

American Chemical Society AMA: We are John and Mary Engleman, ask us anything about advice for careers in chemistry!

AmerChemSocietyAMA¹ and r/Science AMAs¹

¹Affiliation not available

April 17, 2023

Abstract

Hi Reddit! I am John Engelman; I am retired from S. C. Johnson & Son, Inc. and am a Career Consultant for the American Chemical Society. I am here to discuss resumes, interviewing and three workshops. Finding your Path, Working in Industry, and Acing the Interview. The ACS Career Consultant Program, an ACS member benefit, gives members access to a consultant to help guide you through job searching, career transitions, resume writing, and more. To give some background I have both an AAS in Industrial Chemistry Technology and an honorary Doctor of Science from Ferris State University in 2003. I spent 49 years in industry working in radiation and radiochemistry, nuclear power plant under construction, composites, engineering thermoplastics, adhesives, consumer products and capital construction projects. In addition to my industrial experience I have been an American Chemical Society volunteer since 1997 and a career consultant since 2004. I have chaired the Division of Chemical Technicians, Division of Industrial and Engineering Chemistry and the Committee on Technician Affairs. I was recognized as an American Chemical Society Fellow in 2010. Hi Reddit! I am Mary Engelman; I work at Eastman Chemical Company and am a Career Consultant for the American Chemical Society. I am here to discuss resumes, interviewing and three workshops offered by the ACS. I am also here to give you some tips to help look for positions in the chemical enterprise. The ACS Career Consultant Program, an ACS member benefit, gives members access to a consultant to show you some tools to help in your job search, career transitions, resume writing, and more. A little of background about me, I have an Associate degree from Northeast State Community College where I was awarded the Outstanding Alumna award in 2011. I have 24 years' experience working in industrial research. From working at the bench, to scale-up, to pilot plant programs. I am currently working in project and portfolio management at Eastman Chemical Company. In addition to my industrial experience I have been an American Chemical Society volunteer since 1991 (starting as a student Affiliate Group Chair) and a career consultant since 2004. I have been in several positions; Division of Chemical Technicians, Division of Industrial and Engineering Chemistry, Division Activity Committee, Committee on Technician Affairs and Nomination and Election Committee. I was recognized as an American Chemical Society Fellow in 2009. We'll be back at 11:00 AM EST (8 am PT, 4 pm UTC) to answer your questions about chemistry careers, résumés, interview tips and more!

[REDDIT](#)

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AMERCHEMSOCIETYAMA [R/SCIENCE](#)

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CORRESPONDENCE:

DATE RECEIVED:
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AmerChemSocietyAMA ,

Good morning! This is a crazy time to be a chemist as it seems like the great chemical companies of the past are becoming or already are shells (No pun intended) of their former self. What, in your opinion, is the fastest growing, most sustainable specific fields of applied chemistry.

[Drexeltribologist](#)

Hello, this is Mary. Great question. This is changing a lot these days. Just like being on a rollercoaster ride with our careers. If you look at the ACS website, they have an area for innovation ideas and what to watch. An article in C&EN in November 2, 2015 discussed the 10 Start-ups to watch.

r/Science , American Chemical Society AMA: We are John and Mary Engleman, ask us anything about advice for careers in chemistry!, *The Winnower* 3:e145622.29190 , 2016 , DOI: [10.15200/winn.145622.29190](https://doi.org/10.15200/winn.145622.29190)

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I'm a hobbyist/amateur chemist who is self-teaching organic chemistry after some basic chem stuff in college. I am interested in the chemistry of course, but my main focus when I return to college is likely to be a return to computer engineering (I need to finish that major). What options exist to combine computers and chemistry? I have a background in bioinformatics research but I really don't know if "cheminformatics" is a viable career path.

Also, can anyone provide good resources for learning chemistry beyond chem101 stuff?

[LittleMissOctothorpe](#)

Hi, This is Mary. there is a lot of working being done about combining instrumentation to processes, So Computer and Chemistry. This may be an area you would be interested. Infrared spectrometry may be an area of interest to you.

Hi, I'm a new lab technician at an environmental chemical lab running the analytical instruments. What is the best way to branch out and network with people that can help or aid in the field. Or any good analytical conference you can think of.

I'm 23 by the way. Thanks.

[Mr_Ritchy](#)

Hello, This is Mary. Have you attended a regional or local section ACS meeting? These may be ways for you to build your network. PittCon 2016 will be in Atlanta Georgia March 6-10. This is a big conference that many analytical chemists attend. American Chemical Society also has an Analytical Division. This is another place to network.

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[Mr_Ritchy](#)

Hi this is John. Networking is a very important skill and one that takes so effort on your part to meet people. Where to meet those members of your network started with those you went to school with including the professors. For expanding the network I would start with your local ACS section. Then there are the Regional and National meeting of ACS. Make a plan to meet two new people at each meeting. Go to symposia that are in your area of interest. Then there are the Expos with many suppliers another source of network. There is also the PITCON which is a big meeting for the analytical chemists. Another possibility is a well written and maintained LinkedIn account.

Hey, i'm thinking about going into chemical engineering after uni but i'm also interested in working as a pharmacist.

Can you tell me about the pros and cons of each job; Like how fun it is, what kinds of chemistry you would focus on (organic or inorganic), that kind of stuff.

[Millabaz](#)

Hi, This is Mary. It is hard to make a recommendation on what would work for you. Just some things for you to think about. Chemical engineering, you are involved in designing, building and maintaining the

plant. You may also be involved in new technology development. Yes you do a lot of crunching data. But if you like to build, this could be for you. If you get into research and do organic chemistry, it is fun and challenging also. You get to see experiment work or not work, you make new products, design experiments, and yes, you also will look at data and optimize your product. It is what is fun to you? Pharmacy is in another arena. Do you want to distribute and formulate medicine? or do you want to do research?

Hey John and Mary! Thank you for providing us with this opportunity! I'm currently studying Chemistry with Business in college in hopes to enter the business aspect of the chemistry world. I'm interested in something such as data analysis or management but not entirely sure yet. What possible companies and positions would you guys suggest I look into that would be interested in hiring someone such as me?

[Chem2Hard](#)

Hello, this is Mary. There are several positions in industry that needs both Chemistry and Business experience. Managers throughout the chemical industry (Business manager, Group leaders, etc). IT interaction with the businesses, it helps if the person that is developing the IT can understand the chemistry needs. Other Positions include Sales, Marketing, Technical Service to customers.

Hey there, I'm an environmental chemistry PhD finishing up my thesis and really want to get into the field of consulting such as risk assessment, remediation, and the sort. Do you think this is feasible without a post doc? Are there jobs like that out there for PhDs?

[thatisgrossman](#)

Hello, this is Mary. I know of several people that actually do just that. They consult to small businesses that do not have an environmental chemist on staff. this is outsourced. Also larger chemical reach out to consultants.

Hey there! I'm a chemistry major at a smaller school in northern georgia. I've been told by a few people I've run into that with just a chemistry bs I'll basically just clean test tubes in any lab I ever work in. How true is this? Also how damaging is the fact that my school is small to my ability to even get a related job after I graduate?

[Punkedorange](#)

Hello, this is Mary. I am an undergraduate professional. While in the lab, I designed and run my experiments with a chemist. I had my own projects, I have several patents. So, no I just did not do dishes. I also came from a smaller school. They look at the best person for the job. It will be finding jobs where you want to live and work that may be the challenge. I would recommend you go to <http://www.webstersonline.com/> This is a way to find those jobs, and link to companies you may not of heard of.

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[Punkedorange](#)

Hi this is John. Graduating from a small school isn't an issue. Companies hire skill sets and the degree is the ticket to present them. From personal experience what you do and how far you go depends on your willingness to go above and beyond in performing what is asked of your position. Then acquiring the skills to move up to the next level. The notion of "a pair of hands" is old and very much outdated. The size of the school isn't really as big a problem as you might think if you are going directly into industry. While companies will hire from certain schools it is your preparation of an excellent resume and highlighting your skills to those being outlined in the position statement that get the phone interview. Then it is you selling yourself.

Greetings, as someone who is mostly interested in material, superconductivity, and nano-tech aspects of chemistry; I was wondering if you had any pointers on how to break into those fields and what the prevalence of undergraduate research pertaining to those fields may be. Should I seek out summer research opportunities regardless of which area of chemistry they pertain to, as well as jump at every opportunity to try and do publications? Additionally how far do minors and dual majors really affect the likelihood of being administered to a graduate program, as I'm currently a math/chemistry dual major that also has interest in minoring in computer science and philosophy. Lastly with the stunted projected growth of the chemistry field by bls.gov would you agree that now more than ever its more about who you know than what you know when trying to find work as a chemist.

[worstchemistNA](#)

Hello this is Mary. Because the bar has been raised when it comes to the chemistry enterprise, Graduating with a degree may not satisfy everything an employer is looking for. So doing Undergraduate research, doing internships, etc, adds to your portfolio. I also recommend being involved in clubs and organizations to help build your soft skills, (presentation skills, communication, team leading, leadership and more). For your last statement, I think it is a combination of who you know, what you know, and how do sell yourself. So your resume what does it look like, does it highlight your skills and expertise? What does your brand say about you?

As a high school science teacher, what are some things that I could do to get students interested in a career in chemistry?

[FatherofZeus](#)

Hi this is John. I am attaching a link to the American Association of Chemistry Teachers. This is site for those teaching science to all grades. It is a very good source of information, experiments etc. It for school teachers as you will see and a good spot to join and grow a network. You could also get help from your local section of the American Chemical Society.

<https://www.teachchemistry.org/content/aact/en.html>

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[FatherofZeus](#)

Hi, this is Mary If you would go the ACS website, they have a lot of tools and great ideas of how to interest students in chemistry.

Have you thought about starting a Chemistry Club? This link will give you ideas.

<http://www.acs.org/content/acs/en/education/students/highschool/chemistryclubs.html>

Hello. So I've become very interested in doing computational/theoretical chemistry after doing a bit of it in undergraduate research, and am currently planning to study it further in graduate school. My question is, what kind of opportunities are available for someone with that background outside of academia?

[NarwhalJouster](#)

Hi, this is Mary. Industry uses computational/theoretical chemists also. so don't limit yourself to academia. This field is special and they are utilized on existing systems and new technology/chemistry.

Hey John and Mary, I am currently getting a MS in chemistry where I do mostly organic and physical chemistry. However, being exposed to various chemicals in the lab and looking at the mortality rates among chemists I am thinking about switching to a less hazardous chemistry field. Are there chemistry careers that work with relatively less hazardous chemicals (I was thinking about food chemistry or cosmetics).

[H-O-O-H](#)

Hi this is John. There are many areas of industry that use chemistry degrees that do not directly handle chemical in addition to areas that are like the food and cosmetics industry. You might think about company libraries, sales, marketing, IT etc. The key is a well composed resume that shows the skills required to preform the requirements of the position as posted. Now considering companies for companies meeting your requirements you might look to consumer products in addition to the ones you have mentioned.

Further you could take advantage of the ACS Career Services workshops. The workshop "Finding your Path" and "Working in Industry" would help further define where is a good fit for your values and strengths.

There is also a tool that helps you find companies that do that sort of research/product development in a given area. <http://www.webstersonline.com> It uses NAISC code.

Hi John and Mary, your AMA on reddit couldn't have come at a better time. Thank you!

I am a graduate student in Chemistry and will graduate within the next couple months. My PhD is focused on organic synthesis, metabolomic and green chemistry applications. I wish to pursue a career (process development) in the industry and then transition to management in chemicals/pharmaceuticals. Here come the questions.

Should I do postdoc or MBA?

Do companies allow time for doing MBA while working?

Being an international student currently on F1 visa, how often do companies sponsor visa (H1, green card) for such professionals? What is the best strategy to apply for jobs in the industry (I check internet job boards and apply online but the response rate is close to zero). Where can I access the ACS Career Consultant Program to get my resume and cover letter checked?

Thank you for your time!

[sadakatali](#)

Hi this is John. Lets start with how to contact a Career Consultant. The link is www.acs.org/careers This will take you to the career navigator where you can find the assistance you need. This is good

place to get answered a number of your questions. We have consultants that are very familiar with F1, H1 issues and are much more qualified to answer those question. They can also help with resumes to get them optimized and thus present a better image to the company you are applying for position. The MBA question "do companies allow time for pursuing a MBA. This is a company by company decision. And usually a person by person decision.

Postdoc or MBA is a decision only you can decide.

Hey, I'm wondering how much the college you get a degree from affects the quality of chemistry jobs you can apply for. I'm kind of torn right now between staying at my temp job as a lab tech and going to night classes at an alright college to finish my BA or quitting that job to go to a more prestigious university for my BA.

[russian1039](#)

Hello, this is Mary. Go to school and working is hard. This is like several others that are thinking out their options. Will this Temp job lead to a full time position? I always say to continue learning, going to night classes could help in your career (I am not concerned smaller colleges for the BA) it is the skill and expertise you learn and how you present to potential employers.

Good Morning. I am currently finishing my AAS and going on to finish my undergrad in Chemistry and have a choice of a strictly chemistry focus or a chemistry and bio focus and was wondering what the better course of action would be if I am interested in perusing a career in toxicology, pharmaceuticals, or going on for graduate study? Also, is there any specific educational focus that would make me more desirable to employers in industry?

Thanks for doing this AMA!

[Usul123](#)

Hello this is Mary. I see several of you are concerned about the path to take. This is very hard for me to tell you what would work for you. So I can give you some things to think about. What career interest you? Have you considered working for the EPA or FDA? Industry looks for the best person, so doing extra and having research while in college helps. Everyone that completed the curriculum will have a degree, how to you stand out compared to your classmates?

Hi I am high school sophomore interested in Chemical Engineering as my undergrad degree followed up by a MBA during grad school. Do you think this is a good combination of technical skill and business training to work for anything from R&D to refining, and potentially transferring over to the more business side later on in my career?

I have a friend who was initially a Chem E. at Texas A and M but transferred to Petroleum E. as he saw it more applicable and less theoretical. If I graduate with a degree in Chemical engineering will I be set back and disadvantaged in comparison to my peers? Thanks!

[BanditoJesus](#)

Hi, This is Mary. Every degree has its advantages and disadvantages. If you want to stay in Texas, Petroleum is big. However, they need chemical engineers also. I know several people that do have a Chem E degree and MBA. They are managers with the Chem E fields. It depends, do you want to do what your peers do? Or are you interested in something else?

Hello, thank you for having this AMA! I was wondering, why both of you choose to the into the field of chemistry? Since I attend a school that is heavily focused on science, and was wondering what field I would want. Thank you for having this AMA!

[bronh](#)

Hello this is Mary. As I was growing up, I like building things and I always was asking how things did what they did. With being an undergraduate professional, I have been able too do Engineering and all sorts of chemistry. So I get the best of the two worlds. This worked for me.

I came out of school with a BS in chemistry and physics right as the economy collapsed. Because of that it seems I have been completely locked out of ever finding work in the field. How do I get around that?

[atomcrafter](#)

Hello, this is Mary, Without knowing what you have done to find a position, what is the boundaries of where you are applying, I don't know how I can help you. However, if you are an ACS Member, you can get a career consultant to help you. I don't think you have been locked out, you may just need some guidance on how to best sell your skills and build the network to help find those positions. Are you limited by location? this may also be a concern.

Good afternoon, Thank you for doing this AMA. I'm currently a Junior in college double majoring in Chemistry and Mathematics with minors in Physics and Computer Science right now I've been looking for internships but can't decide if I should apply to chemistry or math related internships? Also, I would like to know what type of job opportunities would be open for me once graduating or should I look into going to grad school for Chemical engineering?

[darkiller55](#)

Hi this is John. If your are interested in both chemistry and math I might suggest an internship in computational chemistry. This fits both spheres of interest. Internships are a real benefit when you start the application process of getting a position in industry. There are always advantages to graduate degrees and chemical engineering is no exception. This decision may well be answered after you have done an internship.

I'm an undergraduate in chemistry. I was just wondering what your thoughts are on the future of computational chemistry? Will it be an essential tool for all chemists or will classical chemistry always be enough to excel in most chemistry-related careers? Thanks.

[Brasscogs](#)

Hi this is John. I have several friends that work in computational chemistry. They think there is a real future in the area. Will it be an essential tool for all chemists probably not but it will be a tool for research. Excelling in industry is a matter doing good work, completing projects on time and going above and beyond. Work at the next level above your current level. Remember that this is a life long learning process. Another resource is to use the Career Navigator, as an ACS member the service is free. www.acs.org/careers Another tool to check where computational chemistry is <http://www.webstersonline.com>

Hello, thanks for taking time out of your day to do this AMA. I am a junior getting a BS in chemistry and I am curious as to what skills really stand out when applying to most labs/jobs. Also i am at a mid tier research university with a 3.0 GPA :(what are some things I can do to make myself much more attractive to graduate schools?

[Lostapound](#)

Hi this is John. Being from a mid tier research university isn't really a draw back. Industry hires skills and your resume is a way to put them forward to industry. A well constructed resume highlighting the skills asked for in the position statement is the key. I would recommend that you have your resume reviewed by a career consultant which is a free service offered to ACS members by the ACS Career Services. The website is www.acs.org/careers Another thing that will make you stand out is if you have had an internship. In practice some companies have internships and hire candidates from some of those that have interned.

I'm currently in a Ph.D. program working on inorganic/nuclear chemistry, but I'd really like to pursue a career doing something environmental with this; I love being outdoors in nature. Is there a way to fuse these two? I have considered bioremediation, but my fear is that I don't know very much about biology, just chemistry.

Along these lines, how easy is it to pursue a path that is somewhat different from your degree?

Thanks in advance!

[rocketparrotlet](#)

Hi this is John. It is somewhat harder for a PhD candidate to pursue a path that is different from their degree but it can be done. With the values I see from your post it might be a position in government might work. Something like the EPA. It is important to highlight your skill set and point those directly at the position you require I might suggest that taking the ACS Careers workshops "Find your Path" then the relevant workshop/s "working in government" or "working in industry". Another step is to work with the ACS Career Consultant at www.acs.org/careers Find a consultant using their bios that matches your desired career and working with them.