

Strategies for Preparing a Grant Application

Kerim Munir, MD, MPH, DSc

kerim.munir@childrens.harvard.edu

Tel + 1617-355-7166; Fax: +1 617-730-0252

Boston Children's Hospital, Harvard Medical School

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Objectives

- To describe a topography of grant writing process
- To describe its relevance for research ethics training
- To have time for discussion

Outline

- Main components of a grant proposal
- Strategies for selecting a topic
- Strategies for writing effectively
- Assembling the research team
- Establishing a timeline for grant writing
- Grant review process

General Advice

- Search thoroughly to find the best match between what you want to do and a funding source
- Find out everything you can about the funding source
- Number of applications in a typical cycle, % of applications funded
- Reviewers' interests and credentials

General Advice

- Talk to (contact) people at the funding agency to review/clarify details of the announcement.
- Details are important!
- Talk to previous successful applicants to the funding agency

General Advice

- Study the announcement thoroughly and frequently
- Get in the head of the agency
- Understand their mission

General Advice

- Allow at least twice the time you think it will take to write the proposal.
- Especially time to refine the final version

General Advice

- Choose experienced collaborators as co-investigators, if possible
- Seek mentoring. Get help
- Test your ideas on colleagues

General Advice

- Multi-disciplinary and inter-institutional groups often have a better chance with many funding agencies
- Especially related to Public Health and/or international projects

General Advice

- Review the literature to identify the gaps and needs in your area
- You must propose good science and/or fill an important need

General Advice

- Write clearly.
- Explain preliminary data.
- Don't assume the reviewers know your field.
- Proofread and have someone else proofread.
- Non mistake are acceptable (have a native English speaker proofread)

General Advice

- As much as possible, use the exact words from the announcement in your proposal
- You might use the announcement as the initial draft of your proposal

General Advice

- Don't give reviewers a reason to eliminate your proposal
- Overworked and underpaid reviewers have very many other very good proposals to consider in a short time period

General Advice

- If at all possible, get reactions from outside reviewers who will be critical.
- Ask them to be tougher than the reviewers will be
- Get real!
- “Do you like me to be your friend or do you like me to tell you the truth!”

General Advice

- Be creative, but honest, about cost-sharing
- All agencies like to see their money multiplied by in-kind and other contributions from applicant institutions

Some Resources on Grant Writing

- <http://www.niaid.nih.gov/ncn/grants/default.html>
- <http://www.niams.nih.gov/funding/tips.html>
- http://www.niddk.nih.gov/fund/grants_process/grantwriting.html
- <http://deainfo.nci.nih.gov/EXTRA/EXTDOCS/gntapp.html>
- <http://www.drugabuse.gov/Funding/Grantapps.html>
- <http://www.niams.nih.gov/funding/tips.html>
- <http://grants.nih.gov/grants/guide/notice-files/not97-010.html>

NIH Grant System

- **RFA** = Request for Application (one time)
- **PA** = Program Announcement (recurring)
- **Cooperative Agreement** = NIH staff has a prominent and on-going role in all aspects of the work throughout the life of the grant

Review Criteria

- Significance
- Approach
- Innovation
- Investigators
- Environment

Significance

- What is the importance of the work?
- Why should they give you money?
- What is the relevance?
- If you are successful, so what?
- What is the rationale?
- Why this work at this time?
- What is the usefulness?
- How will this work fit into future work?

Approach

- Is there a hypothesis?
- Is it too ambitious? Be realistic!
- Is it focused?
- Is it clear?
- Are there alternative approaches?
- Can the reader understand it?
- Are the statistical analyses appropriate?

More on the Approach

- Detail needs to be right
- Need clear and complete preliminary data
- How does this build on the preliminary data?
- Are there alternatives?
- Are the pitfalls addressed?
- What will you do if the first part fails? Does everything else depend on it?
- What will you do if it all succeeds?
- Are you challenging what is already known?

Investigator

- Is the investigator trained and able?
- Investigator background and expertise, as indicated in publications
- Collaborators and “*whose project is it anyway?*”
- Letters of agreement from collaborators and consultants?

Environment

- Institutional support: show the institution is behind you:
 - Laboratory space
 - Personnel
 - Start up funds, if relevant
- Basis on which to build the work:
 - Adequate equipment and resources
 - Access to qualified personnel

Human Subject Concerns

- <http://ohrp.osophs.dhhs.gov/index.html>
- Federal Wide Assurance (FWA)
- The Federal Policy (Common Rule) for the protection of human subjects at Section 103(a) requires that each institution "engaged" in Federally-supported human subject research file an "Assurance" of protection for human subjects. The Assurance formalizes the institution's commitment to protect human subjects. The requirement to file an Assurance includes both "awardee" and collaborating "performance site" institutions.
- Institutional Review Board (IRB)
- Independent Ethics Committee (IEC)

Specific Issues Related to the Funding Agency

- Why is the research being done in the foreign country?
- What is the benefit to the funding agency or government?

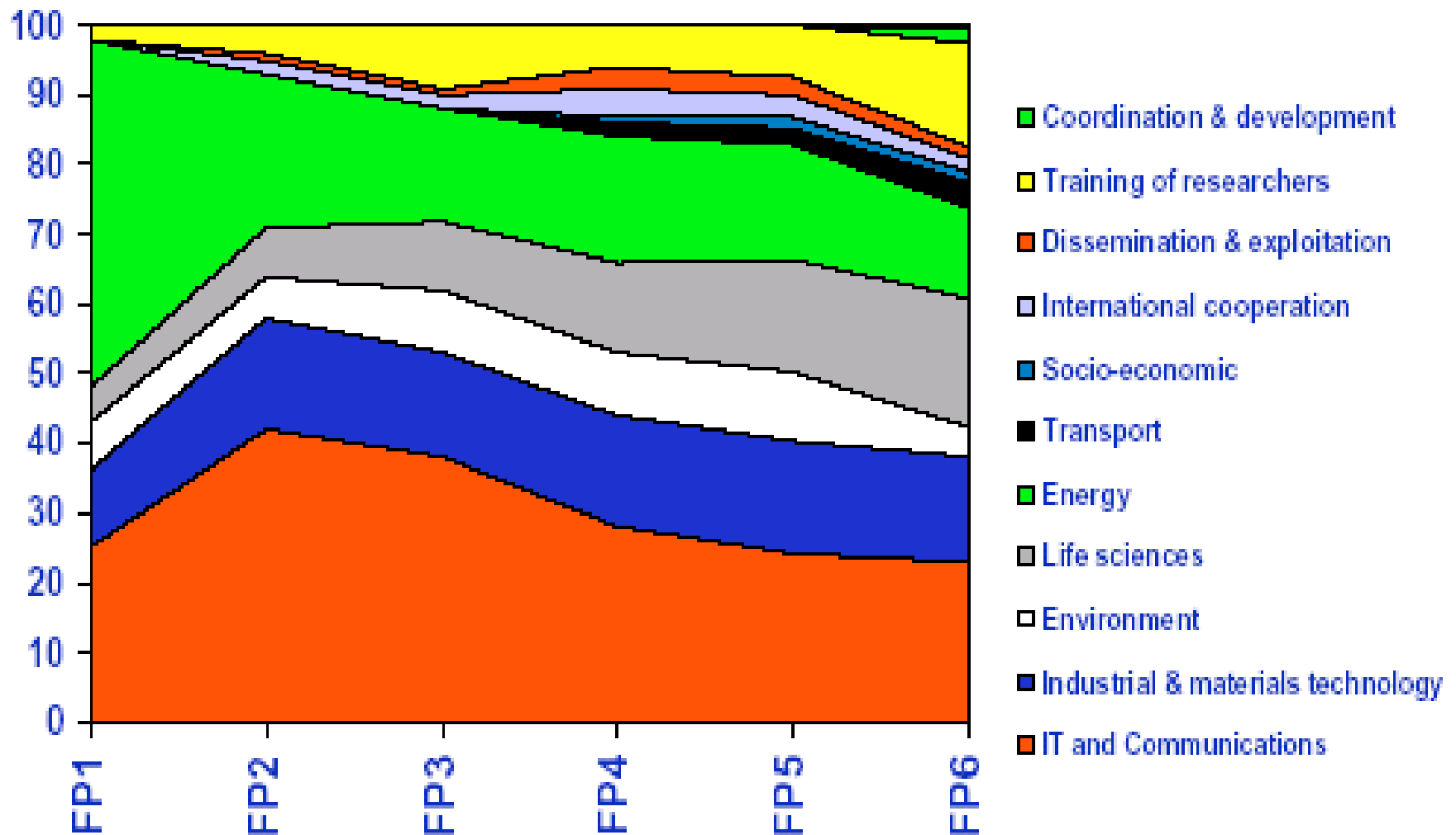
Typical Time Line

- Announcement published
- Deadlines
- Letter of intent
- Application received
- Review decision
- Internal center decision
- Council meeting
- Award is made

Other Sources of Funding

- Grand Challenges Canada – Bill and Melinda Gates Foundation
- EU Frameworks
- Wellcome Trust
<http://www.wellcome.ac.uk/en/1/gra.html>
- National Science Foundation
- U.S. Civilian Research & Development Foundation (CRDF)
 - www.crdf.org
- Listing of possible grant opportunities
 - <http://www.proposalwriter.com/intprocure.html>

EU Changing Priorities



Letter of Intent (LOI)

- Some funding agencies request this
- Helps the agency to understand the proposed work
- Helps the agency to identify reviewers
- Program Officer may ask questions and give advice

Primary Components of a Grant Proposal

- Title
- Abstract
- Specific aims and hypotheses
- Background and significance
- Literature review and theoretical framework
- Methods
- Dissemination plan/plan to build upon the work.
- Preliminary studies/research team credentials
- Institutional qualifications
- Budget
- References
- Appendix

Strategies for Selecting a Topic

- What do I want to study?
 - Personal interests
 - Gaps in the scientific literature
 - Issues/problems identified through interactions with colleagues
 - Societal issues or trends
 - The impact of legislative initiatives
 - Public documents and reports by government agencies (i.e., Healthy People 2010)
 - Funding agency goals and priorities
- How does this project fit into my overall research agenda?

Strategies for Effective Writing

- Use clear, focused, and precise language to describe your ideas.
 - Be concise.
 - Avoid jargon.
 - Avoid abbreviations.
 - Avoid colloquialisms.
 - Do not try to sound intellectual by using big words.
 - Avoid redundant phrases.
 - Keep overused phrases to a minimum (i.e., “research suggests”).
 - Proofread carefully for typographical and grammatical errors.

Strategies for Effective Writing

- Make your grant proposal reader-friendly.
 - Use a font size of 11 or 12.
 - Separate paragraphs with a space to break up the text.
 - Use tables and graphs to minimize large blocks of text.
 - Make use of headings to clarify the sections of the proposal.

Strategies for Effective Writing

- Getting started:
 - Outline the major sections of the proposal.
 - Write a brief concept paper or mini-proposal.
 - Write an initial draft without worrying about grammar.
 - Refine the rough draft into a polished proposal.
- Seek feedback from co-investigators/collaborators.
- Solicit an external review from someone working in your field.
- Incorporate outside feedback, and be prepared to write several “polished” drafts.

Strategies for Effective Writing

- A concept paper or mini-proposal should summarize the following:
 - Significance of the proposed research
 - Specific aims/research questions
 - Design and methods
 - Estimated budget
 - Key personnel

Strategies for Effective Writing

- Concept papers can be used to:
 - Develop and organize the key components of the proposal.
 - Obtain feedback from colleagues.
 - Provide a framework for the grant-writing team.
 - Share ideas with the funding agency.

Research Team Members

- Principal Investigator (PI): Oversees the entire project and takes responsibility for scientific integrity.
- Co-Investigators/Collaborators: Contributes a particular area of expertise to the project.
- Project coordinator/director: Manages the day-to-day details of the project.
- Interviewers: Collects data from participants.
- Interventionist: Implements an experimental protocol in intervention studies.
- Data base manager: Establishes and maintains data files.
- Statistician: Determines and conducts appropriate statistical analysis.

Establish a Timeline

- Make a list of all of the tasks involved in writing your grant.
 - Refine study focus
 - Assemble a research team
 - Write specific aims/hypotheses
 - Summarize the relevant scientific literature
 - Draft a concept paper/mini proposal
 - Solicit feedback from co-investigators, collaborators and funding agency
 - Write the complete grant proposal
 - Develop a budget
 - Solicit feedback from co-investigators/collaborators
 - External review
 - Revise, revise, revise
 - Collect letters of support

Review Process

- Once submitted, your grant proposal will be assigned to a permanent or ad hoc review panel.
- The review panel will evaluate your proposal for scientific and technical merit and make a recommendation for funding.
- The review typically occurs in two phases.
 - Phase 1: Individual reviewers read and evaluate each proposal.
 - Phase 2: The panel of reviewers convenes to discuss the proposal that were submitted and assign a score to each proposal. A representative from the funding agency oversees this phase of the review.

Review Process

- Following the review you will receive a summary of the reviewers' discussion and their funding decision.
- Funded--time to celebrate!
- Not funded:
 - Contact the funding agency to inquire about options to resubmit your proposal.
 - Consider the likelihood of future success based on your current score.
 - Read and assess whether you can respond to reviewer comments and suggestions.
 - Discuss the score and reviewer comments with someone from the funding agency and your research team.
 - Decide whether to revise and resubmit your proposal in the next funding cycle.

Thank you!