Funding your research career

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Rich Lehoucq

Why research funding?

- Travel to conferences, workshops
- Undergraduate/graduate students and postdocs
- Computers, books, etc
- Summer salary
- Career advancement
- Undertaking the research that interests you

When to start thinking about funding?

- Career advancement
  - Talk to the dept or division to find out how important getting money is in promotions, etc.
- Probably not so important as a graduate student but certainly you should be aware of what's involved

Funding available

- Fellowships
- Proposal based (1-3 years of funding)
- Travel awards
- National Labs
- Industry (not so familiar here)

What funding is out there?

- Use the internet—the great equalizer
- Ask colleagues—chairman, senior faculty (in math and outside of math), peers

Develop your ‘sources’ of information

A closer look at proposal based research

- Typical scenario is to apply for a multiyear award (three years is common)
- This covers the national science foundation (NSF), department of energy, (DOE), defense advanced research projects agency (DARPA), national institute of health (NIH)

These are among the most painful proposals to write (but as is often the case, become easier with repetition).

How the process unfolds

- An RFP is issued (request for proposals). The RFP is available on the agency website.
- 2-3 month deadline. Often, you'll have several months warning that an RFP is going to 'hit the streets' (recall your sources)
- The RFP details the research topics, content, structure etc.

Proposal components

- 15-20 page description of your proposed research + an abstract
- Budget sheets (breakdown of where you will spend the money). Relax, someone in your department or institution can help
- Vita (start the process of periodically updating your vita)
- Well defined proposal submission—don't wait until the last minute. *Stay on top of the process.*

Advice

- Program directors manage the process of peer reviewing the submitted proposal
- Call up the program director and get clarification
  - if you happen to be in the area or the program director and you are attending a conference, introduce yourself
  - Talk over your idea to get feedback, what you can expect, subsequent opportunities.

More advice

- Consider teaming up with someone (or a group) with more experience to learn the ropes
- Get feedback before, during and after the proposal submission
- Learn to accept criticism and how to listen. This is a big step in improving. Negative comments can be helpful.
- Do not become discouraged. You'll learn a lot by organizing your research on paper and having them peer reviewed.

Something to keep in mind

- Your reputation counts for *a lot*
  - publications
  - professional service (for instance, referee papers in a timely fashion), help organize meetings, hold offices.
  - high-quality presentations make a difference because they say something about you. Do you dot your i's and cross your t's?

Further advice

- If your proposal receives funding, do solid work to show that the investment made in your research was warranted. This involves publication and professional service
- Serve on proposal review panels and/or review proposals

Final thoughts

- Right or wrong, research funding does require entrepreneurial skills
- The decision is yours
- Personally, interacting with colleagues (peers, students, postdocs) does a tremendous amount to drive my research and stimulate my creativity.