

Fellowship Opportunities for Graduate Students in Plasma Physics

Panel presentation at the 59th APS-DPP Conference
Milwaukee, WI
Oct. 24th, 2017

Participants

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National Science
Foundation
Program Director

Carrie Black

National Science
Foundation
Associate Program
Director

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NSF GRFP Recipient

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DOE FES
Program Manager

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Columbia U. Graduate
Student
SCGSR Recipient

Noah Mandell

Princeton U Graduate
Student
DOE CSGF Recipient

Matt Parsons

UIUC Graduate Student
NSF GRFP & Fulbright
Recipient

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Sandia Nat. Lab
NDSEG Recipient

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NDSEG Recipient

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U. Maryland Graduate
Student
NESSF Recipient

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LANL
NNSA SSGF Practicum
Coordinator

Heather Sander

UIUC Graduate Student
NNSA SSGF recipient



**For Applicants to
the NSF Graduate Research Fellowship Program**

Goals of GRFP

NSF GRADUATE RESEARCH FELLOWSHIP PROGRAM

- To select, recognize, and financially **support individuals** who have demonstrated the potential to be high achieving scientists and engineers, early in their careers.
- To **broaden participation** in science and engineering of underrepresented groups, including women, minorities, persons with disabilities and veterans.

Outcome: Recruit and retain these individuals in the U.S. STEM workforce



NSF Graduate Research Fellowships

Five Year Awards – \$138,000

- Three years of financial support
 - \$34,000 Stipend per year
 - \$12,000 Educational allowance to institution



- Professional Development Opportunities:



International Research
Internships

- Career-Life Balance Initiative (family leave)
- FASED Individuals with Disabilities
- Supercomputer access: XSEDE



GRFP Solicitation (NSF 16-588)

- Provides the following information:

- **Deadlines**
- **Program description**
- **Award information**
- **Eligibility requirements**
- **Application preparation**
- **Submission instructions**
- **Application review criteria**

Graduate Research Fellowship Program (GRFP)

PROGRAM SOLICITATION
NSF 16-588

REPLACES DOCUMENT(S):
NSF 15-597



National Science Foundation

Directorate for Biological Sciences

Directorate for Computer & Information Science & Engineering

Directorate for Education & Human Resources
Division of Graduate Education

Directorate for Engineering

Directorate for Geosciences

Directorate for Mathematical & Physical Sciences

Directorate for Social, Behavioral & Economic Sciences

Office of Integrative Activities

Office of International Science and Engineering

Application Deadline(s) (received by 5 p.m. local time of applicant's mailing address):

October 24, 2016

Life Sciences, Geosciences

October 25, 2016

Computer and information Science and Engineering, Engineering, Materials Rese:

October 27, 2016

Psychology, Social Sciences, STEM Education and Learning

October 28, 2016

Chemistry, Mathematical Sciences, Physics and Astronomy

October 23, 2017

Life Sciences, Geosciences

October 24, 2017

Computer and information Science and Engineering, Engineering, Materials Rese:

October 26, 2017

Psychology, Social Sciences, STEM Education and Learning



GRFP Eligibility

- U.S. citizens and permanent residents
- Early-career: undergrad & grad students
- Pursuing research-based MS or PhD
- Science and engineering
- Enrolled in accredited institution in US by Fall



Academic Levels

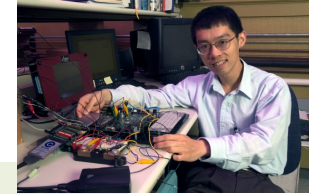
- **1: Seniors or baccalaureates with no graduate study yet**
- **2: First-year graduate students**
- **3: Second-year graduate students**
(≤ 12 months of graduate study by August)
- **4: >12 months graduate study, with interruption in graduate study of 2+ years (can have MS degree)**





GRFP Eligibility

New Eligibility Rules (NSF 16-050)



Level 1: Seniors/baccalaureates: **no graduate study**

Level 2: First-year **graduate students**

Only once in

Level 3: Second-year **graduate students**

grad school

≤ 12 months of graduate study by August 1, 2017

Level 4: >12 months **graduate study**

with an interruption in graduate study of 2+ years

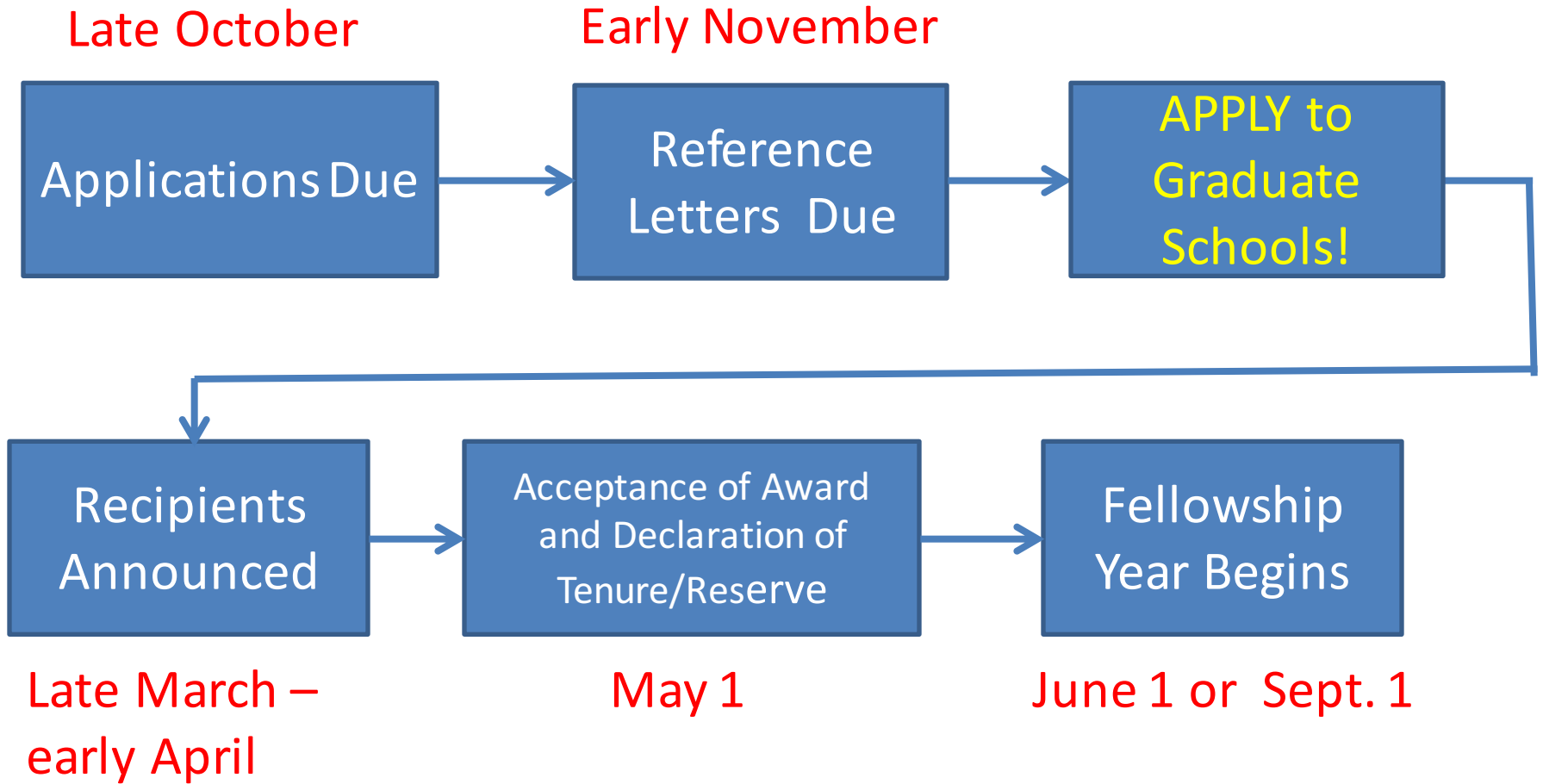


Directorate for Education and Human Resources

Division of Graduate Education



GRFP Application Timeline





GRFP Deadlines

Plasma Science & Engineering Subfield Deadlines:

1) October 23, 2017:

- Geosciences: Magnetospheric Physics, Solar Physics

2) October 24, 2017:

- Engineering: Aeronautical and Aerospace Engineering, Nuclear Engineering, Chemical Engineering, Environmental Engineering, Materials Engineering
- Materials Research: Photonic materials

3) October 27, 2017:

- Physics and Astronomy: Plasma Physics, Astronomy and Astrophysics

Reference letter deadline (3 letters): November 2, 2017



NSF Review Criteria



National Science Board

GOVERNING BOARD OF THE NATIONAL SCIENCE FOUNDATION & POLICY ADVISORS
TO THE PRESIDENT AND CONGRESS

- Two National Science Board-approved criteria
 - Intellectual Merit
 - Broader Impacts



Intellectual Merit and Broader impacts

- How important is the proposed activity to advancing knowledge within its own field or across different fields?

AND

- How well does the proposed activity benefit society or advance desired societal outcomes?
 - **Separate sections for Intellectual Merit and Broader Impacts; address in both Statements**



GRFP Advice for Applicants

- Start early
- Read Solicitation, and read it again
- Read NSF GRFP websites

- Select and confirm reference letter writers
- Pay attention to Merit Review criteria
- Identify several colleagues and have them comment on multiple statement drafts
- Share your application materials and the merit review criteria with reference writers
- Monitor receipt of reference letters (3 required for review)



GRFP Resources

- NSF GRFP Website www.nsf.gov/grfp
 - Solicitation and links
- NSF GRFP FastLane Website: www.fastlane.nsf.gov/grfp
 - Application, guides, announcements
- GRFP Website: www.nsfgrfp.org
 - (includes tips for applying,*
 - GRFP Experienced Resource List)
- Phone & e-mail
 - 866-NSF-GRFP (673-4737)
 - info@nsfgrfp.org





Portals for federally-sponsored opportunities in STEM for students

stemundergrads.science.gov

stemgradstudents.science.gov

STEM OPPORTUNITIES: Graduate Students | Undergraduate Students

STEMUndergrads.science.gov

Your Gateway to Federal Opportunities for Undergraduate Students

[Home](#) [About](#) [Contact](#)

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Narrow Results:

- Undergraduate Program Type >
- Undergraduate Level Eligibility >
- STEM Discipline Focus >
- Institutional Location >
- Federal Agency Sponsor >
- Geographic Region >

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Graduate Student Resources from the Department of Energy - Office of Science (SC)

SC Office	Resource	Application Deadline	Information/Web link	
FES	Funded Research Awards	N/A	Talk to funded professor, research/Lab scientist	Graduate Students
WDTS	Graduate Student Research (SCGSR)	11/16/2017	Supplement for research at Labs & DIII-D (new) - science.energy.gov/wdts/scgsr	
FES via ORISE	Postdoctoral Researcher Award	1/31/2018	Two-year award with stipend and supplements - www.orau.gov/doe-fes-postdoc	
WDTS	Science Undergraduate Laboratory Internships	1/12/2018	Provides research opportunities for u'grads - science.energy.gov/wdts/suli	Undergraduates
WDTS	Community College Internship	1/12/2018	CC equivalent of SULI - science.energy.gov/wdts/cci	
SC via ORISE	DOE Scholars Program	12/15/2017	Provides experience working at DOE - orise.orau.gov/doescholars - energy.gov/student-programs-and-internships	

DOE SCGSR Fellowship

John W. Brooks

Fellowship recipient

jwb2159@columbia.edu



U.S. DEPARTMENT OF
ENERGY



COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK



DOE SCGSR Fellowship



- Benefits
 - Placement at a collaborating DOE laboratory for 3 to 12 months
 - They help you work on your research
 - \$3000/month stipend
 - \$2000 travel expenses for moving
 - Educational and networking experiences
- Application/Requirements
 - Full time PhD candidate
 - Find a collaborating research scientist at a DOE lab
 - Research proposal (2 pages), letters of recommendation, etc.
- My Experience
 - 4 month placement at PPPL
 - Working with experts in MHD, scrape-off-layers, and control theory



**APPLY
ONLINE**

The DOE CSGF program is open to senior undergraduates and students in their first year of doctoral study. Access application materials and additional information at:

www.krellinst.org/csgf

DEPARTMENT OF ENERGY

COMPUTATIONAL SCIENCE

GRADUATE FELLOWSHIP

APPLICATIONS DUE

JANUARY

17

2018

The Department of Energy Computational Science Graduate Fellowship (DOE CSGF) program provides outstanding benefits and opportunities to students pursuing doctoral degrees in fields of study that advance the use of high-performance computing to solve complex problems in science and engineering.



Benefits & Opportunities

Fields of Study

NEW Math/Computer Science Track

Eligibility & Program Requirements

Benefits & Opportunities

Program of Study

2017 Longitudinal Study

News & Events

The DOE CSGF has defining benefits that set it apart from other science- and engineering-focused graduate fellowships:

- A yearly stipend of \$36,000
- Payment of full tuition and required fees during the appointment period (at any accredited U.S. university)
- A \$5,000 academic allowance in the first fellowship year and a \$1,000 allowance each renewed year (to be used for the purchase of a computer workstation or for research/professional development expenses)
- Up to four years of total support, depending on renewal
- A twelve-week **practicum** experience at one of 21 DOE national laboratories or sites, including access to DOE supercomputers
- A rigorous **program of study** that ensures fellows have solid backgrounds in a scientific or engineering discipline plus computer science and applied mathematics
- An annual **program review** for fellows, alumni, university and DOE laboratory staff, held each summer in the Washington, D.C. area



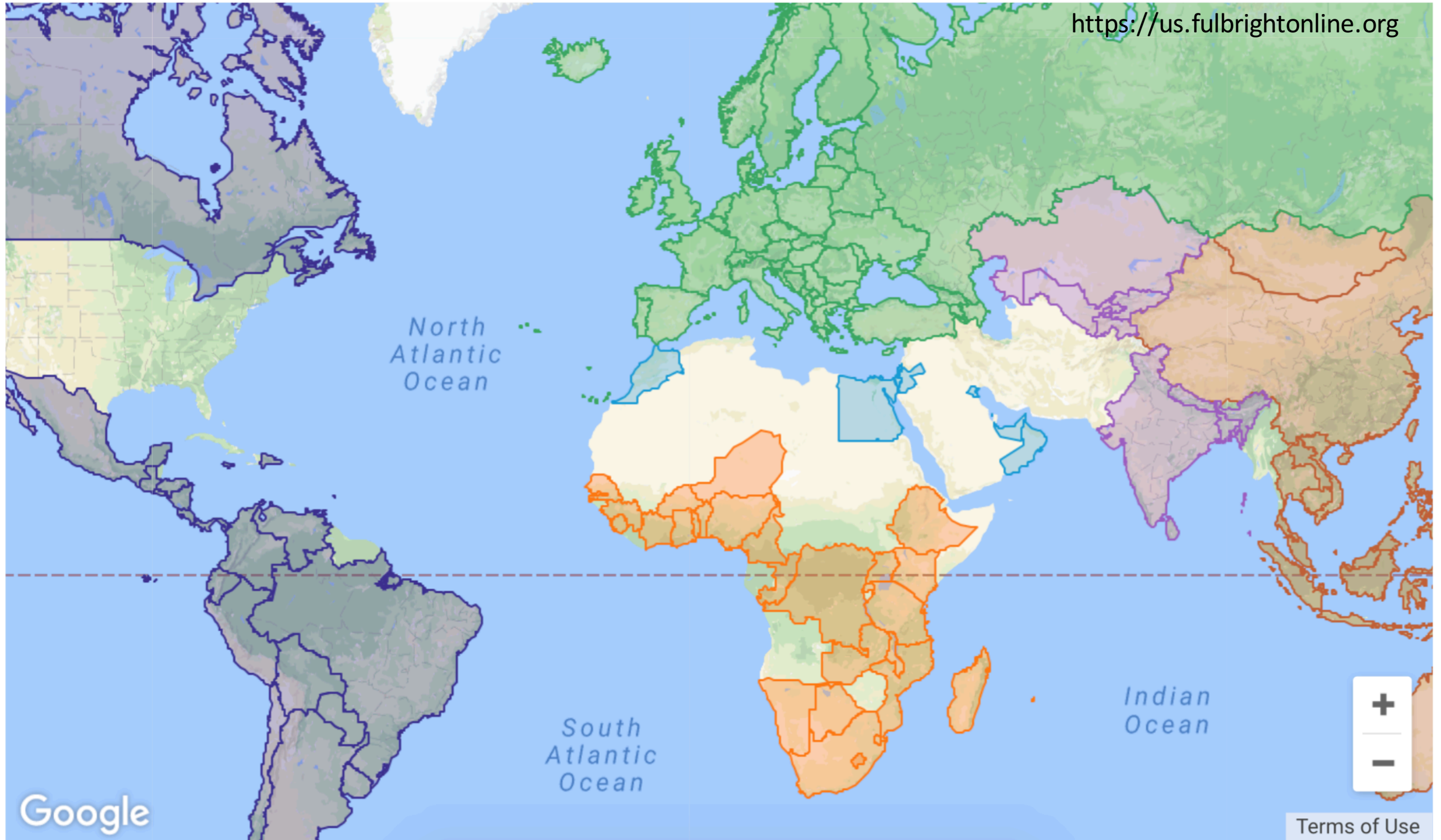


FULBRIGHT

A stylized graphic element below the word "FULBRIGHT", consisting of a horizontal oval shape with a vertical line through the center and several curved lines on either side, resembling a globe or a lens.

Fulbright U.S. Student Program

The Fulbright U.S. Student Program is the largest U.S. exchange program offering opportunities to students and young professionals to undertake international graduate study, advanced research, university teaching, and primary and secondary school teaching worldwide.



Fulbright U.S. Student Program

- For Recent Graduates, and Master's and Doctoral Candidates
- Applicants for study/research awards design their own projects and will typically work with advisers at foreign universities and other institutions of higher education
- The study/research grant is available in approximately 140 countries
- Campus deadlines: Between August and October

NDSEG National Defense Science and Engineering Graduate Fellowship

D. E. Ruiz and A. Creely

APS DPP Meeting
Graduate student info session

October 24th, 2017



NDSEG

Basic information

- **Website:** www.ndsegfellowships.org
- **About:** Fellowship offered by the DoD for graduate students in sciences and engineering.
- **Finances:** Fellowship covers full tuition and other school fees. Monthly stipend is included to students.
- **Duration:** Up to four years (?)
- **Eligibility:** The NDSEG Fellowship Program is open to US citizens or nationals. Applicants must either be enrolled in their final year of undergraduate studies, or have completed no more than two years of full-time years graduate study.

How to apply?

1. Visit the website **www.ndsegfellowships.org** .
2. Gather the application material.
 - Application form
 - Contact information, education experience, work experience, certificates, licenses, references, personal statement, proposed research in relevance to DOD, etc.
 - Official school transcripts
 - Three reference forms
 - GRE general test scores
3. Submit everything.

DEADLINE: December 31, 2017



NASA Earth and Space Science Fellowships

- **NESF graduate fellowships are funded by all four divisions of the Science Mission Directorate:**
 - Proposal must address science goals of one or more division: **Astrophysics, Heliophysics, Planetary Science** and Earth Science
 - But: proposer must choose a single division
 - Students admitted to Masters or PhD programs, **in any year of their study**, at US universities are eligible: OK to apply in final undergraduate year. **But you must have a project and a faculty advisor.**
 - Awards are single-year; may be renewed, but no more than 3 years in total
 - Total award limited to \$45k/year; nominally \$35k stipend + \$10k for tuition, fees and other expenses (including health insurance and travel; excluding equipment, computers)
 - **Due date: early February** (around February 1st to February 8th)



NASA Earth and Space Science Fellowships

Evaluation criteria include:

- **Scientific Merit of the proposal**
 - Applicants write a 6 page research proposal (single-spaced, page total does not include references)
 - **Important note:** Design of the fellowship application is meant to mimic the actual grant writing process
 - Proposed research should not just be compelling, the proposal should include at least a small literature review, the expected impact, a detailed feasibility plan, and anticipated issues with solutions
- **Relevance of the proposed research to NASA's objectives**
 - Relevance to objectives of division where proposal is submitted
 - **This is critical, many, if not most, successful proposals tie their research to a NASA mission**
- **Academic excellence based upon**
 - Applicant's transcripts
 - Signed letter of recommendation by the student's academic advisor (**only one letter of recommendation unless student is co-advised, then exemptions can be made to accept two letters**)
 - applicant's curriculum vitae

DEPARTMENT OF ENERGY NATIONAL NUCLEAR SECURITY ADMINISTRATION

STEWARDSHIP SCIENCE GRADUATE FELLOWSHIP



The Department of Energy National Nuclear Security Administration Stewardship Science Graduate Fellowship (SSGF) NNSA-SSGF program provides outstanding benefits and opportunities to students pursuing a Ph.D. in areas of interest to stewardship science, such as *computation of nuclear codes, nuclear materials and fuel cycle science, nuclear reactors, or high energy density physics*. The fellowship includes a 12-week research experience at Lawrence Livermore National Laboratory, Los Alamos National Laboratory or Sandia National Laboratories.

BENEFITS >

- + \$36,000 yearly stipend
- + Payment of fall tuition and required fees
- + \$1,000 yearly academic allowance
- + Yearly program review
- + 12-week research practicum
- + Renewable up to four years

APPLY ONLINE

The SSF NNSA-SSGF program is open to senior undergraduates or students in their first or second year of graduate study.

APPLICATIONS DUE
JAN. 10, 2018

www.krellinst.org/ssgf

For more information, contact the SSF at application@nnsa.doe.gov or call 800-855-3399.

