



Rensselaer

# External Graduate Funding

Computer Science  
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Office of Graduate Education | <http://bit.ly/RPIgradfund>

# Why it's important

- Honor and prestige
- Money (tuition, stipend, travel, materials, etc.)
- Set your own research agenda
- Learn the funding process
- Clarify your goals
- Communicate your research to a broader audience

Funding leads to more funding. Planning a career in academia?

Writing grants is a major part of the job!

## What kind of funding is available?

- **Fellowships** = tuition + stipend
- **Scholarships** = not common in grad funding, read the fine print!
- **Grants** = money for research expenses (not a living stipend)
- **Awards** = for work already completed (e.g., papers, posters, thesis, etc.)
- **Internships** = paid work at another site

## And who provides it?

- Government
- Private foundations
- Charitable organizations
- Professional/scholarly organizations
- Universities
- Corporations

# The funding process: An overview

## Start early!

➤ Predissertation

➤ Dissertation Research

➤ Dissertation writing

➤ Postdoctoral

➤ Early career

Deadlines are typically 6 months to 1 year - *or more* - before funding begins.

Identify your funding stage.

Match it with the right opportunities.

# Eligibility

## Common factors

- Field of study
- Degree program (PhD, MS, etc.)
- Funding stage
- Citizenship
- Ethnicity or gender

## Appropriateness of topic

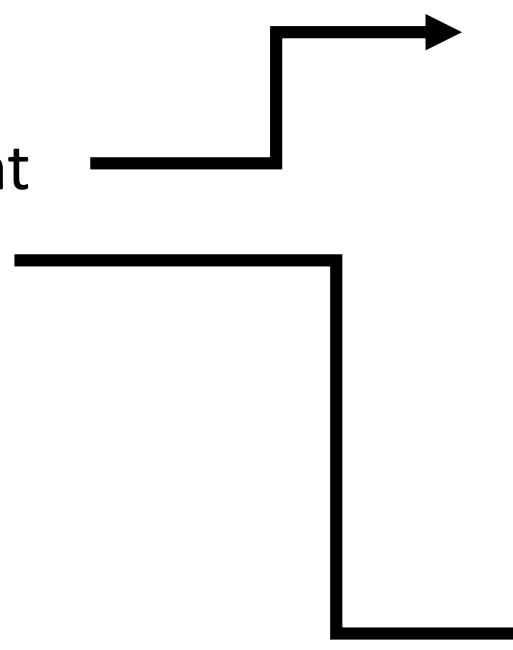
- Find a funder that wants to support the type of research you're doing—don't force it!

**Myth:** There is no external funding for international students.

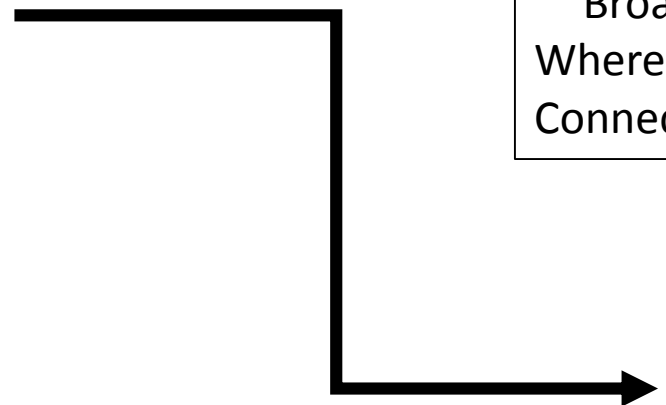
**Fact:** A wide variety of external funding options are out there!

# Application components

- Background info
- Personal statement
- Project proposal
- Transcripts
- References
- CV



What motivates you to pursue your research?  
What people/opportunities have helped you along the way?  
How have *you* helped along the way? (Outreach, Broader Impacts, etc.)  
Where do you see yourself in the future?  
Connect the dots (your experiences) – tell a story!



What is the gap you've identified in your field?  
What is your research question(s)? Do you have a hypothesis?  
How will you conduct your research?  
How will you assess it?  
Why is this project important? – *THINK BIG!*

# What makes a competitive application

- High GPA
  - For the NSF GRFP, reviewers typically say that a 3.5 is the minimum cut-off. It's not impossible to be awarded with a lower GPA, but your research experience and broader impacts will need to be especially strong.
- Experience and accomplishments
  - Research experience, STEM outreach, demonstration of leadership, campus involvement, awards/honors, etc.
- Strong, detailed letters of recommendation
  - Increase the likelihood you will have strong and detailed letters by giving your recommenders all the info they need early and in one package
- Clear, concise, and compelling statements (personal/research)

You are a writer.  
Practice early and often.



# Prioritize your writing

- Seek opportunities for practice
  - Highly recommended: free, self-paced online course offered by Stanford: [Writing in the Sciences](#)
- Allow plenty of time for multiple drafts
  - Develop healthy writing habits. Set a writing schedule and stick to it.
- Seek examples of successful applications
  - Essay bank in OGE, [Alex Lang's NSF GRFP website](#) for GRFP applications, your department
- Seek multiple rounds of feedback from multiple sources
  - Your advisor, labmates, me, [Center for Communication Practices](#)

# Common mistakes in fellowship applications

- Writing general/vague sentences
  - X Something anyone could have written: “I believe it’s necessary to attain the greatest knowledge and experience in one’s field before moving into a career.”
  - ? **Interrogate that sentence like a journalist**: who, what, when, where, why, and how? You don’t need to have all the answers, but you do need to be more specific.
  - ✓ “After I graduate, I will pursue a postdoctoral research position with the ultimate goal of continuing my work toward renewable energy solutions—either in industry or as a research professor.”
- Failing to provide all relevant details of a research or outreach experience
  - Context: **When? Where? Who** else was involved?
  - **What** did you do (in detail; and if it was a team project, what was your role)?
  - **Why** did you do it (importance of project)?

# More common mistakes

- Misunderstanding the “personal” in a personal statement. This is your *professional* narrative.
  - ✓ DO discuss your past academic and research experience, professional goals, what motivates you to pursue graduate work, and why you’ve chosen the project you propose in your research statement.
  - X DON’T go back to childhood (e.g., “I’ve loved science since I got my first telescope at age 7”).
- Not addressing all aspects of the prompt
  - Many applications are judged using a rubric—if you don’t address a certain aspect, you can’t get higher than a 0 in that area.
- Not addressing the bigger picture (the *WHY*) at the outset
  - It’s not enough to describe the technical details of a feasible line of research. You must state why that research is important. How does your work address a critical knowledge gap in the field? What global challenge does this have a role in solving?

# Where can I search for opportunities?



Start here: <http://bit.ly/RPIgradfund>

- **Other institutions' databases** (links on OGE website):
  - [University of Illinois Urbana-Champaign](#)
  - [Duke](#)
  - [Rutgers](#)
  - [University of Chicago](#)
  - [Cornell](#)
- [www.GrantForward.com](http://www.GrantForward.com)
- Use advanced search functions to filter by discipline, funding stage, funding open to international students, etc.
- **Join professional organizations in your area of research**
- **Ask professors, peers, and your department**



[www.grantforward.com](http://www.grantforward.com)

### **Use your RPI email address to set up a Researcher Profile**

- CV
- Publications
- Research interests
- Get suggested grants sent to your inbox
- [Researcher Welcome Guide](#)

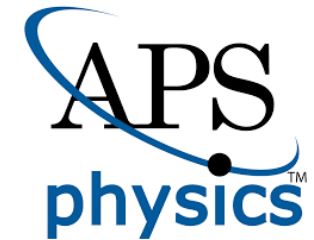
**Use advanced search functions** to find opportunities. If a search turns up good results, save the search and set up an alert to get an email when new grants are added that match these criteria.

### **Search tips:**

- Status: select *Open*, *Continuous*, and *Closed*. Closed opportunities will likely open again within a year
- Applicant Type: select *Graduate Student* and *International*

# Funding offered by professional organizations

- Are you a member of the professional organization(s) in your area of research?
- Nearly all have graduate funding opportunities for members only, including:
  - Research grants
  - Travel grants
  - Awards
- Most grants and awards from these organizations do not have citizenship requirements



# Dissertation Research fellowships

Funding stage with the most options for international students

➤ Predissertation

➤ Dissertation Research

➤ Dissertation writing

➤ Postdoctoral

➤ Early career

- Apply as you are finishing up coursework and transitioning into full-time research
- Funds you and your project—you are committed to what you propose
- Applications will require a research statement and may or may not require a personal statement

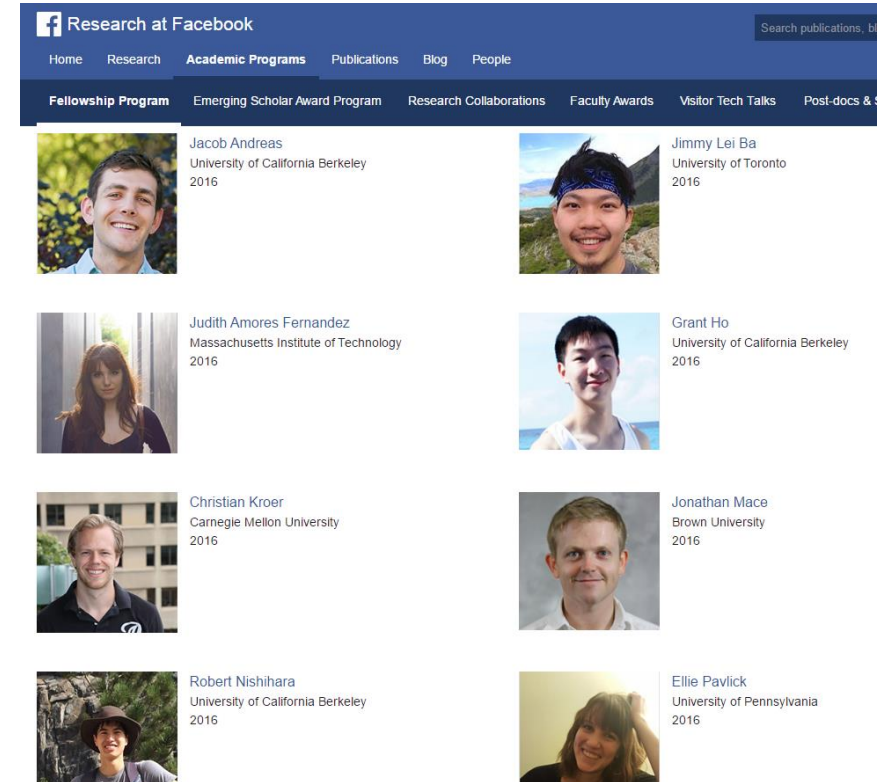
# Facebook Fellowship Program

<https://research.facebook.com/programs/fellowship>

- Open to PhD students globally
- Tuition + fees for up to 2 years
- \$37,000 stipend/year
- Up to \$5,000 in conference travel support
- Paid visit to Facebook HQ to present research
- Opportunity for paid internship at Facebook
- Deadline: **October**

## Application components:

- 1 – 2 page research summary (see areas of interest on website)
- Resume/CV
- 2 letters of recommendation



Read about the current fellows' research online.



# Link Foundation Modeling, Simulation & Training Fellowship

[www.linksim.org](http://www.linksim.org)

- Open to PhD students in the US and Canada with no limitations placed on citizenship
- 1-year fellowship with a stipend of \$29,000
- Deadline: **January**
- Read reports from funded projects on the website

## Application components:

- 500-word essay placing the research in context of current activities in the field
- Project objectives, timeline, and projected budget in accordance with Link Foundation Program Guidelines
- Resume
- 4 letters of recommendation: Dean, PhD advisor, and two others (either professional or educational)



The screenshot shows the website for the Link Foundation Modeling, Simulation & Training Fellowships. The header is dark blue with the Link Foundation logo on the left and the text "MODELING, SIMULATION & TRAINING FELLOWSHIPS" on the right. A "Log in" button is in the top right corner. Below the header is a navigation menu with links for "Home", "About the Program", "Program Guidelines", "Application and Timetable", "Contact", and "Awarded Projects". The main content area features a photograph of a pilot in a cockpit on the left. To the right of the photo, the text reads: "The Link Foundation proudly offers **1 YEAR FELLOWSHIPS of \$29,000** for PhD students in areas that Modeling, Simulation, and Training. Deadline to apply: January 15 (11:59 pm)". Below this text is a green button labeled "SUBMIT APPLICATION".

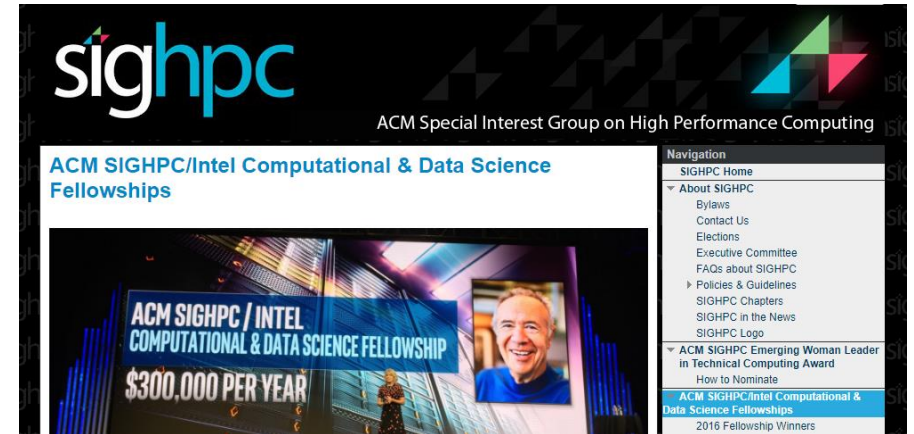
# ACM SIGHPC / Intel Computational & Data Science Fellowship

[www.sighpc.org/fellowships](http://www.sighpc.org/fellowships)

- Open to master's and PhD students globally. Women and/or students from racial/ethnic backgrounds that have not traditionally participated in the computing field.
- \$15,000 annual stipend for up to five years
- Apply during the first half of your program of study; preference to those still early in their studies.
- Deadline: **April**

## Application components:

- Nomination: submitted by your advisor, who should explain how you qualify for the fellowship
- CV and candidate statement
- Brief endorsement: submitted by a current or former instructor, project supervisor, or employer



# Contact information

Alice Broussard, [brousa@rpi.edu](mailto:brousa@rpi.edu)

Office of Graduate Education, 1516 Peoples Ave.

Email me to set up an appointment, or book online: <http://bit.ly/RPIgradfund>

- **Discuss your funding search.** Search at least 3 databases before making an appt.
- **Review the essay bank.** Learn from RPI's recent winning fellowship applications.
- **Get feedback on applications.** Materials due 24 hours before appt. Research Statements should first be discussed with your advisor.



# Predissertation fellowships

➤ Predissertation

➤ Dissertation Research

➤ Dissertation writing

➤ Postdoctoral

➤ Early career

- Apply as an undergraduate senior, or 1<sup>st</sup> or 2<sup>nd</sup> year PhD student
- Fund you as a person and your capacity to develop into an independent research scientist
- Applications will require a research statement, but you will not be tied to that work in graduate school
- ✓ Beginning graduate school with your own funding allows you greater flexibility in choosing an advisor and setting your research agenda

# US Government



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

- 3 years of support over a 5-year period: \$34,000 annual stipend, opportunities for internships (GRIP), research abroad (GROW), and supercomputer access (XSEDE)
- Who can apply: first- *OR* second-year PhD student. Graduate students may only apply once! Applying as an undergrad does not prohibit you from applying again as a graduate student.
- Deadline: **October** (deadline varies by discipline, see website)



## US Dept. of Energy Computational Science Graduate Fellowship (DOE CSGF)

- Up to 4-year fellowship: full tuition, \$36,000 annual stipend, and \$5,000 academic allowance in first year (\$1,000 on renewal)
- Who can apply: first-year PhD student
- Deadline: **January**

# US Government: Dept. of Defense



## National Defense Science & Engineering Graduate Fellowship (NDSEG)

- 3-year fellowship: full tuition & annual stipend up to \$34,000
- Who can apply: first- or second-year PhD student
- Deadline: **December**



## SMART Scholarship

- Up to 5-year fellowship: full tuition & annual stipend of \$38,000
- Who can apply: students able to take paid summer DoD internships and post-grad DoD employment
- Deadline: **December**

# Private foundations



## Hertz Fellowship

- Disciplines: Physical, biological, and engineering sciences
- Up to 5-year fellowship: full tuition & \$32,000 annual stipend
- Who can apply: first-year PhD student
- Deadline: **October**



## Paul & Daisy Soros Fellowship for New Americans

- Open to all disciplines
- 2-year fellowship with a total stipend of \$40,000 and 50% of tuition/fees
- Eligibility: born in the US to parents born abroad as non-US citizens; naturalized citizen; Green Card holder; Adopted by US citizens; DACA status.
- Who can apply: first- or second-year graduate students 30 years or younger on due date
- Deadline: **November**

# Fellowships for underrepresented minority students



## Ford Foundation Predoctoral Fellowship

- Disciplines: Most
- 3-year fellowship: \$24,000 annual stipend (university will waive tuition in most cases)
- Who can apply: PhD student with  $\geq 3$  years to completion
- Must have a sustained personal engagement with communities that are underrepresented in the academy and an ability to bring this asset to a future career in teaching and scholarship at the college or university level
- Deadline: **November**

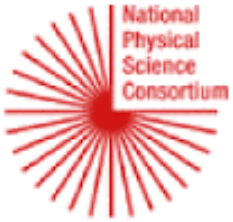


## Facebook Emerging Scholars Program

- Disciplines: Computer Science, Electrical Engineering, System Architecture, or a related area
- 2-year fellowship: \$37,000 annual stipend & up to \$5,000 towards conference travel
- Who can apply: first- or second-year PhD student
- Deadline: **February**



# Fellowships for underrepresented minority students (cont'd)



## National Physical Science Consortium

- Disciplines: Physical sciences and related engineering fields
- Up to 6-year fellowship: \$20,000 academic-year stipend & paid summer internships with sponsoring employer
- Who can apply: PhD student with  $\geq 3$  years to completion of degree
- RPI is part of the National Physical Science Consortium, made up of top research universities, government agencies and labs, and industry partners. Funding is provided jointly by an NPSC sponsoring employer and RPI.
- Deadline: **November**



## GEM Fellowship

- Disciplines: STEM
- 3-year fellowship: \$24,000 annual stipend & paid summer internship with sponsoring employer
- Who can apply: PhD student with  $\geq 3$  years to completion
- RPI is part of the National GEM Consortium, made up of top research universities, corporations, government labs. Funding is provided jointly by a GEM sponsoring employer and RPI.
- Deadline: **December**