
- Analytical Plan
 - Data analysis and statistical methods
 - Predicted outcomes and relationship to hypothesis
 - Implications of design limitations and feasibility of meaningful outcomes
- Summary of limitations and strengths

Limitations of Your Plan

"It is to applicants' credit to highlight potential hiccups in their research protocols--as long as adequate methods to overcome those problems are included. It is a common and costly mistake to leave this kind of information out of your research plan."

NIGMS Program Director

Timeline and Priorities

- Timeline for start and stop of key activities
- Prioritize proposed experiments/activities
- Put risky experiments/activities at the end of the timeline
- Show via text, graphics, or both

Evaluation Plan

- Help you determine whether objectives are measurable
- Monitors the progress of your program
- Measure the degree of success of your completed program
- Must align with objectives
- Activities and timeframes for evaluating each objective once your program is implemented
- Measure the outcomes you desire
- All findings into an available report

Evaluation Plan

- How you will measure objectives
- How you will measure your methodology
- Who will conduct the evaluation
- May include examples of the instruments to be used
- Types of evaluation
 - Process evaluation – plan to assess and improve methods
 - Results/Outcome evaluation – progress toward objectives

Program Assessment

- Reaction Assessment
 - Indication of the degree to which your audience found your program to their liking
 - Least info re: program effectiveness
- Learning Assessment
 - Degree to which participants have acquired new knowledge
- Behavioral Assessment
 - Extent to which the program was able to bring about some actual change in participants' behavior
- Impact Assessment
 - Difference the program has made to the need/problem

Bibliography/References Cited

- Publications cited in the Research Plan and other parts of your application
- ~100 citations, don't skimp on essentials because this section helps show your breadth of knowledge of your field
- Citation must list the names of all authors (do not use "et al.") in the same order as in the source publication plus the article title, name of the book or journal, volume number, page number range, and year of publication
- If an article is online on a public site, include the link or PubMed Central identification number
- NIH-funded investigators must include PMC ID numbers in all applications and progress reports
- No page limit

Consortium/Contractual

- Programmatic, fiscal, and administrative arrangements between the applicant organization and the consortium organization(s)
- If consortium/contractual activities represent a significant portion of the overall project, explain why the applicant organization, rather than the ultimate performer of the activities, should be the grantee

Letters

- Letters of Recommendation
- Letters of Support
- Letters of Commitment
- Letters of Consortium/Contract Arrangement

Demonstrating Support

- *Compelling* support
 - What support and form support will come in is defined
- Examples
 - NU/the PI has our utmost level of support for this application. As partners we will...
 - We will do all that we can to support our valued partner/the PI, including...
 - This proposal should be funded and we wholeheartedly support it by ...
- Letter of Memorandum
 - More detail
 - Assignment of values (\$, time, space)

Other Components

- Resource Sharing Plan
- Protection of Human Subjects
- Inclusion of Women and Minorities
- Targeted/Planned Enrollment Table
- Inclusion of Children
- Vertebrate Animals
- Select Agent Research
- Multiple PI/PD Leadership Plan
- Appendix(ces)

PROPOSAL SUBMISSION

Grant Forms

- Paper
 - PHS398 and PHS416
 - Office of Management and Budget (OMB)
 - Health and Human Services
- Electronic
 - NSF FastLane and others
 - Grants.gov SF424

Electronic Submission Process

- Prepare to apply
- Register in eRACommons (NIH) or agency system (FastLane, NSPIRES)
- Find opportunity and download/access (specific) package
- Prepare application
- Submit application via online system
- Check status in eRACommons (if Grants.gov)
- Check assembled application
- Submission complete

Electronic Submission

- Most proposal packages are no longer paper
- NSF FastLane
 - Server based
- Grants.gov
 - Common Federal grant application forms
 - FOA (funding opportunity announcements); specific for a given RFA or grant type
 - eRACommons registration required
 - NOT server based

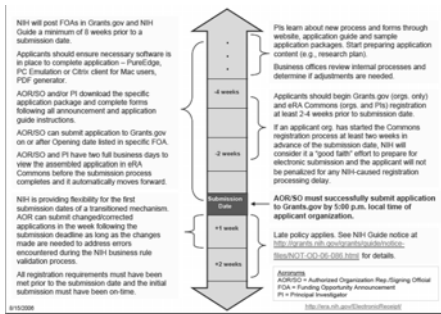
Grants.gov

- SF424 Research and Related (R&R) forms
 - Consistent e-submission process for all agencies
 - SF424 (R&R) plus agency-specific forms
- Each FOA has its own forms package
 - Each package contains all required forms
 - **DO NOT** use sample form packages or packages from other announcements!
- Requires special viewer (PureEdge) or system-system transfer
 - NOT a server based system
 - Special instructions for Mac users
 - Problems if not using MS Explorer as your viewer
- Moving to Adobe-based system

Grants.gov Definitions

- Grant Tracking Number
 - Assigned to proposal by Grants.gov upon submission
- Accession Number
 - Assigned by Agency (replaces Agency Tracking Number)
 - Replaces Grant Tracking Number
- Application definitions
 - New Application
 - Resubmission (prev Revised)
 - Renewal or Competing Renewal (prev Competing Continuation)
 - Revision (prev Competing Supplemental)
- Federal Identifier = Grant number (R01, R42, Po1, U54)
- Authorized Organizational Representative (AOR; prev Signing Official)

Grants.gov Submission Countdown



On-time Submission

- All registrations completed prior to submission deadline
- Successful submission to Grants.gov with timestamp on or before **5:00 p.m. local time** on the due date
- Errors/warnings corrected and the submission process complete within the error correction window following the submission deadline

TEAM SCIENCE

Multi-project Proposals

- Collaboration and interaction among investigator-initiated projects and investigators to achieve a common goal
- At least two inter-related research projects related to a theme
 - P01, Program Project Grants (PPGs)
 - P50, Specialized centers of research
 - U19, Multiproject cooperative agreements
 - U54, Specialized Center-Cooperative Agreement
 - Investigator initiated or solicited by PA/RFA
- Simultaneous R01 submission allowed

Collaborative Science

- NIH NIGMS Administrative Supplements for Collaborative Science
 - Smaller scale collaboration vs P01 or even multi-investigator R01 programs
 - Support for R01, R37, and SC1 awards
 - Support new collaborations not anticipated at the time of original submission

Consortia and Linked Awards

- Consortia
 - Subcontracts/Subawards
- Linked Awards
 - UL1 (NIH)
 - IRC
 - CTSA
 - Collaborative Proposal (NSF)

Multiple PI/PDs

- Team approach
- Complex problem
- Supplement, not replace, single PI model
 - Will not apply to some awards (F31/32, R36, S10, DP1, K awards)
- Project authority and responsibility
- Distribution of credit
- Allocation of funds
- Decision must be consistent with the scientific/program goals of the project
- Must develop a Leadership Plan

Leadership Plan

- Roles/areas of responsibility of the PIs
- Fiscal and management coordination
- Process for making decisions on scientific direction and allocation of resources
- Data sharing and communication among investigators
- Publication and intellectual property (if needed) policies
- Procedures for resolving conflicts

Grantsmanship for the Research Professional

- May 14-5, 2009; Wieboldt Hall, 339 E. Chicago Ave, Chicago campus (Ev campus course this summer)
- Tuition: \$595.00 (Employee SCS tuition discount; can be paid via CUFS)

Grantsmanship for the Research Professional

- Using electronic search tools to effectively identify appropriate funding opportunities;
- Mastering fundamental principles of grant proposal writing;
- Developing proposals that meet an agency's mission;
- Developing the hypothesis and specific aims sections of proposals;
- Incorporating review criteria into your proposal writing;
- Mastering electronic proposal submission;
- Increasing the opportunity of getting a proposal funded
