Fellowship Summary: NSF, NDSEG

Lester Mackey July 1, 2009

NSF GRFP

- Deadline: November
- Requirements
  - References: 3
  - GRE: General required, Subject test optional
  - Academic Transcripts
- Details
  - Tenure: 3 years
  - Stipend: 30,000
  - Awards: 900-1600

Personal Statement

NSF Fellows are expected to become knowledge experts and leaders who can contribute significantly to research, education, and innovations in science and engineering. The purpose of this essay is to demonstrate your potential to satisfy this requirement. Your ideas and examples do not have to be confined necessarily to the discipline that you have chosen to pursue.

Describe any personal, professional, or educational experiences or situations that have prepared you or contributed to your desire to pursue advanced study in science, technology, engineering, or mathematics.

Describe your competencies and evidence of leadership potential. Discuss your career aspirations and how the NSF fellowship will enable you to achieve your goals.

You MUST provide specific details in this essay that address BOTH the NSF Merit Review Criteria of Intellectual Merit and Broader Impacts in order for your application to be competitive. Please refer to the Program Announcement for further information on the NSF Merit Review Criteria.

Previous Research Experience

Describe any scientific research activities in which you have participated, such as experience in undergraduate research programs, or research experience gained through summer or part-time employment or in work-study programs, or other research activities, either academic or job-related. Explain the purpose of the research and your specific role in the research, including the extent to which you worked independently and/or as part of a team, and what you learned from your research. In your statement, distinguish between undergraduate and graduate research experience.

If you have no direct research experience, describe any activities that you believe have prepared you to undertake research. At the end of your statement, list any publications and/or presentations made at national and/or regional professional meetings.

You MUST provide specific details in this essay that address BOTH the NSF Merit Review Criteria of Intellectual Merit and Broader Impacts in order for your application to be competitive. Please refer to the Program Announcement for further information on the NSF Merit Review Criteria.

Proposed Plan of Research

Fellowship Summary: NSF, NDSEG

Lester Mackey July 1, 2009

In a clear, concise, and original statement, present a complete plan for a research project that you may pursue while on fellowship tenure and how you became interested in the topic. Your statement should demonstrate your understanding of research design and methodology and explain the relationship to your previous research, if any.

You MUST provide specific details in this essay that address BOTH the NSF Merit Review Criteria of Intellectual Merit and Broader Impacts in order for your application to be competitive. Please refer to the Program Announcement for further information on the NSF Merit Review Criteria.

Format: Include the title, key words, hypothesis, research plan (strategy, methodology, and controls), anticipated results or findings, literature citations, and a statement attesting to the originality of the research proposal. If you have not formulated a research plan, your statement should include a description of a topic that interests you and how you would propose to conduct research on that topic.

Research topics discussed in your proposed plan will be used to determine eligibility. Refer to the Field of Study eligibility criterion in the program announcement.

NSF Merit Review Criteria

- **Intellectual Merit:** The intellectual merit criterion includes demonstrated intellectual ability and other accepted requisites for scholarly scientific study, such as the ability to: (1) plan and conduct research; (2) work as a member of a team as well as independently; and (3) interpret and communicate research findings. Panelists are instructed to consider: the strength of the academic record, the proposed plan of research, the description of previous research experience, the appropriateness of the choice of references and the extent to which they indicate merit, Graduate Record Examinations (GRE) General and Subject Tests scores, and the appropriateness of the choice of institution for fellowship tenure relative to the proposed plan of research.

To evaluate the intellectual merit criterion, panelists will consider: the strength of the academic record, the proposed plan of research, the description of previous research experience, references, Graduate Record Examinations (GRE) General and Subject Tests scores, and the appropriateness of the choice of institution relative to the proposed plan for graduate education and research.

- **Broader Impacts:** The broader impacts criterion includes contributions that (1) effectively integrate research and education at all levels, infuse learning with the excitement of discovery, and assure that the findings and methods of research are communicated in a broad context and to a large audience; (2) encourage diversity, broaden opportunities, and enable the participation of all citizens-women and men, underrepresented minorities, and persons with disabilities-in science and research; (3) enhance scientific and technical understanding; and (4) benefit society. Applicants may provide characteristics of their background, including personal, professional, and educational experiences, to indicate their potential to fulfill the broader impacts criterion.

To help panelists evaluate the broader impacts criterion, applicants should provide characteristics of their background, including personal, professional, and educational experiences, to indicate their potential to fulfill the broader impacts criterion.

Review criteria applied to Proposed Plan of Research

Fellowship Summary: NSF, NDSEG

Lester Mackey July 1, 2009

What is the intellectual merit of the proposed activity?

- How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

- How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Fellowship Summary: NSF, NDSEG

Lester Mackey July 1, 2009

NDSEG

- Deadline: January
- Requirements
  - References: At least 3
    - References should be scientists, engineers, or faculty members who have current or recent knowledge of your academic accomplishments or your professional experiences.
  - GRE: General required, Subject test optional
  - Academic Transcripts
- Details
  - Tenure: 3 years
  - Stipend: 30,500 – 31,500
  - Awards: ~200

Publications, Presentations, Patents & Patent applications

Enter all relevant peer-reviewed publications and presentations pertaining to your field since entering college. These may include articles, journal submissions, and conference proceedings. Also enter any patents obtained or patent applications filed.

Awards & Honors

Enter all scholarships, academic honors, scientific or engineering student leadership roles, honorary societies, and any other recognition since entering college. All awards and honors granted by the U.S. Government should have the "Federal Award" box checked, with the agency granting the award specified in the description, such as NASA or the NSF. It is strongly recommended that you group similar awards together. For example, list together all awards that directly derive from your grade point average such as Dean's List recognition.

Scientific or Research Experiences

Describe, in chronological order, all scientific or research experiences since entering college. These experiences may include current projects, internships, or positions of employment.

Leadership Experiences

Describe or list any leadership experiences, such as class president, committee chairperson, or scouts, with dates. There is a 400 character limit.

Teamwork Experiences

Describe or list any teamwork experiences (which can include research or academic projects as well as varsity sports, extracurricular groups, or clubs) with dates. There is a 400 character limit.

Memberships & Certifications

Describe or list any educational or professional memberships such as IEEE, SWE, or Tau Beta Phi, and

describe or list any certifications, such as Engineer-In-Training. There is a 400 character limit.

Community & Volunteer Work

Provide a summary of volunteer work and experiences, interests and/or hobbies. Also include the approximate number of hours a week for each experience. There is a 400 character limit

Summary of Goals

In your own words, provide a summary of your educational program objectives and your long-range professional goals.
As part of this statement, we are interested in your ideas about: (1) the kinds of research in which you would like to be engaged during your graduate study or in the longer term; or (2) specific research questions that interest you and how you became interested in them.
Please discuss these research interests in sufficient detail for an expert who is technically competent in your field to judge your understanding of the questions to be addressed. This includes relevant hypotheses and approaches one might take to answering the questions, and other research principles required to investigate the research area you identify.
However, we **do not** want this to be a recapitulation of a grant submission. We are interested in not only the science, but also your longer-term goals and how the science fits into your life as an individual.
Your response will be limited to 3,000 characters, including spaces. There is no extra space for citations. If you are writing this text elsewhere and copy-pasting it into this box, be aware that some word processing programs will transfer spaces and returns differently.
The statement you present in this part of the application should be reflective of your ability to think independently and creatively, as well as your ability to write about your research or study plans accurately, thoughtfully, and concisely. The panelists evaluating your responses will be highly qualified professionals and faculty members, generally with doctoral degrees in the discipline you have selected. Be sure to include in your written response all relevant information pertaining to your goals.