

# Graduate Studies in YOUR Future

## Conference Experience for Undergraduates Joint APS-DNP and JPS Meeting

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# Preparing for Nuclear Science PhD Studies

[www.uwlax.edu/ceu](http://www.uwlax.edu/ceu)

- Course work
- **Research**
- GRE exams
- Application
  - Personal statement
  - Letters of reference
- What to expect as PhD student
- Visit schools

(\* = where may want to make notes)

# **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?

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  - Maintain good grades
- GREs w/ Analytical Writing
- GRE Subject test (e.g., Chemistry, Physics)
  - Best of success to those taking it on Saturday
- Research

# Research !!!

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- This academic year

# Research !!!

- Last summer
- This academic year
- Next summers
  - At your home institution
  - At another university
    - NSF REU programs  
[http://www.nsf.gov/crssprgm/reu/reu\\_search.cfm](http://www.nsf.gov/crssprgm/reu/reu_search.cfm)
  - At a national laboratory
    - DOE SULI programs  
<http://science.energy.gov/wdts/suli/>

# Research Experiences for Undergrads: NSF & DOE

NSF REU, e.g.,  
University of Notre Dame  
<http://physics.nd.edu/research/reu/>

Science Undergraduate Laboratory Internships (SULI)

DOE SULI



- Stipend (\$5K+)
- Housing
- Educational enrichment
- [http://www.nsf.gov/crssprgm/reu/reu\\_search.cfm](http://www.nsf.gov/crssprgm/reu/reu_search.cfm)
- <http://science.energy.gov/wdts/suli/>
- Deadlines December to early January

# Components of the Application

- Application form:
  - Contact & background info
- Transcripts:
  - All colleges you attended
- Lists of relevant courses
- Application fee
  - ≈\$70 per school
- **Personal Statement**
- **Letters of Reference**

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  - Excellent faculty doing research in *specific area*
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- Well written
  - Have friend or mentor critique
  - Spell and grammar check

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- 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 physical sciences 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 ( $\approx 15$  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



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- Apply for external fellowships:
  - NSF Graduate Research
  - or fellowships from
  - DOD, NNSA

More info:

posted on CEU web page



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

- National Fellowships – See CEU web stie
  - Federal agencies that support the sciences
  - DOE, NNSA, DOD
- Apply early fall Senior Year OR once as 1<sup>st</sup> or 2<sup>nd</sup> year PhD student
- 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
    - 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 program 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 nuclear science community:  
Your future colleagues, collaborators and friends

# 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

**Thank you!**

# Summary: Preparing for Nuclear Science PhD Studies

- Course work – Now - [www.uwlax.edu/ceu](http://www.uwlax.edu/ceu)
- Research – now, summer 2019 and beyond
  - REU & SULI – Deadlines December and January
- GRE exams – early senior year
  - Best of success to those taking them on Saturday!
- Apply for external fellowships
  - NSF October; others early January
- Application – December-January deadlines
  - Personal statement
  - Letters of reference
- Visit schools before accept ⇔ your best match
- Have fun!