

American Chemical Society AMA: Hi, we are Chemjobber and Gregory Eells here to chat with you about what most of us (if not all) had to deal with ? graduate school stress. AUA!

AmerChemSocietyAMA<sup>1</sup> and r/Science AMAs<sup>1</sup>

<sup>1</sup>Affiliation not available

April 17, 2023

### Abstract

Hello, everyone! We are Chemjobber and Gregory Eells, and we're here to chat with you about graduate school stress. A little bit about us: My pseudonym is Chemjobber, as is the name of my blog. I am a Ph.D. chemist in industry. I mostly cover the chemistry job market, but I also like to talk a lot about life as a chemist, whether it's how to find a job, how to relate to your coworkers and also just how to get through the journey/adventure/joy/living hell that can be getting a graduate degree in chemistry. And my name is Dr. Gregory Eells; I have a Ph.D. in Counseling Psychology and am a licensed psychologist in the State of New York. I have worked in higher education mental health for 20 years and have served as a director of a university counseling service for the past 17 years. I am currently the Director of Counseling and Psychological Services at Cornell University. Hi, Chemjobber again. One day in late 2012, a chemistry blogger (Vinylogous) and I decided to write a five-part series on different mental health aspects of graduate school. It was quite a journey, with lots of people jumping in, including prominent chemistry bloggers and also full professors talking about their difficulties with the vagaries of research. Everyone has a story to tell about this, and a lot of them came out. It's Greg again. Graduate school stress is in fact a big problem. In the time I have worked in higher education mental health, I have seen hundreds of graduate students struggling with mental health and general life concerns. Graduate school can be an incredible time of discovery and professional development and can also be a time where work expectations are very high and students often do not have some of the same protections of undergraduates or faculty members. In my graduate training I was very fortunate to have very supportive faculty and at times I did find the transition from graduate student to new professional very challenging and difficult. Feel free to ask us anything that's on your mind, we're here to help. We'll be online at 10:00am ET to begin answering your questions! For more on grad school stress, check out these articles in the Sept. 14 issue of C&EN: Opening Up About Stress In Graduate School: <http://cen.acs.org/articles/93/i36/Opening-Stress-Graduate-School.html> Grad students share strategies for taking their minds off work: <http://cen.acs.org/articles/93/i36/Stress-Relief.html> Also, check out Chemjobber and Vinylogous' five-part series on grad school stress: <http://chemjobber.blogspot.com/2013/01/is-graduate-school-in-chemistry-bad-for.html> CJ and I were just talking about graduate school stress and we thought it was worth discussing the role of alcohol in how many graduate students manage their stress and anxiety. Obviously, alcohol use is a part of social life and many social gatherings in the US and other countries. However, graduate students can turn to alcohol or other substances as a way to escape stress. There can often be a "work hard play hard" component to some graduate school cultures. The challenge is this use can become problematic and evolve into dependence. Alcohol use is not an effective long term strategy for stress management. This is Greg and I have to sign off for now. Great discussion everyone. UPDATE: CJ here, it's 11:20 Eastern, I'll be back in an hour or so.

[REDDIT](#)

# American Chemical Society AMA: Hi, we are Chemjobber and Gregory Eells here to chat with you about what most of us (if not all) had to deal with ? graduate school stress. AUA!

AMERCHEMSOCIETYAMA [R/SCIENCE](#)

## ABSTRACT

Hello, everyone! We are Chemjobber and Gregory Eells, and we're here to chat with you about graduate school stress.

A little bit about us:

My pseudonym is Chemjobber, as is the name of [my blog](#). I am a Ph.D. chemist in industry. I mostly cover the chemistry job market, but I also like to talk a lot about life as a chemist, whether it's how to find a job, how to relate to your coworkers and also just how to get through the journey/adventure/joy/living hell that can be getting a graduate degree in chemistry.

And my name is Dr. Gregory Eells; I have a Ph.D. in Counseling Psychology and am a licensed psychologist in the State of New York. I have worked in higher education mental health for 20 years and have served as a director of a university counseling service for the past 17 years. I am currently the Director of Counseling and Psychological Services at Cornell University.

Hi, Chemjobber again. One day in late 2012, a chemistry blogger (Vinylogous) and I decided to write a five-part series on different mental health aspects of graduate school. It was quite a journey, with lots of people jumping in, including prominent chemistry bloggers and also full professors talking about their difficulties with the vagaries of research. Everyone has a story to tell about this, and a lot of them came out.

It's Greg again. Graduate school stress is in fact a big problem. In the time I have worked in higher education mental health, I have seen hundreds of graduate students struggling with mental health and general life concerns. Graduate school can be an incredible time of discovery and professional development and can also be a time where work expectations are very high and students often do not have some of the same protections of undergraduates or faculty members. In my graduate training I was very fortunate to have very supportive faculty and at times I did find the transition from graduate student to new professional very challenging and difficult. Feel free to ask us anything that's on your mind, we're here to help. We'll be online at 10:00am ET to begin answering your questions!

For more on grad school stress, check out these articles in the Sept. 14 issue of C&EN:

Opening Up About Stress In Graduate School: <http://cen.acs.org/articles/93/i36/Opening-Stress-Graduate-School.html>

Grad students share strategies for taking their minds off work: <http://cen.acs.org/articles/93/i36/Stress-Relief.html>

Also, check out Chemjobber and Vinylogous' five-part series on grad school stress:

<http://chemjobber.blogspot.com/2013/01/is-graduate-school-in-chemistry-bad-for.html>

CJ and I were just talking about graduate school stress and we thought it was worth discussing the role of alcohol in how many graduate students manage their stress and anxiety. Obviously, alcohol use is a part of social life and many social gatherings in the US and other countries. However, graduate students can turn to alcohol or other substances as a way to escape stress. There can often be a "work hard play hard" component to some graduate school cultures. The challenge is this use can become problematic and evolve into dependence. Alcohol use is not an effective long term strategy for stress management.

This is Greg and I have to sign off for now. Great discussion everyone.

**UPDATE:** CJ here, it's 11:20 Eastern, I'll be back in an hour or so.

[READ REVIEWS](#)

[WRITE A REVIEW](#)

CORRESPONDENCE:

DATE RECEIVED:

September 30, 2015

DOI:

10.15200/winn.144352.28395

ARCHIVED:

September 29, 2015

CITATION:

AmerChemSocietyAMA ,  
r/Science , American Chemical Society AMA: Hi, we are Chemjobber and Gregory Eells here to chat with you about what most of us (if not all) had to deal with ? graduate school stress. AUA!, *The Winnower* 2:e144352.28395 , 2015 , DOI: [10.15200/winn.144352.28395](https://doi.org/10.15200/winn.144352.28395)

© et al. This article is distributed under the terms of the [Creative Commons Attribution 4.0 International License](#), which permits unrestricted use, distribution, and redistribution in any medium, provided that the original author and source are credited.



**The job market for PhDs has always been tight, but it seems to have gotten worse, is this borne out in the numbers? What should be done to address it? Is it time to restrict the number of PhDs that are granted?**

[nallen](#)

(CJ here)

This isn't really the AMA topic, but it is definitely a source of stress for graduate students!

I think it is borne out in the numbers that, during the Great Recession years (2007-2013 or so\*), the number of chemistry PhDs per year did not go down (2000-2400/year), but the number of available entry-level positions that were truly desirable (i.e. large company jobs, etc) went down and that entry-level wages continued to fall, especially against inflation. (The ACS Salary Survey talks about that, yearly.)

I have no idea what should be done to address it, other than that we need **much** better data collected on what happens to graduate students after they leave graduate school. We need to be better at disseminating that data.

(nallen, I would really recommend Paula Stephan as a AMA candidate. She's amazing on this topic.)

**This is such an important topic, thank you for your work in this field and for taking the time to speak with us today! Being a young professor on the tenure-track is a pretty all-consuming endeavor. By pushing graduate students hard to excel and reach their potential are we preparing them for the grueling life on the tenure track or are we doing more damage than good? It's been my sense that each student is unique and should be invested in and treated as such (some will thrive under pressure, some will collapse); students should be mentored in a manner that will increase their individual likelihood of success (and for whatever 'success' means to them, not to me!). But by treating students differently and apply differing pressures to achieve, I often wonder if I'm not providing all of them the same level of training? If one student comes out of my lab with 5 papers and 3 platform presentations at national conferences and another comes out with 1 paper due not to intellect but ability to manage stress, have I done a disservice to the student with 1 paper by not pushing them harder?**

**Do you have any advice for a young professor in this regard?**

[p1percub](#)

(CJ here)

I have never been a professor, so I don't consider myself a subject matter expert here. But I do think that professors could probably take a page from "the corporate world" and routinely (twice a year?) ask students/postdocs "What do you want to get out of this?", i.e. "I wanna be a professor" or "I dunno" or "I wanna work in industry."

That would probably set a long-term goal, which would then set up milestones that you and your student could work towards, i.e. in the next 6 months, we're going to finish this project, gather the data and then publish, etc.

I think you're being smart in recognizing that different students have different needs - I think that's a level up from a lot of PIs.

Also, I do think this is a great questions for any other PIs on this subreddit to answer, and you may want to ask other professors in your department or your past mentors, as to what their answers may be?

**My boyfriend is on his last year and a half for his PhD in Chemical Engineering. We're currently long distance since I moved to another state for a job. What are some things I can do to be supportive during his last leg of his graduate school career?**

[itsmywanderingmind](#)

(CJ here)

It's great that you want to be supportive! Reminding him of "who he is outside of a student" is pretty important. I think graduate students get wrapped up in that identity. Do remind him that he's an intelligent person who is loved and cared for by you, his family and his friends.

I do tell folks to *not* ask the graduate students and postdocs in their lives the difficult questions, like I have here: <http://chemjobber.blogspot.com/2014/12/a-chemjobber-holiday-tradition.html>

The most important person to ask his opinion is probably him?

**What are the most common complaints among graduate students? Obviously, we know that graduate school is difficult, but what sort of other insights can we gain from these complaints?**

**For example, are students perceiving the faculty as too demanding because of a desire to pad their CVs?**

[Xanatos903](#)

(CJ here)

Great question. I think that it's a combination of:

1. I have too much to do!
2. Nothing I do works!
3. My boss hates me!
4. I hate science now!

I think #2 is one of the best reasons to be in graduate school, i.e. the point of it is to discover new science and to learn your best process for "fixing" things. Also, I think graduate school is a great place to attempt to learn time management.

That said, I do think that #3 is a really common complaint. Chances are, your boss does not actually hate you. But I think that the PI/student relationship can be incredibly fraught. I do think PIs are under tremendous levels of stress (especially nowadays, when funding is super-tight), and they probably have never been trained in how to deal with students.

That said, I think that #3 is also a great thing to learn to deal with in graduate school, i.e. you will not always get along with your boss. So it is a great training ground (as is any entry-level-ish position) to learn how to grow in relationships.

I think #4 is a tricky one - I think it is good to remind oneself of the wonder/joy/whatever emotion that got oneself into the field, whether it is inspiring books and inspiring speakers. How do other folks deal with "I am burned out from this field?"

**Culturally, for what is the average grad student unprepared even after graduation?**

[CIsjall](#)

(CJ here) I think the expectations of the working world (culturally) can be quite different from academia, especially with dress, the way you interact w/colleagues, etc. It can be quite a culture shock. Academia really does routine places for the free exchange of ideas - that isn't necessarily so for industry, which is too bad. (The best industrial research organizations, of course, are pretty good at making this sort of

thing happen.)

**Grad school was probably the most exciting and most stressful time of my life. My experience has been that those who haven't gone through it don't understand the stress level involved, making it hard to relate to them.**

**How do the levels of stress in grad school compare to other life events that the general public may better relate to?**

[nallen](#)

(CJ here)

I have often likened graduate school to a marathon where you don't really know where the end will be, i.e. there are no mile markers.

The activities that people will recognize are more like "big exams" or "putting on a massive one-person play" or "moving day, every week, with the possibility of death (in chemistry, anyway.)" (Joking, obv.)

**Grad school was probably the most exciting and most stressful time of my life. My experience has been that those who haven't gone through it don't understand the stress level involved, making it hard to relate to them.**

**How do the levels of stress in grad school compare to other life events that the general public may better relate to?**

[nallen](#)

Graduate school was also one of the most exciting and stressful times of my life as well, and overall I had a great graduate school experience. It is really impossible to compare peoples' different experiences of stress but there are several salient factors that make grad school stressful. One is the often limited financial means. It is tough being in you mid to late twenties early thirties watching your fiends with jobs build an economic base while you still live like a student. Also the dual responsibilities of being a student and a professional who is teaching and conducting research can be incredibly stressful.

Greg.

**How prevalent is impostor syndrome amongst graduate students? Does the atmosphere of graduate school (competitiveness amongst students, elitism from those who went to "better" schools", gender disparity) lend itself to the seemingly endless feeling of never measuring up to one's peers?**

[InForTheHaul](#)

(CJ here) Totally common. I've talked to obviously successful postdocs (one in particular) who are now assistant professors, and the impostor syndrome still exists.

**A lot of time I feel like nothing I'm trying is working out in the lab. How can I focus more on the development of knowledge and less on the failures so I don't get so stressed out? I just feel so overwhelmed by the boom crash cycle of work work work > analysis > nothing worked > do something stupid > repeat.**

[lasserith](#)

(CJ here)

If there is one cliché I expect to be using again and again today, I think it is "focus on the process." I think scientists are better served by thinking deeply about the experiments that they want to perform, doing those experiments the best way possible (i.e. planning ahead, having the right reagents, using the best technique, etc.) and then doing the experiments knowing, "I have done the experiment the best way I know how." Obviously, there needs to be thought applied when "nothing worked", i.e. how can I do something different to make it work?

The other thing to do (and I know this is more or less impossible) is to say to oneself, "because my experiment failed does not mean that I am a failure." That's a really hard one, but tying oneself to one's reactions, in my opinion, is kind of a recipe for lots and lots of stress.

(That's not to say I did not do that myself - I used to say in graduate school, "I don't have any problems that couldn't be solved by me running another reaction." That was a kind of dumb thought.)

**What is the best way to deal with the stress that comes with grad school? I've been spending more time in the lab than anywhere else and I don't have much free time.**

[cowboykev](#)

As I said in the previous post, at some level the demands of graduate school are not possible. That makes it even more important to intentionally create some space for other activities. Greg

**Do you have any insight into the stress levels of part-time graduate students?**

**My entire graduate career has been as a part-time student while simultaneously juggling my work-life balance (full time job at a research facility and getting married/having children). I rarely run into anyone that is in a similar situation as me so i'm eager to hear any insights you may have.**

[j\\_mcm](#)

Graduate school is obviously a very stressful endeavor and doing it part time while juggling other life commitments can be an impossible task. The best advice for part-time graduate students is to embrace the part-time nature of the work. Don't feel pressure to move forward as quickly as other students. You have other very important things in your life . Greg

**What are some general tips for managing stress for a graduate student? Any tips for dealing with general anxiety? How can I go about making social circles outside of the department and the lab?**

[smallestklein](#)

General tips for managing anxiety always include some focus on keeping things in perspective. It can be very easy especially in graduate school to feel like a setback or difficulty can ruin your career path. Reframing these events as opportunities for growth can be helpful and reduce the resulting stress. Other components around managing anxiety include taking time to be in the present moment. Anxiety results from all of our psychological energy being placed into the future. An intentional focus on your breath, appreciating nature in the moment or actively engaging in meditation or mindfulness has been shown to drastically reduce anxiety.

**What are some general tips for managing stress for a graduate student? Any tips for dealing with general anxiety? How can I go about making social circles outside of the department and the lab?**

[smallestklein](#)

(CJ here)

To meet people outside of the lab or department, I would really suggest looking into the different clubs and such that your school has to offer. I tried a little Brazilian Jiu-Jitsu when I was in graduate school - I wasn't very good at it, but it did take my mind off of failures in the laboratory!

**I'm currently in my last 8 months of my PhD in Synthetic Chemistry in Canada. Do you have any tips for this last (and most stressful) part of this experience to help it go smoother?**

**How is it even possible to balance writing your thesis, applying for jobs, finishing lab work, writing papers, and being a Teaching Assistant? Let alone have any time for a social life.**

[DNAmutator](#)

It's not possible. That is the real challenge of graduate school is accepting this and then choosing your path in a way that works for you. Having a social life, exercising, meditating and doing things that rejuvenate you are foundational and if you cut them out you will not be able to do the other things well.  
-Greg

**Chemjobber and Greg, thanks for this AMA. As someone who has worked with grad students, I want to get your take on advisor/grad student professional relationships. (I have my own I can post later.)**

**In my experience, I've seen students who join a research group and treat their advisor as their 'buddy', going out for lunch and being social during working hours. The "My advisor is awesome, we go out for beers/lunch and complain about stuff" attitude. Then, the student is upset and frustrated when their friendly advisor chews them out for not finishing an experiment or not reading a paper for group meeting. The student feels betrayed (I thought they liked me?) and now stressed because they didn't realize their advisor has their own stresses (publishing, teaching, grant writing), and if the student doesn't contribute or get their work done, the advisor's work suffers too. Can you give grad students some tips for how to have a good working relationship with their research advisor?**

[auntbabe](#)

(CJ here) Hi, auntbabe, that is a fantastic question. I have heard this problem/question raised in my own research group, especially when the boss was in the lab, and not in his office, as he got older/gained more responsibilities.

I think it is important for students to see things from the PI's perspective, i.e. unless they are a well-established PI, this relationship is really, truly mutual and graduate students can help a PI as much as a PI can help graduate students. Learning that there is a give-and-take early on is probably really important.

I wish I had a really good rubric for "how to get along well with your boss" - I am not sure I have a set of ideas. I think "learning what they want", "how to deliver it to them" is important.

**What is your take on the current state of enforcement of employment law protections for chemistry PhD students and academic postdocs?**

[AdamColligan](#)

(CJ here) Bluntly put, they suck massive [body part here.] Realize that you're on the short end of the stick for every single interaction, i.e. between you and your PI, you and your department and you and your research institution. Nothing will change that.

(And still, people do okay, mostly. But the horrible cases (Sangji, etc) are horrible.)

**Thanks for the AMA! I am a PhD chemist (working on getting the proper flair) working in industry for the past three years right out of grad school. I work for a small, privately owned company of about 160 employees, most of which are either sales or marketing. My department includes a total of three people: myself, a fellow chemist and the department head, who has been working at the company longer than I've been alive. One of the hardest things I've had to deal with while working in industry is how to interact with the sales and marketing departments. They have little to no concept of the technical aspects of the products that we manufacture, or of the capabilities (or lack thereof) of new, potential products. They frequently ask for things that are scientifically highly unlikely, but don't like hearing that something cannot be done (at least to the level that we are technically and financially capable of). My question is: do you have any advice in interacting with non-scientists in the world of industry? Thanks for your time!**

**[Dktrcoco](#)**

(CJ here) Great question. I have this problem too, which is why I am answering this question. What I have found is that I do my best to listen to their needs, *not* to tell them "that's impossible!", and to make sure they know that I am Trying To Help. Then, it's an art to tell them gently what I can provide, and how I can move them closer to What They Really Want.

Dunno if that helps.

**I have an M.S. in chemistry, debating on going back for the Ph.D (I couldn't handle the stress my first time through because I was very isolated where I was. Next round will have better support). Is it worth the Ph.D? I feel like I'm spinning my wheels here =\**

**[Photovoltaic](#)**

(CJ here) I think you need to think deeply (take a week or two), write down your thoughts (or record them somehow) about What You Really Want in your career in chemistry. If those more align with getting a Ph.D. (i.e. I Want To Be The Boss/My Own Boss), then perhaps it's worth it for you to go to graduate school.

**Do you think it is a good idea to join the ACS? I got nominated to join by some of my professors. I believe it would be a good thing to have on my CV, as well as the additional resources it would provide for me.**

**Edit: I am currently a Bioinformatics major.**

**[bagelbites297](#)**

(CJ here) Go to the chemistry Reddit, look in the sidebar for an FAQ on this.

**What were your single best (other than defending) and worst experiences in grad school?**

**[mistersausage](#)**

(CJ here) It's ~ten years on, and I've mostly blotted out the memory, but it's the opening anecdote here for "single worst":

<http://chemjobber.blogspot.com/2013/01/is-graduate-school-in-chemistry-bad-for.html>

**Hi! I'm a senior at Boston College majoring in chemistry, and my GPA is abysmal. Like a 2.90. Is it worth it for me to even try applying to grad school?**

**[lckystickyy](#)**

(CJ here) Your research experience is more important than your GPA, but you will have to address it in your applications.

**Hi there! Thanks so much for doing this AMA. I am about five months out from finishing my Ph.D in Chemistry and beginning the job search for a career in industry. Can you give any advice on keeping stresses to a minimum during this time period?**

[ooctopus](#)

I found the job search process very stressful when I was completing my graduate work. I was submitting cover letters and vitas to multiple places and getting a fair number of rejection letters. One of the most important things I did and I have seen other graduate students do was to keep focused on the process of taking care of yourself (sleeping regularly, eating right, exercising and completing the professional work I needed to complete). I had to learn to let go of the outcome of this process and realize it was not in my control.

Greg

**How valuable are "soft skills" like public speaking or networking in today's job market for Ph.D. chemists? Is it worth spending time on developing them in graduate school?**

[PerkyTank](#)

(CJ here) It is really, really, really important. Yes, it is important to learn how to communicate one's science (and other people's science) in graduate school. You want to try to nail every single presentation (and give yourself room to fail.)

Networking is hard, but it is important to try to learn to do that as well.