We will start momentarily at 2pm ET

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Have Questions?

“Why am I muted?”
Don’t worry. Everyone is muted except the presenter and host. Thank you and enjoy the show.

Type them into questions box!

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Dr. Saundra McGuire,
Director Emerita,
Center for Academic Success,
Louisiana State University

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PROGRAM IN A BOX

SPEAKING SIMPLY: Communicating Your Science

Tuesday, October 7, 2014

- 6:00 pm ET Networking
- 7:00 pm ET Webinar
- 7:30 pm ET Live Q&A

Speakers:
- Douglas Dollemore, ACS Office of Public Affairs
- Darcy Gentleman, ACS Office of Public Affairs

To learn more and register: www.acs.org/speakingsimply

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Dr. David Harwell, Assistant Director, Industry Member Programs, American Chemical Society

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Did you miss the past Grad School ACS Webinar?

ACS WEBINARS®
May 8 @ 2PM ET

“SURVIVING AND SUCCEEDING IN GRAD SCHOOL”
Featuring Sam Pazcni, Ph.D
University of New Hampshire

www.acs.org/content/acs/en/events/acs-webinars/surviving-grad-school-pazcni.html
Join Sam on Reddit to get all your Grad School questions answered!

http://www.reddit.com/r/science

Friday, July 11, 2014 at 2pm ET

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http://www.acs.org/content/acs/en/careers/college-to-career.html
Strategies for Applying to Grad School

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Patricia Simpson
University of Illinois, Urbana-Champaign’s School of Chemical Sciences

Sam Pazicni
University of New Hampshire

This ACS Webinar is co-produced by the ACS Education Division

“Strategies for Applying to Graduate School"

July 10, 2014

American Chemical Society
Getting In and Deciding

• How do I prepare myself for graduate school?
• How do I choose schools and programs to apply to?
• What goes into a competitive application?
• How do I know which school is the right one for me?

I am but one person… with one set of opinions on these issues.
And that is why we have...

Ms. Whitney Kellett
Ph.D. student,
Purdue University

Which of the following best describes you?

• I will be a **sophomore** (second-year) or a **junior** (third-year) this coming semester.
• I will be a **senior** (fourth-year or greater) this coming semester.
• I have already finished my undergraduate studies and will have **taken a year** before applying to graduate school.
• I have already finished my undergraduate studies and will have taken **more than a year** before applying to graduate school.
• I have **completed some graduate work** or a graduate degree (such as an M.A. or an M.S.) in Chemistry
What program is right for me?

• What do I want from my graduate experience?
  – to diversify your knowledge and skills?
    • Professional Science Masters?
  – to increase your specific chemistry knowledge and research proficiency?
    • Masters of Science?
  – to become an independent scholar in a specific area of chemistry research?
    • Doctor of Philosophy?

What is a P.S.M Degree?

• “The M.B.A. of the Science World”
  – Typically, this is a non-thesis “hybrid” degree
  – Coursework combines chemistry and training in writing, leadership, policy, law, business, communications, etc.
  – Often culminates in an internship

• A fair bit of homework is required
  – Not all schools have chemistry P.S.M. degrees
  – Requirements for admission and completion of P.S.M. programs can vary widely
P.S.M. Program Examples

- Chemistry and Polymer Science
- Pharmaceutical Chemistry/Biochemistry
- Material and Chemical Synthesis
- Industrial Chemistry
- Computational Chemistry
- Materials Science and Engineering
- Chemistry for Entrepreneurship
- Analytical Chemistry
- Nanoscience
- Forensic Chemistry
- Chemical Informatics
- Master of Chemical Education

Example of P.S.M. Program

Chemistry and Polymer Science

- 18 credits of chemistry/polymer science, 9 credits of management courses, 3 credits of electives, 1 credit ethics seminar, 1 credit internship
- **Required Chemistry Courses**: adv. analytical chem., modern organic synthesis, adv. physical chem., modern inorganic chemistry, adv. polymer science I
- **Required Management Courses**: project management, professional communication
- **Professional Internship**: 40 hrs./week, 3-6 months in duration; “the student will work within a business, government agency or research institute directly related to their area of chemistry”
What is an M.S. Degree?

- M.S. Programs provide students with an opportunity to develop a high degree of proficiency in a specialized research area and modest exposure to independent research
- Coursework and research are required; a thesis may be optional…
  - (write the thesis! …you’ll be better for it.)
- A fair bit of homework is required…
  - some M.S. Programs are robust; others are a default if the Ph.D. is not obtained

Example of an M.S. Program

- Specialize in a sub-discipline of chemistry: analytical, inorganic, organic, or physical
  - ~12 credits of specialization area coursework
- Complete breadth requirement
  - ~8 credits distributed among courses in other areas
- Perform research in area of specialization
  - complete a progress report mid-way through the program
  - write and defend a thesis
- Present a seminar or similar research presentation
- Attend departmental seminars
Two Types of Masters Degrees

• Professional Science Masters (P.S.M.) Degree
  – Depends chemistry knowledge
  – Provides training in business, communication, policy, etc.
  – Culminates in an internship

• Master of Science (M.S.) Degree
  – Graduate courses in all areas of chemistry and biochemistry
  – Provides modest chemistry research training
  – Perform research that culminates in a thesis and perhaps a publication or two

What is a Ph.D. Degree?

• Doctoral degree programs develop students into professional scientists capable of independent activity
  – Research and dissertation are mandatory
  – Other requirements vary by program: coursework, comprehensive exams, seminars, research proposals, etc.

• Yes, a fair bit of homework is required…
  – You’ll be devoting a fair chunk of your life to pursuing a Ph.D. degree; you’ll want to make the most well-informed choice you can!
Example of a Ph.D. Program

- Specialize in a sub-discipline of chemistry: analytical, chemistry education research, inorganic, organic, or physical.
  - ~15 credits of specialization area coursework
  - Complete comprehensive examinations
- Complete breadth requirement
  - ~4 credits distributed among courses in other areas
- Present a departmental seminar
- Write and defend an original research proposal
- Perform research in the area of specialization
  - Complete a progress report mid-way through the program
  - Write and defend a dissertation

Which best describes your prior preparation?

- A non-ACS-certified degree with little or no research experience
- A non-ACS-certified degree with research experience
- An ACS-certified degree with little or no research experience
- An ACS-certified degree with research experience
- A graduate degree (such as an M.A. or an M.S.)
Experiences to have before graduate school

**Coursework**
- 2 semesters general chemistry with lab
- 2 semesters organic chemistry with lab
- 2 semesters physical chemistry with lab
- 1-2 semesters analytical chemistry with lab
- 1-2 semesters inorganic chemistry with lab
- 1 semester biochemistry

**Research**
- Depends on to what graduate program you aspire
- If you do research, have something to show for it!

**Practice with both written and oral communication skills**
**Gain comfort/proficiency with software**
- Microsoft Excel, PowerPoint, Word (or similar)
- Origin or Igor Pro (data graphing software)
- ChemDraw (chemical structure drawing)
- Endnote or Refworks (citation tools)
**Gain skill with search engines like SciFinder, WebofScience, and PubMed**
Applying to Schools

• Does this look like a school at which you'll be happy?
  – Look at websites/brochures of the department/school
  – Research the location
  – Small program versus large program?

• What do you want to do?
  – *If interested in research*: does the work of current faculty (look at research descriptions, publications, etc.) look interesting to you?
  – *If interested in teaching*: are there appropriate opportunities to learn about and get experience in teaching and learning?
  – *If interested in business/entrepreneurship/policy*: are there appropriate professional development opportunities?

ACS Directory of Graduate Research (DRGweb)

http://dgr.rints.com/
Applications: The Digits

- Transcript
  - Chemistry/science courses and grades
  - > “B” average is a good benchmark

- GREs
  - Take in September/October to have scores to institutions by December
  - Averages: verbal: 153 (62% rank); quantitative: 153 (65% rank); analytical writing: 4.5 (72% rank)
  - GRE: Chemistry/Biochemistry may or may not be required

- TOEFL (international students)
  - Minimum score is 80 (20 on each section)
  - TOEFL speaking: 25 (to be sure applicant can TA)

Applications: The Statement

- Less is not more!
  - Give us a sample of your best writing!

- General Structure:
  - What have you done up until now? How have your life and school experiences converged on your decision to attend graduate school?
  - What do you want to do with your life and career?
  - How will coming to our school help you achieve these goals?

- Proof-read!!
Applications: The Statement

• Some Specifics:
  – Address past research experiences and relevant course experiences
    • Research at current and past institutions, REU experiences, industry/internship experiences
  – Address leadership experience
    • Especially teaching experience, if applicable
  – Mention the faculty members with whom you are interested in working
    • And why!

Applications: The Letters

• Typically, 3 letters are required
  – Letters should come from scientists/faculty that have had you in class, been your research mentor, or have mentored you in some other way
  – They should be able to provide information an admissions committee couldn’t get from other application materials
• Decide early; ask often
  – Give your letter writers at least one month notice
• Provide specific instructions to your letter-writers
  – Deadlines, formats (online vs. mail), mailing information, to whom the letters should be addressed, etc.
Applications: Odds and Ends

• Deadlines!
  – Most programs have rolling admissions; apply WELL ahead of deadlines
  – Earlier applications have a better chance of getting you nominated for fellowships
  – Late applications will likely not be reviewed

• Fees
  – Fees range from free to ~ $100
  – If you can’t pay it, let the school know

The Offer

Congratulations! I am pleased to inform you…

• Review the offer letter carefully! things to consider:
  – The stipend
    • Is support guaranteed? … and for how long?
    • Is it enough to live comfortably in the geographic location of the school?
  – Tuition and Fees
    • Do you pay these out of your stipend? … or are they “waived”?
  – Benefits (medical, dental, emergency, etc.)
• If any details are unclear, pester!
Selecting a School

• Visit!!
  – Attend a “visitation weekend” or talk to the school/department to set up an individual visit
  – Get the “inside scoop” from students; trust that the faculty are putting their best foot forward
  – Consider facilities and infrastructure
  – Consider the location
    • Can you live there and be happy for an extended period of time?
    • Explore! ...are the extracurricular things you like to do available?

Selecting a School

• Don’t “put all your eggs into one basket”
  – Are there are least 2-3 faculty with whom you’re interested in working?
• Program requirements and structure
  – Rigid versus flexible requirements
  – Available courses
• Is there community amongst the graduate student population?
  – Will you have a suitable peer support network?
Which best describes your post-graduate school plans?

• An industrial position
• A teaching-oriented faculty position
• A research-oriented faculty position
• A position outside of the lab (policy, journalism, etc.)
• I’m not sure!

Planning for Graduate Work in Chemistry

This publication contains much of what we discussed today… as well as much more!

Just Google the title and you’ll find it!
Advancing Graduate Education in the Chemical Sciences

http://www.acs.org/content/acs/en/about/governance/acs-presidential-commission-on-graduation-education-in-the-chemical-sciences.html

http://sciencecareers.sciencemag.org/career_magazine/previous_issues/articles/2013_02_01/caredit.a13-00008

cen.acs.org/articles/91/i9/Just-Another-Report.html

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Strategies for Applying to Grad School

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- Boren Awards for International Study (Worldwide)
- Sao Paulo School of Advanced Sciences (SPSAS) for Graduate Students (Brazil)
- Luce Scholars Program for Graduate Students (Asia)
- East Asia & Pacific Summer Institutes for US Grad Students (EAPSI) (China, Japan, N. Zealand, Singapore)
- Research Internships in Science and Engineering (RISE) Professional Program (Germany)

Key

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