Components of a Successful Application: Advice From Past Recipients

August 31, 2016

Hannah Hausman
NSF GRFP Benefits

www.nsf.gov/grfp

- Graduate Research Fellowship
- Stipend of $34,000 for 3 years
- Cost of education allowance to your institution for $12,000
- International research opportunities: GROW
- Professional development opportunities: GRIP
Eligibility

• Up to two application attempts
• Once prior to graduate school
  – Undergraduate senior
  – Post-bachelor in the year before graduate school
• *Once* during graduate school
  – *Either* your first
  – *Or* second year
<table>
<thead>
<tr>
<th>Fields of Study</th>
<th>Deadline</th>
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</thead>
<tbody>
<tr>
<td>Life Sciences, Geosciences</td>
<td>Monday October 24</td>
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<tr>
<td>Computer and Information Science and Engineering, Engineering, Materials Research</td>
<td>Tuesday October 25</td>
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<tr>
<td>Psychology, Social Sciences, STEM Education and Learning</td>
<td>Thursday October 27</td>
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<tr>
<td>Chemistry, Mathematical Sciences, Physics and Astronomy</td>
<td>Friday October 28</td>
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<td>References</td>
<td>Thursday November 3</td>
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Know Your Audience

• Volunteers selected by NSF based on their interests and academic qualifications
• Reviewing 40-50 applications in an online database, alone, around the winter holidays
• Scientists and engineers in your field, but not necessarily your specific research area

Be concise, direct, specific
What Are They Looking For?

• How your experiences, attributes, and academic achievements demonstrate the potential for significant achievements in science and engineering.

• NSF seeks to fund future STEM leaders and not just scientists.
How Will You Demonstrate It?

Two Criteria:

1. **Intellectual Merit**: potential to advance knowledge
2. **Broader Impact**: Potential to benefit society

Two Documents:

1. 2-page research proposal
2. 3-page personal statement
Intellectual Merit Criterion

Overall Assessment of Intellectual Merit
Very Good

Explanation to Applicant
The candidate has several short term undergraduate and professional research experiences that span intellectually broad topics. The candidate clearly is able to problem-solve extremely well, utilizing her background very effectively. The candidate broadens scientific outreach via her publication and numerous talks. The research plan provides defined hypotheses and research plan for evolution of a novel synthetic counter.

Broader Impacts Criterion

Overall Assessment of Broader Impacts
Excellent

Explanation to Applicant
The candidate’s DIYbio work indicates commitment to scientific outreach and communication with high impact along with teaching on campus with significant curriculum/software development. The candidate has integrated outreach in the research plan showing extensive and sustained interest in educating others about science.
Intellectual Merit
Advancing Knowledge

• Demonstrated potential for significant research achievements in STEM

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<td>Relevant knowledge</td>
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<td>Plan and conduct research</td>
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**Intellectual Merit**

**Advancing Knowledge**

- Demonstrated potential for significant research achievements in STEM

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<td>• Plan and conduct research</td>
<td>• Awards</td>
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<tr>
<td>• Collaborate</td>
<td>• Data analysis, programming, and other technical skills</td>
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<tr>
<td>• Analyze data</td>
<td>• Research assistant, honors thesis</td>
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<td>• Interpret and communicate research</td>
<td>• Professional experience</td>
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<td>• Research articles or presentations</td>
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What makes you unique?
Broader Impact

Benefit Society

• Demonstrated potential to advance *specific* desired societal outcomes

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Broader Impact
Benefit Society

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<td>• Increased participation of underrepresented groups: women/minority, students with disabilities, veterans</td>
<td>• Tutoring, teaching, or mentoring</td>
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<td>• Improved STEM education</td>
<td>• Community outreach: science clubs, radio, TV, newspaper, museums, aquarium</td>
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How do convey passion and commitment?
Tell a story; don’t give a laundry list of achievements.
Putting It All Together: Research Proposal

Intro
• What scientific question *needs* answering?
  – How is it creative, original, potentially transformative?

Methods / Anticipated Results
• How will you answer that question?

Conclusion
• What is the project’s potential to improve society?
Introduction
• Describe your personal, educational and/or professional experiences that motivate your decision to pursue advanced study.

Meat of Essay
• How do your experiences prepare you for grad school?
• How did they advance knowledge in STEM fields and have broader societal impacts?
  — What did you do? Who did you do it with? What was the product? What did you learn?

Conclusion (.5 page)
• What are your future academic and broader impact plans?

Craft a compelling, unique story
Reference Letters (3)

• Email references now

• Tell them what your “story” is going to be

• Provide them examples of intellectual merit and broader impact you want them to emphasize
Next Steps

• Develop your research plan with your advisor ASAP
• Contact reference writers
• Begin drafting personal statement and research plan
  – Outlines available online from multiple resources
  – We’ll go over next time
Next Time: Refining Your Application

- Wednesday October, 5
- This room 5:00-6:30

- Bring your computer
- Bring a printed double-spaced draft of
  - Personal statement
  - Research proposal
Other Resources

http://grfpessayinsights.missouri.edu
http://www.alexhunterlang.com/nsf-fellowship
http://www.clairemckaybowen.com/fellowships.html
Panel Discussion