Taking the next step to advance your career: The why’s and how to’s of graduate school or post docs

April  |  12  |  2022
The American Association for the Advancement of Science (AAAS)

**Mission:**
"advance science, engineering, and innovation throughout the world for the benefit of all people."

**Journals**

**Diversity, Equity & Inclusion**

- Entry Point
- SEA Change
- IF/THEN Ambassadors
- L’Oréal USA Fellowships For Women in Science

**For More Information**

- AAAS Website - [https://www.aaas.org/](https://www.aaas.org/)
- Science Careers - [https://www.sciencejobs.org/](https://www.sciencejobs.org/)
Emerging Researchers National Conference in STEM (ERN)

- **Funder:** NSF HBCU-UP

- **Goals/Objectives:**
  - Prepare a diverse cadre of students for global careers in STEM
  - Hone science communication skills

- **Conference Activities:**
  - Undergraduate & graduate STEM research presentations
  - Professional development workshops
  - Educational and career fair
  - Plenaries with STEM luminaries

- **Registration opens:** August, 2022 check https://emerging-researchers.org/

- **2023 ERN Conference targeted** for March/April 2023
AAAS ERN Project Team

Iris R. Wagstaff, PhD
STEM Program Director, NSF PI

Neela White
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Administrative details

- Webinar is 60 minutes including time for Q&A
- Raise your hand to ask a question verbally
- Chat window to submit written questions
- Feel free to ask questions throughout
- Department of Energy Computational Science Graduate Fellowship (DOE CSGF) program
  - Fellow
  - Program Manager
- Invited speaker, National Academies Fellowship Roundtable

- Nonprofit dedicated to workforce development and diversity & inclusion
- Congressionally mandated National Academies study, NASA University Leadership Initiative
Where are you headed?

What does the pathway there look like?
Agenda

- Starter Questions
- Why attend graduate school or a post-doctoral opportunity
- How to find the right program for you
- Navigating the process
- How to successfully apply and prepare
Starter Questions

- Poll: https://pollev.com/maryannleung407
Why continue your education or training (through graduate school or a post-doctoral position?)

- First, what do you want to do in your career?
- You may already have a clear image of your future
- If not, how to figure that out?
What can you do with a STEM degree?

- Zoologist
- Wildlife biologist
- Microbiologist
- Network and computer systems administrator
- Computer network architects
- Health and safety engineers
- Industrial engineer
- Electrical and electronics technician
- Laboratory technician
What type of work do you want to do?

- Want to lead or be in charge
- Want to design the work
- Want to contribute to a team
- Conduct research
- Teach; at what level: high school, college, university
- Discover new science/design new solutions
- Write
- Effect change
- Help others
Type of work environment?

- Fixed/regular hours
- Flexible schedule
- Work-life balance
- Part of a team
- Independent
- Leader
- Small group or large organization?
- Entrepreneurial
In what sector would you like to work?

• Academic
• Government
• For profit/industry
• Nonprofit
What’s most important to you?

- Make a lot of money
- Prestige
- Independence
- Discovery
- Challenging work
- Work-life balance
Figuring out if you should continue your education/training

• Your future goals indicate what education/training you need

• Some positions require certain degrees
  
  • Technicians: bachelors or masters
  
  • Principal investigators lead research: PhD
  
  • “A PhD is your union card”; a license to do research

• Requirements vary by field
  
  • Biology: often multiple post-doctoral positions
  
  • Computer science: rarely post-doctoral positions
Some myths & facts

https://pollev.com/maryannleung407
Finding the right program and mentor

• Who is doing work that you are interested in?
• How important is the prestige of the institution to your future?
• What are the program requirements?
  • Cumulative exams?
  • Qualifying exams?
  • General exams?
  • Is tuition waived?
• Are you compatible with your potential advisor/mentor?
  • Intellectually
  • Personality
  • Work style
Finding the right program and mentor

• Referrals/suggestions from your current advisors/mentors/professors
• Authors or papers of interest
• Attending conferences/meetings
• Searching the internet – do lots of research
Navigating the process

**Graduate School**
- Application
- Working your contacts; referrals
- School visits
  - Meeting potential advisors
  - Meeting graduate students
- Negotiating an offer

**Post-doctoral positions**
- Application
- Working your contacts; referrals
- Telephone interview
- In-person interview
  - Giving a research talk
  - Meeting potential collaborators/co-workers
  - Social meetings (lunch/dinner)
- Negotiating an offer

You are interviewing THEM to see if it’s a good fit for YOU; will you be happy there?
Typical application components

- Completed application form
- Transcripts
- GRE scores (for graduate school)
- Essays
  - Research statement or proposal
  - Motivation
- Reference letters

Make sure all your materials are received and don’t miss the deadlines!
Success

- What makes a good application?
- Compelling story evidenced through:
  - interesting research
  - excitement for research
  - experience (extra-curricular/research)
  - potential
  - essays
  - letters of recommendation
- Connection with potential mentor; reach out to discuss your interests
David Keyes
Applied Mathematics Professor
SIAM Archive: The Art of Procuring Reference Letters

Rebecca Brannon
Professor Mechanical Engineering emeritus
•http://www.mech.utah.edu/~brannon/public/StudentResources
  Keeping About Me Notes; tips for students who are building a resume for a dream job (or fellowship)
  Requesting letter of recommendation
  Student Guide to Preparing for PhD Proposal
Related Topics/Upcoming AAAS ERN Webinars

• Coming Soon – Panel of Fellowship Providers such as:
  • Department of Energy (DOE)
  • National Institute of Standards and Technology (NIST)
  • National Institute of Justice (NIJ)
  • National Science Foundation (NSF)
  • National Oceanic and Atmospheric Administration (NOAA)
  • National Institute of Health (NIH)

• May 4th 1:30 – 3:00pm Eastern
• May 18th 1:30 – 3:00pm Eastern
Questions?
Closing Thoughts

• Please complete the post-webinar survey via email

• For more info on the ERN Conference visit - https://emerging-researchers.org/

• Follow us on social media:
  • Twitter - https://twitter.com/ERNConference
  • LinkedIn - https://www.linkedin.com/company/emerging-researchers-national-conference-ern/?viewAsMember=true