Graduate Fellowships 101: Available Opportunities and Mechanics of the Applications

Part I

Agenda for Tuesday, September 11, 2018

- Some forewords: · Prof. O. Marcelo Suárez
- NSF GRFP and Other Fellowship Opportunities · Prof. Eduardo I. Ortiz
- Fellowship Experiences: Sylvia Rodríguez-Abudo
- Discussion – Q&A

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Those promised forewords...

Support for your graduate studies

• Own funding: loans, salary from work in a private company (only if in Master’s program), etc.

• Teaching assistantships

• Research assistantships (if your advisor has funding)

• Project assistantships (not always available in all schools)

• Fellowships and other scholarships

😊 Advantages and disadvantages 😊
NSF Graduate Research Fellowship Program (GRFP) and Other Fellowship Opportunities

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Thanks to Dr. Rosimar Rios-Berrios and Dr. Luis Martinez-Tossas!

Hispanic Scholarship Fund

• HSF scholarship award amounts range from $1,000-$5,000. The average award amount is $2,500 for students attending four year institutions and $1,250 for students attending two year institutions.
• Be a community college, undergraduate or graduate student
• Be a U.S. citizen or an eligible non-citizen
• Have plans to enroll FULL-TIME in a degree seeking program at a two or four year U.S. accredited institution in the U.S., Puerto Rico, U.S. Virgin Islands or Guam in the upcoming academic year.
• Be pursuing first undergraduate or graduate degree
• https://www.hsf.net/scholarship
Hispanic College Fund

• Last year the Hispanic College Fund awarded $2 million to more than 615 students nationwide. More than 80 percent of the scholarships that were awarded were for students studying business, science, technology, engineering, and math.

• HCF Scholars include some of the nation's top college students. Through the HCF network, students have started careers at companies like Lockheed Martin, Estee Lauder Companies, and Google.

• **Who Can Apply?** The minimum eligibility criteria for HCF scholarship programs are:
  • Must be a U.S. citizen or a permanent resident residing in the 50 states or Puerto Rico
  • Must have a minimum GPA of a 3.0 on a 4.0 scale
  • Must plan to enroll as a full-time undergraduate student from Fall 2009 - Spring 2010
  • Must plan to be enrolled in a college or university in the U.S. or Puerto Rico
  • Each scholarship program has its own set of criteria. Each scholarship application site will state the full list of requirements for each program

• [http://www.hispanicfund.org/programs/hyi](http://www.hispanicfund.org/programs/hyi)

GEM Fellowship (Deadline: November 3)

The National GEM Consortium's primary focus is to administer and award fellowships with paid internships to highly qualified under-represented students who wish to pursue graduate studies in engineering or science.

GEM provides three Fellowship Programs:
• **MS Engineering Fellowship Program**
• **Ph.D. Engineering Fellowship Program**
• **Ph.D. Science Fellowship Program**

GEM MS Engineering Fellows receive:
• $10,000 stipend over 3 semesters / four quarters
• a minimum of two paid summer internships with a GEM Employer Member
• full tuition and fees at a GEM Member University

• [http://www.gemfellowship.org/students/gem-fellowship-program/application-instructions/](http://www.gemfellowship.org/students/gem-fellowship-program/application-instructions/)
The National Defense Science and Engineering Graduate Fellowship Program (NDSEG)

- The fellowship program is sponsored by the Army Research Office, Office of Naval Research, Air Force Office of Scientific Research and the DoD High Performance Computing Modernization Program. This program is intended for U.S. citizens at or near the beginning of their graduate studies in science and/or engineering programs. The fellowships are for three year tenures. The stipends begin at $33,500 for first year fellows, $34,000 for second year fellows, and $34,500 for third year fellows. Full tuition and fees and a health insurance allowance are included as part of the program. The application cycle is from September to January.
- [https://ndseg.asee.org/](https://ndseg.asee.org/)

Science, Mathematics, And Research for Transformation Defense Scholarship for Service Program (SMART)

- This scholarship program provides students with a stipend allowance, full tuition, book allowance, room and board and other normal educational expenses. The purpose of the program is to promote the education, recruitment and retention of undergraduate and graduate students in science, mathematics and engineering studies. The SMART Scholarship for Service Program is open only to citizens of the United States, and students must be at least 18 years of age to be eligible. There is an employment obligation to the DoD with this scholarship program. Deadline: December 15
NASA Aeronautics Scholarship Program

• It is expected that approximately 20 two-year undergraduate scholarships and 5 two-year graduate scholarships will be awarded annually to students in Aeronautics and related fields. The program is open to U.S. Citizens who are enrolled in an accredited U.S. college or university. Undergraduate students will receive up to $15,000 awarded for each school year, to be used for tuition, room and board, or other school-related costs. Graduate students will receive up to $35,000 awarded for each school year, to be used for tuition, room and board, or other school-related costs. All students will have the opportunity to attend a summer internship at a NASA Research Center with a summer stipend up to $10,000. Deadline: October 15
• https://www.nasa.gov/audience/forstudents/stu-intern-current-opps.html

The National Science Foundation Graduate Research Fellowship Program (NSF GRFP)

• The NSF GRFP aims to ensure the vitality of the human resource base of science, technology, engineering and mathematics in the U.S. and to reinforce its diversity. This fellowship offers a stipend of $30,000 a year for three years and a $10,500 cost of education allowance for students at or near the beginning of their graduate studies. U.S. citizens, nationals, or permanent resident aliens are eligible to apply. For additional program information, go to: http://www.nsfgrfp.org/. For application and deadline information, go to: http://www.fastlane.nsf.gov. Deadline: End of October
The NSF Graduate Research Fellowship Program (GRFP) provides three-year graduate research fellowships in science, mathematics, and engineering, including Women in Engineering and Computer and Information Science awards. Fellowships are awarded for graduate study leading to research-based master's or doctoral degrees in the mathematical, physical, biological, behavioral and social sciences; engineering; the history of science and the philosophy of science; and for research-based Ph.D. degrees in science education. The NSF highly encourages minority students to apply. Fellowships are intended for individuals in the early stages of their graduate study at any appropriate, accredited, non-profit U.S. institution or appropriate international institution of higher education offering advanced degrees in science, mathematics, or engineering is considered eligible.


**AWARD**

- Three (3) years of stipend, currently $34,000 per year, disbursed over a five-year period while student is on "active" tenure.
- $12,000 cost-of-education allowance to the home institution per year of "active" tenure.
- Opportunities for international research through GROW and federal internships through GRIP
- Supercomputing resources through XSEDE

Note: Fellowships cannot be held or combined concurrently with other federal or government-funded fellowships (e.g., Boren, Fulbright, Fulbright-Hays, SMART, etc.)
ELIGIBILITY

• U.S. citizens, nationals, or permanent residents
• Undergraduate senior, a college graduate entering or preparing to begin graduate school
• Joint baccalaureate/master’s (B.S./M.S.) degree candidates in either their final year or following completion of their program
• Graduate student, including those in joint B.S./M.S. programs, with the following conditions:
  • Limited to only one application submitted either in the first or second year of graduate school;
  • Have completed no more than 12 months of full-time graduate, post-baccalaureate graduate, or professional study by August 1, 2018. Pre-graduate participation in summer activities such as bridge programs, field studies, and lab rotations offered by a graduate program prior to the start of the fall graduate program does not factor into the 12 month total.

ELIGIBILITY (Cont.)

• Applicants with more than 12 months of full-time graduate study or those with a graduate or professional degree are eligible only if:
  • Graduate study or degree occurred as part of a joint baccalaureate-master’s (B.S./M.S.) program and the applicant has not completed any further graduate study outside the joint program with the exception of coursework required to establish or maintain credentials in a profession such as teaching. The Bachelor’s degree must be conferred before fall of the award year; any graduate coursework taken outside the joint-degree program disqualifies the applicant unless the coursework is necessary to maintain professional credentials.
  • There is an interruption in graduate study of at least two consecutive years prior to November 1, 2018 and the applicant has not completed additional graduate study by August 1, 2018. Reasons for interruption in graduate study must be addressed in the "Personal, Relevant Background and Future Goals Statement."
  • Applicants enrolled part-time or a combination of full- and part-time are eligible to apply if they have not completed more than 24 semester hours or 36 quarter hours or their equivalent.
APPLICATION INFORMATION

• Official NSF 2018 program solicitation
  • https://www.nsfgrfp.org/applicants/important_dates
• Fastlane: registration,
  • https://www.fastlane.nsf.gov/grfp/checkROB.do
• Fastlane: application,
  • https://www.fastlane.nsf.gov/grfp/Login.do
• Fastlane: Help Desk
• NSFGRF Operations Center web site for guidance and general inquiries

ELIGIBLE FIELDS OF STUDY AND DEADLINES

November 2, 2018 (Friday): Submit Reference Letter
2019 GRFP Deadlines
All applications are due at 5:00 p.m. local time, as determined by the applicant’s mailing address.

October 22, 2018 (Monday) Geosciences, Life Sciences
October 23, 2018 (Tuesday) Computer and Information Science and Engineering, Engineering, Materials Research
October 25, 2018 (Thursday) Psychology, Social Sciences, STEM Education and Learning
October 26, 2018 (Friday) Chemistry, Mathematical Sciences, Physics and Astronomy

Reference letter deadline
Reference Letters Must Be Submitted by 5:00 pm (ET) on November 2, 2018 (Friday)
Applications Must Be Received by 5:00 pm Local Time of applicant’s mailing address.
APPLICATION MATERIALS & EVALUATION

- The Fastlane application consists of the following:
  - Personal, Relevant Background, and Future Goals Statement (2-page maximum)*
  - Graduate Research Statement (3-page maximum)*
  - Undergraduate and Graduate (if applicable) Transcripts
  - Three (3) Letters of Reference (uploaded separately to Fastlane by selected referees)
- *Applications, and specifically the two statements, will be evaluated according to the NSF's stated "Broader Impacts" and "Intellectual Merit" criteria. Familiarity with these criteria is strongly encouraged. Applicants are advised to read the 2018 program solicitation and to attend the information sessions and the grant-writing workshop series scheduled for early August-early October 2018. Early consultation with advisors, letter writers, and Maria Snyder, Coordinating Official, and review of the below Applicant Resources strongly advised.

Tips and Tricks

- Start EARLY!
- Read the ENTIRE WEBSITE!!
- Request transcripts EARLY!!
- Identify your deadlines
- Download and read NSF-GRFP Program Solicitation
- Choose good recommenders (at least 4)
- Formatting (8.5”x11”, 1” margins, 12-point Times New Roman)
- All materials for the NSF-GRFP require:
  1) Intellectual Merit, and 2) Broader Impacts
Intellectual Merit

- Academic performance
- Communication skills
- Independence/creativity
- Research plan
- Appropriate choice of institution
- Awards/honors
- International experience
- Publications/presentations
- Research experience
- References

Broader Impacts Assessment

- Prior accomplishments
- Individual experiences
- Impact on society
- Integration of research and education
- Future plans
- Potential to reach diverse audiences
- Community outreach
- Leadership potential
Tips and Tricks

- K-12 education
- Mentoring
- Minority participation
- Impact of your research
- Teaching, training, learning
- Partnerships
- International impact

Personal, Relevant Background, and Future Goals Statement (3-page maximum)*

- Career motivation and goals
- Leadership examples and unique characteristics
- Personal experiences and individual strengths
- Potential contribution of the fellowship to your career plans
- Research related experiences
- Science questions, methodology, findings and conclusions
- Mention all outcomes (e.g. publications, posters, presentations, awards)
- Team and/or independent work
Tips and Tricks

- Tell your story
- Show your passion for your career goals
- Mention leadership or outreach experiences
- Project yourself towards the future
- Connect your essays (e.g. see my previous research experience essay)
- FREEDOM!

Tips and Tricks (Cont.)

- Create an outline
- You can include an image relevant to your research
- May be chronological or
- May group experiences according to relevance
- Make sure to mention what you learned
- Align your research towards something
- Include your presentations and publications
Research Outline

List of Posters and Publications

Presentations in technical conferences

[1] Improving the Skill of NWS' Extratropical Total Water Level Forecasting System
Authors: R. Rios-Berríos and A. Taylor

[2] Validation of the 10-meter Winds from WRF Mesoscale Forecast over Puerto Rico
Conference: 91st AMS Annual Meeting - 24th Conference on Weather and Forecasting / 20th Conference on Numerical Weather Prediction

Authors: R. Rios-Berríos, T. Vukicevic, A. Aksoy and K. Sellwood
Conference: 91st AMS Annual Meeting – Student Conference Poster Session

Authors: R. Rios-Berríos, B. Tang and S. S. Chen
Conferences: 92nd AMS Annual Meeting – T.N. Krishnamurti Symposium (accepted), 2012 American Association for the Advancement of Science (AAAS) Annual Meeting (accepted), 30th AMS Conference on Hurricanes and Tropical Meteorology (submitted)

Publications

My thesis project contains different sections regarding numerical simulations of wind turbine aerodynamics. I am currently studying the numerical aspects of the actuator line and actuator disk turbine models. The actuator models are used to simulate wind turbines in CFD without having to resolve the full geometry of the blades. I am studying the grid resolution dependency of the models with uniform inflow. The following task will be to study the models performance in ABL flow. Figure 1 shows vorticity rendering of a wind turbine wake using the actuator line model. Future tasks include studying more than one turbine in a simulation in order to study wake interactions which is key when performing wind farm simulations. By the end of my research I will have established a series of best practices for the use of actuator turbine models.

Figure 1: Vorticity contour of a wind turbine wake in uniform inflow simulation using the actuator line model (ALM).

NREL’s mission is to advance the U.S. Department of Energy’s and the nation’s energy goals. The research I am conducting will help in developing better tools to design more efficient layout configurations of wind turbine farms and improve control algorithms. The results of my research are open to the public in order to allow the industry to use these tools and develop better performing less-maintenance intensive wind farms.

Graduate Research Statement (2-page maximum)*

- This is the MOST important part of your application!
- Original idea
- Detailed plan
- “Big Picture” outside of the academic context
- Format (title, key words, hypothesis, research plan, anticipated results, literature citations)
Tips and Tricks

- Discuss your ideas with a mentor
- Carefully select recent and relevant references
- Pick a research topic you have already explored
- Cite your own work
- Mention the impact your research may have
- Ask for feedback from an expert in your proposed field
- Don't forget the formatting!

Cite Your Work!

On the other hand, understanding the dynamical and thermodynamic processes associated with RI will be critical to improve physical parameterizations of numerical models. The intensity fluctuations have been attributed to changes in the internal structure of the storms, external environmental factors and air-sea interactions (Houze et al. 2006, Chen et al 2007). In a recent study, Rios-Berrios (2011, unpublished manuscript) hypothesized that the tropospheric moisture in the outer regions of TCs provides a protective environment to the inner-core (eye and eyewall), thus allowing the cyclone to spin-up and undergo RI.
Yay for Corrections!

Reference Letters

- No page limit
- Different deadline
- People who know you as a scientist and personally!
- Need to answer questions about your preparation
- Do NOT choose recommenders because of their “names,” but rather because they can speak about YOUR research abilities and professional skills
- Examples: Advisors, mentors, professors, managers, etc.
RESOURCES PROVIDED BY OTHER INSTITUTIONS OR FORMER FELLOWS

- NSF-GRFP Insights: Application Resources for the NSF Graduate Research Fellowship Program - courtesy of Dr. Robin Walker and the University of Missouri
- Winning an NSF Graduate Research Fellowship - James Faghmous
- NSF Graduate Research Fellowship Program - Neale Fox
- Advice for Applicants to the NSF Graduate Research Fellowship - Keith Jacks Gamble
- Advice for Applying for Graduate Science Fellowships - Philip Guo
- Advice for NSF-GRF Applicants - Gregory Hardy
- How to Win a Graduate Fellowship - Michael Kiparsky
- Where Storytelling Meets Science - Lesley McCollum and Michelle Lavery
- http://www.onsf.uconn.edu/find-scholarships/opportunities-for-non-us-citizens/
- http://odge.mit.edu/finances/fellowships/international/

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Evaluation
http://uprm.libsurveys.com/tiger

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