



# **Writing Proposals and Getting Funded at a Primarily Undergraduate Institution**

**Martin Wong & Laura Rademacher**

*with contributions from*

*Rachel Beane, Richelle Allen-King, Heather Macdonald &  
Cathy Manduca*



# Think – Pair - Share

- **Based on your experience reviewing proposals...**
  - What commonalities do you observe about great proposals?

# Critical Pieces of a Proposal

- **A clearly articulated, doable project**
  - State hypothesis or research questions clearly
- **A well-formulated argument for why this is important, how this fits into previous work, and why you are the one to do it**
- **A definite plan for implementation**
  - What will success look like?
- **A track record**
  - Preliminary data/previous publications/pilot projects
  - Partnerships with recognized experts

# Funding Opportunities

- **NSF-RUI: Research in Undergraduate Institutions**
  - support PUI faculty in research
  - builds capacity for research at their home institution
  - supports the integration of research and undergraduate education
  -
- **NSF-ROA: Research Opportunity Award**
  - support PUI faculty research
  - allow faculty to work as visiting scientists at research-intensive organizations where they collaborate with other NSF-supported investigators.
  - May be a new collaboration between PUI and another institution, a supplement to an existing award at research institution, or a re-budget of an existing award to support PUI faculty

*[http://www.nsf.gov/crssprgm/rui\\_roa/contacts.jsp](http://www.nsf.gov/crssprgm/rui_roa/contacts.jsp)*

# Funding Opportunities

## **NSF-REU: Research Experience for Undergraduates**

- ***REU Sites*** projects that engage a number of students in research. They may be based in a single discipline or offer multi-department research opportunities.
- ***REU Supplements*** may be a component of new proposals or requested for ongoing NSF-funded projects. Investigators should contact that program officer before submitting the request.

*<http://www.nsf.gov/crssprgm/reu/faculty.jsp>*

# Funding Opportunities

## **American Chemical Society Petroleum Research Fund**

### **UNI: Undergraduate New Investigator Grants**

- \$55,000 over 2 years
- PI in department without doctoral program
- Seed money to demonstrate proof of principle
- Related to research in the petroleum field

### **UR: Undergraduate Research**

- \$70,000 over 3 years
- PI in department without doctoral program
- Related to research in the petroleum field

*<https://www.acs.org/content/acs/en/funding-and-awards/grants/prf/programs.html>*

# Funding Opportunities

## **EDMAP**

- Education component of National Cooperative Geological Mapping Program.
- Faculty request funds to support students in one year mentored mapping project on specific geographic area.
- Every Federal dollar that is awarded is matched with university funds.
  - Urgrad projects limited to \$7500 (plus match)

*<http://ncgmp.usgs.gov/about/edmap.html>*

# Funding Opportunities

- **Student-driven proposals**
- Geological Society of America
  - Northeastern, South-Central, and Southeastern Sections
  - <http://www.geosociety.org/grants/ugrad.htm>
- Sigma Xi
  - Grants in aid of research program
  - <https://www.sigmaxi.org/programs/grants-in-aid>
- AEG
  - Multiple award types
  - <https://www.aegfoundation.org:16450/funds/>

# Proposal Review

- **What are the criteria?**
  - NSF
    - Criterion 1: Intellectual Merit
    - Criterion 2: Broader Impacts
    - Program Guidelines
  - Your institution
  - American Chemical Society, NASA, NOAA, Dept of Education, Dept of Energy, Dept of Transportation, ONR, EPA, US Geological Survey EDMAP, ...
- **Who are the reviewers?**



# Reviewing Successful Proposals

# Writing a Strong Proposal

- **Grant writing as a persuasive essay**
  - What do you want to do?
  - Why is it important?
  - How will you do it?
  - Why are you the best person to do this?
  - What do you need to succeed?
- **Clear, concise, compelling**
- **Follow the rules**

# Words of Wisdom

- Know what you want and why you want it
- Avoid upsetting reviewers - take care to cite relevant sources, give credit where due
- Approach it as a 'hypothesis testing' proposal rather than 'voyage of discovery' proposal.
- Contact relevant program officer – questions about ideas, mechanics – before submission

# Read successful proposals

- On-site proposal collection
- Proposal collection on the Cutting Edge website

*[http://serc.carleton.edu/NAGTWorkshops/  
earlycareer/research/funding.html](http://serc.carleton.edu/NAGTWorkshops/earlycareer/research/funding.html)*