

Graduate Studies in YOUR Future

Garden State LSAMP

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Preparing for STEM PhD Studies

- Course work
- **Research**
- GRE exams
- Application
 - Personal statement
 - Letters of reference
- What to expect as PhD student
- Visit schools
- See chat for checklist & list of fellowships

Where would you like to be 10 years from now?*

- How are you preparing now to realize your dreams?
- What advanced education & training will you need?

What do you want to do after you graduate college?*

- Go to graduate school?
 - PhD or Masters?
 - Which subfield?
- Do something else?
- Go to graduate school eventually?

Preparing for Graduate Studies

- Course work
 - Get to know your instructors
 - Do in-depth work, participate in class
 - Maintain good grades
- Research
 - During the summers
 - At your home institution
 - At other institutions?
 - REU sponsored by NSF
 - SULI supported by DOE

http://www.nsf.gov/crssprgm/reu/reu_search.cfm

<http://science.energy.gov/wdts/suli/>
- GREs w/ Analytical Writing (optional for Fall 2021)
- GRE Subject test (e.g., Biology, Chemistry, Math, Physics)

Research !!! – poll on your experiences

- This academic year
- During summers
 - At your home institution
 - At another university
 - NSF REU programs
 - At a national laboratory
 - SULI programs
- Biological science opp. – post baccalaureate
 - After B.S. degree, before start Ph.D. program
 - Research + course work
 - Includes SULI

Research Experiences for Undergrads: NSF & DOE

REU, e.g.,

Rutgers- New Brunswick

Research In Ocean Sciences

Cellular Bioengineering

- Stipend (\$500/week)
- Housing
- Educational enrichment

- https://www.nsf.gov/crssprgm/reu/reu_search.jsp

- <https://science.osti.gov/wdts/suli>

- Deadlines December to early January

Dept of Energy:
Science Undergrad Lab
Internships (SULI)

RISE – Research Intensive Summer Experience

The RISE Advantage

- Cutting-edge research
- Exciting interdisciplinary opportunities
- Personalized mentor matching
- FUNDING! stipend, housing, travel
- Field trips and fun!

Professional Development

- Scientific writing & speaking
- GRE preparation
- Career exploration
- Networking with academic & industrial scientists
- Poster and oral presentations
- **Deadline Jan: one app all Big 10**
- **www.btaa.org/srop**

Components of the Grad Application

- Application form: Contact & background info
- Transcripts - all colleges you attended
- Lists of relevant courses
- Application fee (\approx \$70 per school)
 - May be waived because in LSAMP, McNair or other diversity program – ask
- **Personal Statement**
- **Letters of Reference**

Personal (professional) Statement*

- What I have done in *proposed field of study*
 - Discuss *your* research project(s)
 - What were *your* most important contributions
- What I want to do
 - Continue to study in-depth and do research in *specify the topic*
 - If not sure of which subfield, OK to say so, but should have some preferred areas
 - Become a researcher or professor in this field or work in industry
- Why this school?
 - Excellent faculty doing research in *specific area*
 - Or if undecided about sub-specialty, the strengths of the program in many (*specify*) areas of study that interest you
- Well written
 - Have friend or mentor critique
 - Spell and grammar check

Letters of Reference*

- Usually require 3
- People who know you well
 - Course work
 - Your research

- Examples
 - Supervisor of summer research project(s)
 - Professor in a class where you participated actively in discussions
 - Should be high ranked person AND someone who knows you well
- Someone who will be able to say more than
“She got an A in my course”

Preparing: What to Expect

- What you will do in a PhD program
 - Course work
 - 1-2 years
 - Qualifying exam
 - Sometimes end of 1st,
 - “always” by end of 2nd year
 - Original Research
 - Something no one has ever done before
 - Write, give presentations, often work in teams, often teach
 - 5-6 years in total
 - Make sure are willing to live where you are studying

Preparing: What to Expect

- Financial support
 - Ph.D. students in STEM fields are supported
 - Make sure indicate that are interested in financial aid (although Ph.D. programs likely to assume so)

Preparing: What to Expect

Forms of Financial support (Ph.D. students)

- Stipend + tuition remission (+ medical benefits)
- Teaching assistant or research assistant or fellowship (or combination of these)
 - Teaching Assistant: teach in classroom, often sections of large introductory lecture or lab courses (≈ 15 hours/week)
 - Research Assistant: Does research on the project of a faculty advisor (not necessarily your dissertation advisor)
 - Fellowship: no work requirements.
 - Award based on excellent promise

Preparing: What to Expect

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 - Make sure indicate that are interested in financial aid (although Ph.D. programs likely to assume so)
 - Apply for external fellowships:
NSF Graduate Research
or fellowships from
DOD, DHS, NNSA
Ford Foundation, GEM
NPSC
 - LSAMP Bridge to Doctorate

More info: posted on GS-LSAMP and file in chat

National Opportunities for Financial Support (Ph.D. students)

- National Fellowships – see chat or ask LSAMP office for list
 - Federal agencies that support the sciences
 - Foundations, e.g., Ford Foundation, GEM
 - LSAMP Bridge to the Doctorate – schools with LSAMP programs
 - NIH Bridges to the doctorate - partnerships– biomedical sciences
- Excellent stipends + funds for tuition, etc.
- Apply early fall Senior Year
- Award based on excellent promise
 - In research
 - Based on research experience(s) and research proposal
 - For broader impact
 - Potential for leadership
 - Role model for younger scholars
 - Commitment to enhance diversity
 - Commitment to outreach to community and K-12 schools

Preparing: When to apply

- During the Summers
 - Do research, start to prepare to take GREs
 - Talk with research mentors about grad study options for you
 - Work on personal statement
- End of junior year/early in senior year
 - Take GREs (optional for F2021)
 - General, with Writing Sample
 - Subject Test
- **Early senior year**
 - Decide to which schools will apply
 - Talk to professors about writing letters of reference
- December of senior year
 - Submit applications
- External Fellowships
 - Deadline October of Senior Year

Most programs have deadlines in early January, some in December, especially for financial support

Preparing for Graduate Studies

Learn about which school is right for you:

- Suggestions from faculty or research mentors
 - Graduate programs directors at local universities
- Graduate School recruiting fairs
 - Recruiters at recruiting fairs
- Request written materials and go on-line

- Visit schools before accepting
 - Talk with professors
 - Meet current students
 - Walk around campus, visit the town

Say thank you

- Thank you to letter writers
- Thank you for invitation to visit and people you met while visiting another school
- Thank you to schools that make you an offer
 - Decline offer(s) as soon as have made a decision, preferably before April 15

You are entering the broader STEM community:
Your future colleagues, collaborators and friends

Thank you Dr. Evelyn Erenrich & RiSE@Rutgers for Photos

Have fun in Grad School

- In-depth study in a particular field
- Doing something no one has done before
- Preparing for challenging career
- ALL of the above

Summary (see chat for checklist): Preparing for STEM PhD Studies

- Course work - Now
- Research –summer 2020 and beyond
 - REU & SULI
 - RISE at Rutgers and Big Ten
 - Deadlines December and January
- GRE exams – early senior year
- Application – December-January deadlines
 - Personal statement
 - Letters of reference
- Visit schools before accept ⇔ your best match
- Have fun!