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Finding Funding and Grant Writing

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Finding Funding and Grant Writing

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Broad Goals for this Talk

<u>Assist you in:</u>

- Defining your fundable research goals
- Selling your plans
  - proposal
  - funding agencies
- Recognizing opportunities and pitfalls

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Academic Career Goal: Tenure Requires Successful Proposals

Have Idea - Submit Proposal

- Is your idea good enough for a proposal ?
- Who may have an interest in your idea?
- Why and how to approach a Program Manager ?
- Pulling a proposal together and selling it
- Do not assume that your idea will “sell” easily

What is a Research Proposal ?

A Proposal is:

- NOT a way to get your hands on some money
  - No support available for “research” as busy activity
- a PLAN towards an innovative RESEARCH RESULT
- the basis for a BUSINESS DEAL (contract / grant) that offers your good research result in return for financial support
  - What is a “good idea” leading to an innovative result ?
  - Who may be interested in this result ?
  - What does it take to convince a funding agency to listen ?

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Plan for my Presentation

- Do you have an idea worth funding ?
- Match your idea to the interests of a funding agency
- Contact a program manager of a funding agency
  - Visit and discuss concept paper, try to get his/her buy-in
- Importance of following all the rules
- Some suggestions for proposal writing

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Is your idea worth funding?

- Do not aim for research for which there is no funding
- Have a crisp description of your idea
- Study published research interests of funding agencies
- Determine the best match between them and your goals

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Match Your Idea to the Interests of a Funding Agency

Federal Funding (examples)

- DHHS / NIH
- National Science Foundation
- Commerce Department - NIST
- Defense Department - DoD
- Department of Energy - DOE
- Dept. Homeland Security - DHS
- NASA
- DOJ / NIJ
- HUD
- Education Department
- NEH
- NEA
- EPA

Foundation & Corporation Funding (examples)

- Kellogg Foundation
- Robert Wood Johnson
- Boston Foundation
- Bio-Rad Corporation

- Note: The NU "Corporate and Foundation Advancement" Office oversees non-federal funding opportunities

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National Science Foundation Directorates

- Biology
  - Behavioral Neuroscience
- Computer Information Sciences & Engineering
  - Computational Neuroscience
- Crosscutting
- Education
- Engineering
  - Neural Engineering
- Geosciences
- International
- Math, Physical Sciences
- Polar Research
- Social, Behavioral, Economic Sciences
  - Cognitive Neuroscience

NSF Website:
http://www.nsf.gov

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DHHS:
Partial List of NIH Institutes

- National Cancer Institute (NCI)
- National Institute on Aging (NIA)
- National Institute of Biomedical Imaging and Bioengineering (NIBIB)
- National Institute of Child Health and Human Development (NICHD)
- National Library of Medicine (NLM)
- National Institute of Environmental Health Sciences (NIEHS)
- National Institute of Mental Health (NIMH)
- National Institute of Nursing Research (NINR)

NIH Website
http://www.nih.gov

Agency Guidelines and Deadlines

- National Science Foundation:
  - Grant Proposal Guide:
  http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpg_index.jsp
  - Funding Opportunities Sorted by Deadlines
  http://www.nsf.gov/home/ebulletin/
  - NSF Proposal Writing Guide (February 2004)
  http://www.nsf.gov/pubs/2004/nsf04016/start.htm
  - Fast Lane Homepage:
  https://www.fastlane.nsf.gov/fastlane.jsp

- National Institutes of Health:
  - Instructions for Public Health Service Grant (PHS 398):
  http://grants1.nih.gov/grants/funding/phs398/phs398.html
  - Application and Electronic Submission Information (SF 424 (R&R))
  http://grants1.nih.gov/grants/funding/424/index.htm
  - Guide for Grant and Contract Opportunities:
  http://grants1.nih.gov/grants/guide/index.html

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DOD and DOE Funding Opportunities

- Army Research Office
  http://www.arl.army.mil/main/main/default.cfm?Action=29&Page=29
- Congressionally Directed Medical Research Program
  http://cdmrp.army.mil/funding/dmrdp.shtml
- Also search grants.gov for other Army Medics announcements under "USAMRAA"
- Office of Naval Research
  http://www.onr.navy.mil/
- Air Force Office of Scientific Research
  http://www.afosr.af.mil
- Defense Advanced Research Projects Agency
  http://www.darpa.mil/
- Department of Energy
  http://science.energy.gov

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Other Important Websites

- Homeland Security Websites Incl.

  S&T Section: https://baa2.st.dhs.gov/portal/BAA/

  HSARPA - a useful link:

  http://www.sourcewatch.org/index.php?title=Homeland_Security_Advanced_Research_Projects_Agency

- Listing of all Federal Agencies:

  http://www.loc.gov/rr/news/fedgov.html

Searchable Databases

For Northeastern University on campus users only (needs subscription):

IRIS: http://iris.library.uiuc.edu/~iris/search.html

PIVOT: http://pivot.cos.com

All government agencies: http://www.grants.gov

go to "find grant opportunities" on the left side of the screen

Test your Idea in a Concept Paper

- A concept paper is a good starting point for a proposal
  - describes an innovative idea / approach to solve a well defined problem or a well documented shortfall
  - relate to funding agency's published interests
- What is the problem or shortfall ?
- Why is the solution to the problem important ?
- How will the problem be solved ?
- What will be the END RESULT ? = MOST IMPORTANT
  - what are the implications of your promised contribution ?
- What is a realistic estimate of your funding needs?
- What is the RETURN ON INVESTMENT for the funding agency ?
- Aim for no more than two pages: Elevator Speech
- Show / discuss / scrub concept paper with colleagues

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Call a Program Manager

- Find Program Manager name and his programmatic goals (agency interests) from available sources
- Important perspective before the contact:
  The PM is your colleague, mentor and helper
- Goal: to make him/her an interested listener
  - put your research interests in the perspective of the published programmatic goals of the PM and the agency
  - Explore his/her or agency's interest in your idea
- Try to gain him/her as professional friend
- First send an email inquiry, then follow up with a phone call
- NEVER mention funding !!
  - focus on PM's interest in subject of proposal
  - wait for PM to discuss funding

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Meeting with the Program Manager

What do you want to get out of your meeting ?

- Introduce yourself, get on his/her radar screen
- Find out how your research objectives match the PM's and the agency's goals - SPECIFICALLY
- Get feedback on your ideas

What can you learn from a Program Manager ?

- Program scope, focus, and objectives
- Program Data (budgets, award rates, etc.)
- Relationships with other programs
- New funding opportunities and solicitations
- But do not expect clear-cut support of your ideas

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At the Meeting …. (Do's)

<u>What you should:</u>

- Come with and discuss a well prepared Concept Paper
- Be prepared to state: "the objective of my research is … "
- Be brief and to the point, mention context and impact
- Listen for feedback
- Explore the interest of the PM in your research
- Ask for related Agency brochures, announcements and contacts
- At NSF: Volunteer to be on a proposal review panel !!!
- Leave short Bio and business card with the PM,

  AND your Concept Paper

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At The Meeting …. (Don’ts)

<u>What you should NOT do</u>:

- Talk to yourself about yourself from your own perspective
- Launch into a prepared 40 minute presentation
- Overwhelm the PM with data, papers, view graphs, etc.
- Explain to the PM what his/her agency should do
- Force-fit your interests to the published program objectives and vice versa
- Talk about funding before PM supports the idea
- Wait for the PM to end the meeting

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Important Points to Remember

- Proposals are offers
  - sell an innovative, attractive idea or planned research result for an attractive price
- A Proposal must fit into agency's goals
  - be competitive
  - must "please" the evaluators
- All NSF proposals need to have
  - intellectual merit
  - broad impact / good return of investment for agency
  - statement on mentoring post docs (if any)
  - ideas on translational opportunities

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Start the Proposal

There is no “Formula” for a successful proposal

BUT There is always a format to follow, e.g. NSF Proposal Guide

- Read the Request for Proposals (RFP) once more
- The scope must be research / education, and not development
- Contact your RAF (Research and Finance) Officer as soon as you start working on your proposal
  - Obtain credentials to submit proposal
  - Familiarize yourself with your university’s submission process (Proposal Processing Form)
  - Line up support for budget preparation
- Solicitations have deadlines, windows of submission, etc.
  - Plan to get a well written proposal in on time (5 days prior to due date to RAF)
- A milestone chart / schedule may be beneficial

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Proposal Format (1)

(NSF Grant Proposal Guide GPG)

<u>All Proposals Follow about the Same Format</u>

- Abstract / Project Summary
- Background / Literature Review / Context
- Earlier Research Results from other Grant Support
- Objective / Goal
- Project Description / Approach / References
- Expected Results / Impact
- Detailed Budget / Budget Justification
- Experience / Resources / Infrastructure
- Appendix Materials / Relevant Required Agency Forms

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Proposal Format (2)

(DHHS SF 424 R&R Application Submission Information)

<u>All NIH Proposals Follow this Format (section 5.5 abbreviated)</u>

- Specific Aims
  - objectives, e.g., test a hypothesis
  - expected outcome
  - Impact
- Research Strategy
  - significance
  - innovation
  - approach

Proposal Preparation Steps

- Follow the proposal guidelines exactly
- Understand the evaluation criteria
- Document what has already been done and what you will contribute / “fill a gap”
- Place research in context of stated long- and short-term goals (announcement, Program Manager)
- Balance research goals with education / teaching, mentoring, outreach plans (important for NSF proposals)
- Design a budget to match activities

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Proposal Writing Tips (1)

- Read all applicable guidelines for grant application
- Focus on a well defined research topic
- Emphasize a well quantifiable “end result”
- Fine tune the narrative to the agency’s needs
- Read published evaluation criteria in RFP
- Get help from friends

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Proposal Writing Tips (2)

Project Description of a Proposal

- The first 2 to 3 pages capture the interest of the reader
  = VERY IMPORTANT
- Remember:
  - this is not a journal article or a dissertation ,but presents a research plan or promise towards an innovative "end result"
  - focuses on "selling" the who, why, what, how, and when

Proposal Writing Tips (3)

- Write abstract or Project Summary last, use third person
- Write Project Description of the proposal in the first person
  - Write in the active voice (you want to sell your idea)
  - Project a confident tone (the reader needs to trust you)
  - Use strong action words (use “I will”, not “I may”)
- Use appropriate headings and sub-headings consistently
- Break up dense text: use charts, bullets, visuals
- Use spelling and grammar check (computer can help)
- Seek feedback from multiple readers

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Project Summary (aka Abstract): "the most important page"

- WHAT: Clearly state the research objectives / goals first
- WHY: Is the research really needed ? Justification !
- HOW: Describe the major research and education tasks briefly
- WHO: Provide information on you and your team and why you are uniquely qualified to perform this research
- Collaboration: If there is more than one PI, demonstrate strengths and synergy of the team

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Project Summary (aka Abstract) "the most important page"

For NSF: In three paragraphs, limited to one page:

- State up-front your research and education goals and integration of both - your Vision
  - Why is this research needed ?
  - What difference will your research and education goals make?
  - Describe the major proposal tasks very briefly
  - Provide information on why you are uniquely qualified to perform this research.
- Intellectual Merit
- Broader Impact

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The Proposal may also have to address:

Research Compliance:

- Human Subjects Research Protection
- Division of Laboratory Animal Medicine
- Responsible Conduct of Research
- Export Control Requirements
- Environmental Concerns

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NSF FastLane Submission

(follow the Grant Proposal Guide)

Obtain Fast Lane access credentials

Familiarize yourself with FastLane

FastLane Proposal Sections:

- Cover Sheet
- Project Summary
- Table of Contents
- Project Description
- References Cited
- Biographical Sketches
- Current and Pending Support
- Facilities, Equipment & other Resources
- Supplementary Documents
- Budget and Justification
- List of Suggested Reviewers (optional)

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Submitting the Proposal

NOTE: The Office of Research Administration and Finance (RAF) will submit all Proposals on your behalf - legal requirement

Submission Process (FastLane example):

- Notify RAF early of your intent to submit
- Get RAF help in preparing budget if necessary
- Each PI needs to be registered with NSF
- Familiarize yourself with FastLane process and requirements early on
- Enter appropriate proposal sections into NSF FastLane
- Complete Proposal Processing Form (PPF), with required signatures. The PPF stays in the proposal folder in the RAF files
- SUBMIT PROPOSAL TO RAF NO LESS THAN 5 DAYS PRIOR TO PROPOSAL DUE DATE for review and final electronic submission
- RAF will submit proposal to NSF

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Proposal Submitted - Now What?

Proposal is funded:

- Notify Dean, Chair, partners
- Meet with RAF to set up account, get pro-card
- Begin research

Much later:

- Complete research
- Write final report
- Assist RAF in closing out account

Proposal is not funded:

- Obtain reviewer comments
- Share with colleagues
- Talk to the program officer
- Start on a revised proposal for re-submission
- Look for other sources of potential funding
- Re-submit a revised proposal

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Goals of this Presentation

- Develop an idea into a Concept Paper
- Search for available interest / funding for an idea
- Access to funding agencies
- Contact a Program Manager
- Suggestions for a good proposal
  - importance of following guidelines
  - a well presented, compelling idea and end result win
- Proposal submission requirements

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