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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:



Visit <u>www.ACS.org/COVID19-Network</u> to learn more!

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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.

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What You Will Learn:

- What the world thinks of science during the global pandemic and if skepticism sone 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
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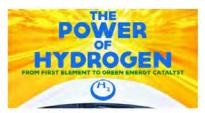
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- The breadth of research that broaden the participation of individuals from groups underrepresented in STEM
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- What You Will Learn:
- Hydrogen production methods and its role as a transportation 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
- 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!

The ACS Bridge Program offers:

- A FREE common application that will highlight your achievements to participating Bridge Departments
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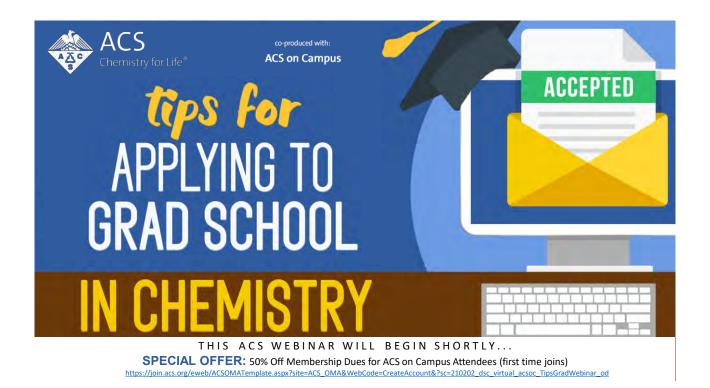
Learn more and apply at <u>www.acs.org/bridge</u>

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Tips for Applying to Graduate School in Chemistry



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

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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, <u>https://www.insidehighered.com/blogs/gradhacker/</u> 7-ways-earning-phd-training-marathon





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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

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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



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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

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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

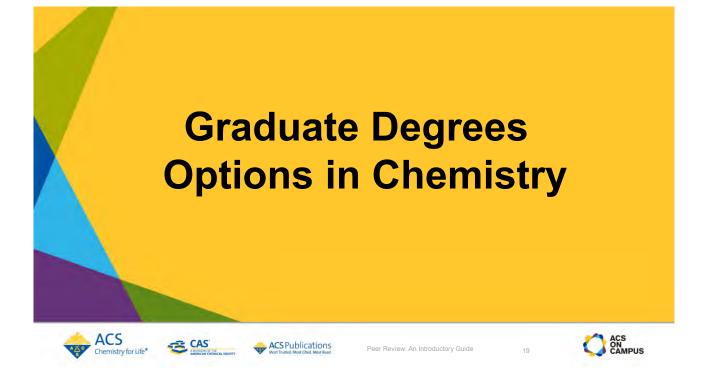
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Motivation is self-driven









GRADUATE DEGREE OPTIONS IN CHEMISTRY

Common Degree and Career Paths





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GRADUATE DEGREE OPTIONS IN CHEMISTRY

Timeframe and Funding

P.S.M. Professional Science Masters

- Student supported costs
- Assistance may be available

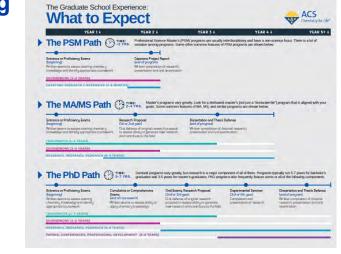
M.A./M.S. Masters Programs

- 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





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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!

GRADUATE DEGREE OPTIONS IN CHEMISTRY

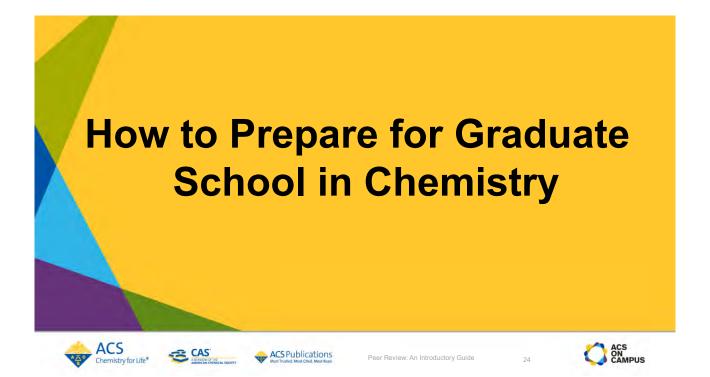
The Graduate Chemistry Landscape is Broad

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



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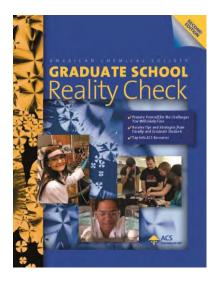


HOW TO PREPARE FOR GRADUATE SCHOOL IN CHEMISTRY

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 ?





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HOW TO PREPARE FOR GRADUATE SCHOOL IN CHEMISTRY

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







HOW TO PREPARE FOR GRADUATE SCHOOL IN CHEMISTRY

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





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







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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



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LOGISTICS OF GRADUATE SCHOOL

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











AN INTERNATIONAL EXPERIENCE

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

		No Graduate School	P.S.M.	M.A./ M.S.	Ph.D.
Questions	Weight or importance	Score	Score	Score	Score
1. Do I really want to go to graduate school?					
2. Which graduate school does my desired career path require?					
3. Do I want the higher salary or higher position?					
4. Am I passionate about chemistry?					
5. Can I afford to go to graduate school with the support provided?					
TOTAL					







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Audience Survey Question

ANSWER THE QUESTION ON BLUE SCREEN IN ONE MOMENT

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!









ACS Publications Peer Review:



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. Keep it professional and respectful.



TIPS FOR APPLYING TO GRADUATE SCHOOL IN CHEMISTRY

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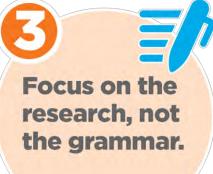
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TIPS FOR APPLYING TO GRADUATE SCHOOL IN CHEMISTRY

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Ten Tips

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Additional Key Resources



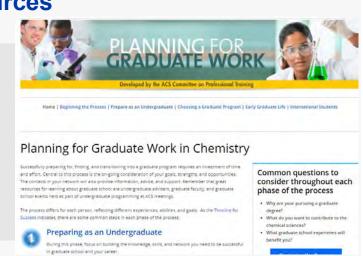
Where can I find help?

Planning for Graduate Work in Chemistry

https://www.acs.org/content/acs/en/ed ucation/students/graduate/gradschool. html

InChemistry, the ACS Student Member Magazine

https://inchemistry.acs.org/content/inchemis try/en/grad-school/applying-to-gradschool.html



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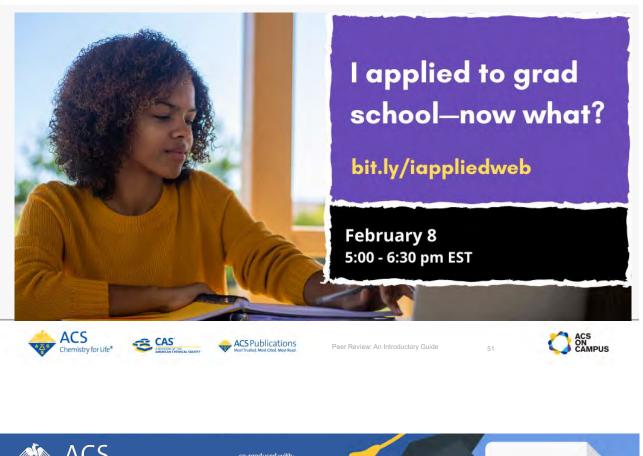


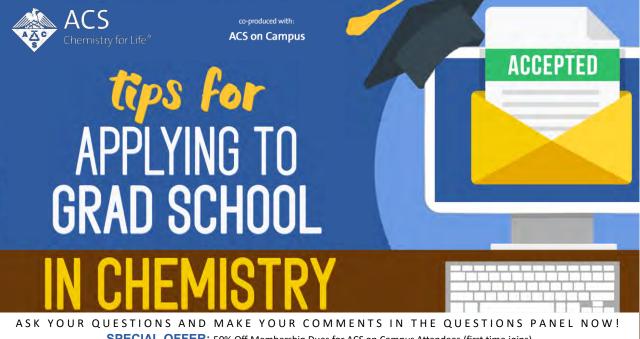


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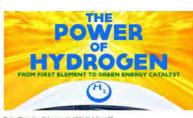
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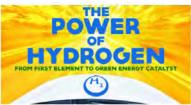
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