NSF Graduate Research Fellowship

Background and Advice

Michael Jacobson

April 9, 2018
4-5pm
Recent Campus Awardees

Elizabeth Cope Feurer, Ph.D. student
Clinical Psychology

Aliona Tsypes, Ph.D. student
Clinical Psychology

Katherine Frost, Ph.D. student
Behavioral Neuroscience, Psychology
GRFP Program Goals

- Help ensure the vitality and diversity of the scientific and engineering workforce of the United States
- Select, recognize, and financially support future STEM leaders
- Broaden participation in science and engineering of underrepresented groups
Supported Disciplines

- Chemistry
- Computer and Information Science
- Engineering
- Geosciences
- Life Sciences
- Materials Research
- Mathematical Sciences
- Physics and Astronomy
- Psychology
- Social Sciences
- Science, Technology, Engineering and Mathematics Education (research-focused)
Not Supported by NSF GRFP

• Business administration or management
• Social work
• Medical, dental, law, or public health programs
• Joint science-professional degree programs, e.g., MD/PhD, JD/PhD, etc.
• Education (except research-focused STEM Education programs)
Key Elements

- Three years of financial support
  - $34,000 Stipend per year
  - $12,000 Educational allowance to institution per year
- International research opportunities
- Access to cyber-infrastructure resources
- Applications due in October, Awards announced in April
- Value of Honorable Mention designation
General Eligibility

- U.S. citizens, nationals, and permanent residents
- Early-career students
- Pursuing research-based MS or PhD in NSF fields
- Enrolled in accredited U.S. institution by the following Fall
Number of Applications

- Undergraduates
  - Apply as a Senior or as a post-baccalaureate

- Graduates
  - Limited to one application in 1\textsuperscript{st} or 2\textsuperscript{nd} year of Graduate School- no more than 12 months of graduate school
Application

• Personal, Relevant Background, and Future Goals Statement (3 pages)

• Graduate Research Plan Statement (2 pages)

• Transcripts, uploaded into FastLane

• Three letters of reference required
Personal, Relevant Background, and Future Goals Statement (3 pp)

• Outline educational and professional development plans and career goals
  • Advance knowledge in STEM fields
  • Broader impacts/ outreach
• Describe personal, educational and/or professional experiences
• Highlight results of activities
• Specify your role in activities
Graduate Research Plan Statement (2 pgs)

- Original research topic
  - Idea
  - Approach
  - Unique resources needed?
  - Important literature citations?

- Address potential to advance knowledge and understanding within science

- Address potential for broader impacts on society
Three Reference Letters

- Five slots available for applicants to list reference writers
- Speak to your abilities and potential
- Provide referees sufficient time to write strong letter
- Discuss/share application with referees
- Reference letters should reflect your ‘intellectual merit’ and ‘broader impacts’
- Track submission of letters in Fastlane application module – remind if necessary
GRFP uses Holistic Review

• Funding the applicant, not the research
• All application materials are equally considered
  – Personal narrative
  – Research plan
  – Broader impact activities
  – Letters
  – Transcript
Intellectual Merit and Broader Impacts

• What is the potential for the proposed activity to:
  – Advance knowledge and understanding (Intellectual Merit);
  – Benefit society (Broader Impacts)

• How original are the proposed activities?

• Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale?

• How qualified is the individual to conduct the activities?

• Are there adequate resources available to carry out the proposed activities?
Insights from the NSF Review Process to improve competitiveness of our applicants

- Applicants must demonstrate they have maximized opportunities at their institutions
- Research experiences are essential, multiple are common
- Research plan is commensurate with experience
- Presentations and written work of some kind
- Track record with broader impact activities
- Letters of rec about specific character traits and intellect
- Vision as a scientist (understanding of the scientific enterprise)
- Genuine personal narrative (drive and curiosity)
Research Experience

• Research
  – Laboratory, equipment, field work
  – Publications, Papers, Posters
  – Show you have the knowledge to carry out proposed research
Broader Impact Experience

• Shows you can carry out your proposed Broader Impacts program

• Do you have experience with Broader Impacts?
  – Mentoring/Teaching
  – Presenting research at conferences or public talks
  – Outreach at a K-12 school
  – Science festival- University Mall Day
  – Volunteered at a science museum
  – Hosted a science related blog or podcast

• If lacking experience, use the summer to gain experience
Establish a Research Identity

• Who are you as a person and a researcher?

• What do you want to accomplish with your research?

• Who would you like your audience to be?

• Do you have a preferred method for outreach?

• Who would you partner with?
Fellowship Application Support

• We are here to help!
  – Graduate School
    • Sarah Lam- sarahlam@Binghamton.edu
  – Undergraduate Research Center
    • Valerie Imbruce- vimbruce@binghamton.edu
  – Office of Strategic Research Initiatives
    • Michael Jacobson- mjacobso@binghamton.edu
    • Christi Cartwright-Wilcox- ccartwri@binghamton.edu
    • Robert Lawrence- rlawrenc@binghamton.edu
  – Harpur College
    • Kevin Boettcher- kboettch@binghamton.edu
Applying for NSF GRFP before starting a PhD program
(student experience)

Aliona Tsypes, M.S.
Department of Psychology
Binghamton University
Background

✓ Graduated with a B.A. in Psychology from Hunter College (City University of New York) in January 2013

✓ Worked in several research labs during and after undergrad

✓ Applied to Clinical Psychology PhD programs and NSF GRFP in the Fall of 2013
Preparing to apply

- Read the official NSF GRFP program solicitation (intellectual merit and broader impact criteria)
- Start researching and writing early (if possible) and ask for feedback
- Tell a compelling story with both of your essays
- Make your essays visually appealing
Essay 1: Background and goals

✓ Might be similar to your graduate school personal statements (what you have done, learned, and where you are going)

✓ Demonstrate how your experiences have led you to your career path and research or research interests

✓ Consider a separate section for broader impact
Essay 2: Research Proposal

- Make sure the project is both novel and feasible in 3 years
- Make your proposal flow from your previous research experiences
- Explicitly state what makes your work original
Reviewer Comments: IM

- Proposal should build on previous work
- Make sure to show a deep connection between your research proposal and your research interests and experiences to date (i.e., DO NOT propose a project that does not appear to naturally stem from your research program as this is not a training grant per se, they are investing in the applicant’s potential)
- The applicant should already have the experience to complete the proposed project
- ANY relevant pilot data is plus
Reviewer Comments: IM (cont.)

- Be clear about your theoretical framework
- Specifically state potential implications of your project for the understanding/advancement of an area in your field
- A study should be reasonable to execute within the given timeline
- Need to have access to the equipment required for the proposed project
- If your project includes vulnerable and/or difficult to recruit populations, it might be helpful to comment on how you are approaching this issue
- Academic record is generally important for this application (if any concerns/low grades, might be good to ask a letter writer to explicitly address that)
Reviewer Comments: BI

- Commitment to long-term outreach (e.g., volunteer experience in line with the proposed project)
- Propose the ways in which your work could be disseminated (Be creative! Think about all the opportunities available in modern day and age)
- Propose the ways in which your work can include and/or be disseminated to underserved populations (e.g., research participants, students, conference attendees, community event presentation, guest lectures at schools)
THANK YOU!

QUESTIONS?

atsypes1@binghamton.edu
Applying for the NSF Graduate Research Fellowship Program

Elizabeth Cope Feurer, M.S.
Clinical Psychology
Binghamton University
Background before applying

- Graduated with a B.S. in Psychology from UNC Chapel Hill
- 2 year post-bac research position
Preparing to apply

- Read the official NSF GRFP program solicitation
- Start early!
- Read examples of prior NSF essays: www.alexhunterlang.com/nsf-fellowship
- Make sure your two statements are cohesive
Intellectual Merit

- The **potential of the applicant to advance knowledge** based on a holistic analysis of the complete application including both statements, academic record, previous research experience, and publications and presentations.
Broader Impacts

- The potential to benefit society and contribute to the achievement of specific, desired societal outcomes

- Both by the research itself and *activities related to the project*
Merit Review Criteria Tips

- Gain research experience early (if possible!)
- Use headings
- Give your letter writers the merit review criteria along with your application
- Make sure your broader impacts are feasible
THANK YOU!

QUESTIONS?

efeurer1@binghamton.edu