Type them into questions box!

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

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  - View the Collection
  - Learn how to write better abstracts, deliver more engaging presentations, and network to your next dream job. Brush up on your soft skills and set a new career path by mastering what cannot be taught in the lab.

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  - From renewable fuels to creating the materials for the technology of tomorrow, chemistry plays a pivotal role in advancing our world. Meet the chemists that are building a better world and see how their science is making it happen.

- **Drug Design and Delivery**
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  - The Drug Design Delivery Series has built a collection of the top minds in the field to explain the mechanics of drug discovery. Discover the latest research, receive an overview on different fields of study, and gain insight on how to possibly overcome your own mad scientist roadblocks.

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  - Why does food taste better when it is grilled or what molecular compounds make a great wine? Discover the delectable science of your favorite food and drink and don’t forget to come back for a second helping.

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ACS Career Navigator: Your Home for Career Services

Whether you are just starting your journey, transitioning jobs, or looking to brush up or learn new skills, the ACS Career Navigator has the resources to point you in the right direction.

We have a collection of career resources to support you during this global pandemic:

- Professional Education
- Virtual Career Consultants
- ACS Leadership Development System
- Career Navigator LIVE!
- ChemIDP
- College to Career
- ACS Webinars
- Virtual Classrooms

Visit [www.ACS.org/COVID19-Network](http://www.ACS.org/COVID19-Network) to learn more!

ACS Department of Diversity Programs

*Advancing ACS’s Core Value of Diversity, Inclusion & Respect*

We believe in the strength of diversity in all its forms, because inclusion of and respect for diverse people, experiences, and ideas lead to superior solutions to world challenges and advances chemistry as a global, multidisciplinary science.

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ACS Scholars Endowment Founder Joe Vacca, retired Vice President of Chemistry, Merck & Co., meets with his 2018 ACS Scholar Johanna Masterson, now a grad student at Princeton University.

“Chemistry has been good to me...so I wanted to make a significant gift to provide that opportunity to others.”

ACS Webinars

The State of Science

Creating an Inclusive and Resilient Future in Chemistry Education

The Power of Hydrogen

Date: Thursday, February 4, 2021 @ 2:30pm ET
Speaker: Jaqueline Bell, Ph.D.
Moderator: Glenn Bachman, American Chemical Society

What You Will Learn:

- What the world thinks of science during the global pandemic and if skepticism grew up or down
- What the global public cares about the most as it relates to science
- What specific actions can we all take to advocate for science

Co-produced with: ACS External Affairs & Communications

Register for Free!

Date: Thursday, February 4, 2021 @ 2:30pm ET
Speakers: Anthony DePaola, Long Island University and Understanding Interventions / Michelle Ziegler, Hampton University and NSF Undergraduate Programs / Louise Echegoyen, The University of Texas at El Paso
Moderator: Jerilynn Wroblewski, Louisiana State University
Organizer: Leyda Mifsud, Spelman College

What You Will Learn:

- The breadth of research that broadens the participation of individuals from groups underrepresented in STEM
- Examples of evidence-based practices that might be appropriate for the STEM classroom
- The editors for the special issue will host weekly office hours to answer specific questions related to the JCE special issue. Please submit questions to editors@acs.org.

Co-produced with: ACS Publications and ACS Education

Register for Free!

Date: Thursday, February 11, 2021 @ 12pm ET
Speaker: Spy Kepu, Retired, International Solar Electric Technology
Moderator: Bill Stockdick, The UNM Group LLC

What You Will Learn:

- Hydrogen production methods and its role as a transportation energy carrier in fuel cells
- Transportation opportunities using hydrogen and fuel cells as an energy source
- Economic, storage, and safety issues when using hydrogen through different applications

Co-produced with: Science History Institute and Chemical & Engineering News

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If you are from an underrepresented racial or ethnic group, we want to empower you to get your graduate degree!

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Email us at bridge@acs.org
Tips for Applying to Graduate School in Chemistry

Presentation slides are available now! The edited recording will be made available as soon as possible.

www.acs.org/acswebinars

This ACS Webinar is co-produced with ACS on Campus.

What is Graduate School About?
WHAT IS GRADUATE SCHOOL ABOUT?

A Marathon, Not a Sprint

Creating tangible short-term goals helps you move forward, and a strong support team provides necessary boosts.

Source: Liz Hozman, 7 Ways Earning a Ph.D. is Like Training for a Marathon, Inside Higher Ed, https://www.insidehighered.com/blogs/gradhacker/7-ways-earning-phd-training-marathon

WHAT IS GRADUATE SCHOOL ABOUT?

Your Development in Graduate School

- Develops you as a scientific thinker
- Gives you practical hands-on lab skills
- Grows your interdisciplinary knowledge
- Trains your mind
- Strengthens your soft skills
WHAT IS GRADUATE SCHOOL ABOUT?

Swiss Army Knife

Skills developed

- Lab skills
- Communication (oral and written)
- Teamwork and collaborative skills
- Research skills
- Problem-solving skills
- Independence and perseverance
- Networking, relationship development
- Time management and prioritization
- Work-life balance

WHAT IS GRADUATE SCHOOL ABOUT?

Undergraduate and Graduate School Differences

Undergraduate Focus

- Broad courses across various subjects - science, math, humanities, arts
- Focus all four years is on coursework, play the credit game
- GPA is the key measure of success and can impact your next steps
- Complete a number of course credits and can finish once you complete credits for a degree
- Motivation driven by professors, credits

Graduate Focus

- Coursework is typically all chemistry specific
- Focus changes after year one or two to research, committee evaluations
- Key measure of success is research results (GPA must be above minimum)
- Individual pace - results determine the pace and progress, and finishing times vary student to student
- Motivation is self-driven
Graduate Degrees Options in Chemistry

Graduate Degree Options in Chemistry

Common Degree and Career Paths

1. M.A. / M.S.
   Common careers:
   - Lab support
   - Analysis
   - K-12 education

2. P.S.M.
   Common careers:
   - Management
   - Intellectual property
   - Entrepreneurship

3. Ph.D.
   Common careers:
   - Academic research
   - Industry
   - Government
   - Postsecondary education

4. Other Specialties
   - Ph.D./M.D.
   - J.D. (Patent)
   - M.B.A.
   - Ed.D.

Pursuing a Graduate Degree in Chemistry
GRADUATE DEGREE OPTIONS IN CHEMISTRY

Timeframe and Funding

**P.S.M.** Professional Science Masters
- Student supported costs
- Assistance may be available

**M.A./M.S.** Masters Programs
- Student supported costs
- Assistance may be available

**Ph.D.** Doctoral Programs
- Tuition/fees most often waived and
- Teaching assistant, research assistant, or other resources may be available

---

**Audience Survey Question**

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT

Which of the following are graduate degrees in chemistry? (select all that apply)

- Dyes, pigments, and inks
- Neurochemistry
- Sensors
- Science policy
- Energy sciences

*If your answer differs greatly from the choices above tell us in the chat!*
The Graduate Chemistry Landscape is Broad

Agricultural sciences  Environmental sciences  Neurochemistry
Analytical sciences  Food sciences  Pharmaceutical science
Archaeology  Forensic sciences  Pharmacology
Atmospheric sciences  Formulation chemistry  Physical chemistry
Biochemistry  Geological sciences  Photonics
Biological  Hazardous waste management  Process chemistry
Chemical education  Health and safety  Proteomes
Chemical engineering  Industrial chemistry  Quality assurance
Chemical information  Inorganics  Quality control
Colloidal sciences  Macromolecular  Regulatory affairs
Computational chemistry  Materials science  Science policy
Cosmetic sciences  Medicinal chemistry  Sensors
Crystallography  Natural products  Sustainability
Dyes, pigments, and inks  Organic synthesis  Theoretical
Earth and space science  Organometallics  Toxicology
Energy sciences  Nanosciences  Water chemist

How to Prepare for Graduate School in Chemistry
HOW TO PREPARE FOR GRADUATE SCHOOL IN CHEMISTRY

Personal Preparation

Honest self-reflection

- How does graduate school fit into your life?
- How does graduate school fit into career goals?
- Examine your personal motivations.
- Do you like research?
- Do you have a good reason to go to graduate school?

Coursework Preparation

Checklist for undergraduate chemistry courses

- 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
Undergraduate Research

Why complete undergraduate research?

- *Note:* research experience may not be required, program dependent
- Gives you experience and insight into graduate school and the research process
- Lets you explore research in an area without long-term commitment
- Provides you with a tangible item to add to your graduate school application (e.g., a scientific finding, a new or more polished skillset, or new experience working with a team of PhDs)
- Gives you an opportunity to build an independent relationship with a PI who might be a candidate to write your recommendation letter

Other Skills

- Online research skills
- Oral and written presentation skills
- Software proficiency
Logistics of Graduate School

Logistics of Graduate School

Coursework in Graduate School

Graduate School Coursework

- Proficiency exams are usually required in first year to assess foundational knowledge
- Your course of studies builds on undergraduate knowledge
- Courses frequently require extensive literature research
- Assignments often necessitate specialized software, e.g., ChemDraw or data graphing tools
- Deliverables will test and hone communication skills
LOGISTICS OF GRADUATE SCHOOL

Research

Research in graduate school

- Majority of your time will be spent on research
- May work collaboratively with another graduate student or postdoc, or may work solo under a PI
- New steps initiated by a hypothesis
- Daily small steps progress your research
- Characterized by failures, many, many steps you take will not succeed
- Patience, daily diligence, and perseverance key
- Target is to complete an aspect of a project or several new findings, and publish your findings

Teaching

What does teaching mean for graduate students

- Many graduate students in chemistry serve at least one year in a teaching assistant role; in return, you receive a stipend for living expenses
- Some universities provide training for teaching assistants, others do not
- May involve teaching in a classroom, helping a professor grade assignments, or teaching in a laboratory setting
- Builds teaching skills, methodological research skills, and communication skills
Considerations for International Experience

International student's checklist

- Be sure you will enjoy living where the school is located and consider:
  - Culture, food, religion, language, travel methods, environment, weather
  - Your support system in new country

- Check with school directly for differences in academics:
  - Will your coursework transfer one to one?
  - Do you have the right courses and credits?

- Be aware of additional application requirements:
  - In some cases, you apply to a school, at others, a professor’s group
  - TOEFL, GRE, Student Visa process
## WHAT IS GRADUATE SCHOOL ABOUT?

### Deciding if Graduate School is Right for You

<table>
<thead>
<tr>
<th>Questions</th>
<th>Weight or importance</th>
<th>No Graduate School</th>
<th>P.S.M.</th>
<th>M.A./ M.S.</th>
<th>Ph.D.</th>
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</thead>
<tbody>
<tr>
<td>1. Do I really want to go to graduate school?</td>
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<tr>
<td>2. Which graduate school does my desired career path require?</td>
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<td>3. Do I want the higher salary or higher position?</td>
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<td>4. Am I passionate about chemistry?</td>
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<td>5. Can I afford to go to graduate school with the support provided?</td>
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<td><strong>TOTAL</strong></td>
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2/3/2021
Knowing what you do now about grad school are you interested in? (select all that apply)

- P.S.M. (Professional Science Masters)
- M.A. / M.S. (Masters Programs)
- Ph.D. (Doctoral Programs)
- No Graduate School
- Not applicable

* If your answer differs greatly from the choices above tell us in the chat!

Ten Tips for Successfully Applying to Graduate School
TIPS FOR APPLYING TO GRADUATE SCHOOL IN CHEMISTRY

Ten Tips

Considering a graduate degree in chemistry?

There are a number of factors to assess before and during the application process. Follow these ten tips to successfully plan for and get accepted to pursue a graduate degree in chemistry that positions you for success on your career path.

1. Keep it professional and respectful.

2. Don’t take it personally.
TIPS FOR APPLYING TO GRADUATE SCHOOL IN CHEMISTRY

Ten Tips

Considering a graduate degree in chemistry?

There are a number of factors to assess before and during the application process. Follow these ten tips to successfully plan for and get accepted to pursue a graduate degree in chemistry that positions you for success on your career path.

Focus on the research, not the grammar.

Be timely, but also take your time.
Considering a graduate degree in chemistry?

There are a number of factors to assess before and during the application process. Follow these ten tips to successfully plan for and get accepted to pursue a graduate degree in chemistry that positions you for success on your career path.

Be upfront about any conflicts of interest.

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There are a number of factors to assess before and during the application process. Follow these ten tips to successfully plan for and get accepted to pursue a graduate degree in chemistry that positions you for success on your career path.
Additional Key Resources

Where can I find help?
Planning for Graduate Work in Chemistry
https://www.acs.org/content/acs/en/education/students/graduate/gradschool.html

InChemistry, the ACS Student Member Magazine
https://inchemistry.acs.org/content/inchemistry/en/grad-school/applying-to-grad-school.html

Planning for Graduate Work in Chemistry

Preparing as an Undergraduate

Common questions to consider throughout each phase of the process:

- Why are you pursuing a graduate degree?
- What do you want to contribute to the chemical sciences?
- What graduate school experiences will benefit you?
I applied to grad school—now what?

bit.ly/iappliedweb

February 8
5:00 - 6:30 pm EST

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