

Science AMA Series: Hi Reddit! I am Jennifer Maclachlan, a small chemical business owner and science café founder. Ask me anything about entrepreneurial happenings or tips in the chemical sector.

AmerChemSocietyAMA ¹ and r/Science AMAs¹

¹Affiliation not available

April 17, 2023

[REDDIT](#)

Science AMA Series: Hi Reddit! I am Jennifer Maclachlan, a small chemical business owner and science café founder. Ask me anything about entrepreneurial happenings or tips in the chemical sector.

AMERCHEMSOCIETYAMA [R/SCIENCE](#)

[removed]

[READ REVIEWS](#)

[WRITE A REVIEW](#)

CORRESPONDENCE:

DATE RECEIVED:
January 25, 2017

DOI:
10.15200/winn.148526.65875

ARCHIVED:
January 24, 2017

CITATION:
AmerChemSocietyAMA ,
r/Science , Science AMA
Series: Hi Reddit! I am Jennifer
Maclachlan, a small chemical
business owner and science
café founder. Ask me anything
about entrepreneurial
happenings or tips in the
chemical sector., *The
Winnower* 4:e148526.65875 ,
2017 , DOI:
[10.15200/winn.148526.65875](https://doi.org/10.15200/winn.148526.65875)

© 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.



Hi Jennifer

Thank you very much for committing your precious time to this AMA for our community here.

I want to first of all congratulate you on your business success and also commend you on your science cafe initiative. It's inspirational to see women like you rising up as role models for the next generation of potential scientists and entrepreneurs. Well done.

I have 3 questions.

1. What inspired you to start the science cafe idea? How did you fund it? Do you plan to replicate it elsewhere?
2. How is it like working for your dad? I have never had the privilege of working with a family member and wonder whether it has been a positive experience and if there are challenges.
3. What next? As an entrepreneur, what is your next challenge and goal?

Thanks again in advance.

[mvea](#)

1) I got the idea to host a science cafe on Cape Cod because as a member of the American Chemical Society (ACS), I became aware of their science cafe mini-grant program. The ACS offers ~\$300 to local sections who want to host a science cafe. I applied for a mini-grant in 2011 to host an International Year of Chemistry (IYC) Science Cafe titled "Protecting the Waters on Cape Cod". I was encouraged by another ACS local section member to plan an additional three science cafes that year using IYC themes with available funding directly from the local section. I've continued this successful Cape Cod Science Cafe program (more than 20 installments of the Cape Cod Science Cafe expanding the "interactive Cape Cod Science Cafe" at Boy Scout events and other STEM outreach events, like STEM Journey, a K-12 STEM education public outreach program we started on Cape Cod in 2014). Funding for these is from community and industry sponsors. As far as replication, right now my focus is on continuing the Cape Cod Science Cafe on the Cape & Islands and I am personally happy to

assist others with knowledge and expertise to start up their own science cafes. Tips on how to host a science cafe will be coming from the ACS Committee on Public Relations and Communications later this year. 2) I love working with my father. We share similar enough views on business management which has made the last 20+ years working together a wonderful experience. 3) The next challenge and goal as an entrepreneur and product manufacturer is remaining relevant in the industry.

How do you sell your equipment do you just cold call scientists all day or do you advertise your services somewhere?

[idontknowwhatimdooin](#)

We market our products by exhibiting at large industry trade shows like Pittcon (analytical lab market) and the American Industrial Hygiene Conference and Expo (industrial hygiene/environmental health and safety market). Additionally, we exhibit at local section meetings, like the American Industrial Hygiene Association and other similar professional societies. Advertising in trade journals & Facebook, sending out a monthly email newsletter, writing a company blog, using Linked-In, Twitter and attending industry networking events at ACS National Meetings and local section meetings are all part of our marketing plan.

How can I find a job with a Bachelors degree in biochemistry? Where should I even be looking?

[Neddy93](#)

I would suggest looking for a job in the lab in the biotech industry with a Bachelors degree in biochemistry. Kendall Square in Cambridge Massachusetts houses numerous biotech companies. North Carolina and Silicon Valley are also good geographic areas to seek such employment.

How do you deal with proper chemical disposal? Is it difficult? What are some things you've learned?

[Feldman742](#)

Proper chemical disposal is costly and needs to be managed effectively by a third party licensed hazmat professional. In order to keep the costs down, we have learned to order the smallest possible quantity of materials for our applications lab.

Hi, I'm 25 with a background in mech eng. What do you think about an MBA to give me an overview of how businesses really work and what it takes to found a company? How else can one acquire the aforementioned knowledge?

[prophecy0091](#)

Before enrolling in an MBA program, I would recommend taking some entrepreneurial classes at a local college. If you have the opportunity to work for a small business this would give you real world experience which proves beneficial when considering the leap to being self employed.

Hello Ms Maclachlan,

As a current grad student with an emphasis on physical organic chemistry (computational) , what have you seen as far as job prospects for both masters and PhD holders in industry? At this juncture in my

grad program I have the choice to stay with a masters (my university doesn't offer a PhD at this location) or pursue a PhD, however, I am uncertain of my upcoming choice.

I really really enjoy teaching university level classes but if industry is both paid better and enjoyable it might be another option.

Thank you for your response if you have the time, Mike

Edit: grammar corrections

[Mikeasaurus_Rex](#)

If you want to teach, pursue the PhD. If you are interested in working in industry, you have greater salary potential with a Masters degree. I would recommend networking with as many people both in education and industry. The ACS National Meetings are a great venue for networking with a wide variety of people employed in various areas of the chemical enterprise.

As a future Naval nuclear power plant operator, with similar interests in science/chemical research and development, what type of engineering major would you say is the most lucrative in your industry? I'll be able to use my GI bill to afford a bachelors degree, but to get a masters it would be coming out of pocket, what's my best value for a competitive edge in starting/working for a R&D company ?

[suhmyhumpdaydudes](#)

I would suggest Mechanical Engineering; offers the best fit for the type of work you are anticipating (Naval nuclear power plant engineer) and plays an integral role in industry R&D.

Hi Jennifer, thanks for doing this AMA.

I work in the oil and gas drilling industry and in some areas we have our field employees wear little H2S gas monitoring units. These units count down from 18 - 24 months (cat remember which) upon activation. Once the counter reaches zero, the unit is to be disposed and a new one used.

What component is expiring?

[bdrilling33](#)

It's the electrochemical cell that is expiring.

Hi Jennifer,

As a successful woman working in chemistry, could you perhaps shine some light on how you feel about women in STEM and chemistry in particular?

My wife has her Ph.D. in Physical Chem and has been searching since 2010 for industry work and has had zero offers. Some people have said it's because she finished her post-doc in 2008, some say it's because she's a woman in STEM. She's very frustrated as you might imagine.

What is your take on discrimination against women in STEM?

[Kraekus](#)

Is your wife currently a member of the American Chemical Society? If yes, ACS offers career counseling services: <https://www.acs.org/content/acs/en/careers/career-services/ccp.html>

I am fortunate in that I have not experienced any disadvantages of being a woman employed in a STEM career. I'd be happy to communicate with your wife about potential networking ideas that I have that she can take advantage of locally (like MeetUp) or at an ACS National/Regional Meeting. I can be contacted at <http://www.linkedin.com/in/jenniferlmaclachlan>

Given that there is quite a bit of competition, especially when it comes to creating something like a handheld PID, how did you manage to stay ahead of the curve? You mentioned that when you joined the family company, you lost a large client, and your patents began to expire - this only increases the amount of competition you would have, so how did your family company manage to stay afloat? are you doing better now? do you have more high profile customers?

[boxedblue](#)

We stayed afloat by exploring different markets rather than trying to solely compete in the saturated PID market. We acquired some businesses (a high precision gas blending balance manufacturer and an energy dispersive x-ray fluorescence manufacturer) while continuing our R&D efforts in the field portable instrumentation markets and focused on expansion into the process instrumentation space. What sets us apart from the competition is our ability to build customized solutions. Since we serve the chemical manufacturing industry, we have always had high profile customers.

When did your interest in science start?

[Karadra](#)

My interest in science came from my father. From a young age I enjoyed accompanying him to an annual science fiction convention in Boston (BOSKONE). I still enjoy attending BOSKONE with my father.

I've always wanted to be an inventor and have my own company.

What advice would you give for someone who already has a couple of ideas and wants to start a company but is still in grad school? I'm already involved with a startup but they don't yet have enough money for me to support myself working there.

[c0smic_Owl](#)

I would recommend starting to build your network, in-person (professional networking events) and online via Linked-In. Consider joining the ACS Division of Small Chemical Businesses. Additionally, ACS offers resources to entrepreneurs, like the Entrepreneurial Resource Center.

Thank you for making my life easier! Quick ? We will sniff a sharpie with our PID if we feel it may not be working. Is there any real risk to the device by this field hack?

[citizennsnipps](#)

Sharpie test is the best way to check for a PID response. No risk to the detector/sensor for this field hack.

Hi Jennifer. Thank you for doing this AMA. Your accomplishments in the company, in the ACS, and in

creating the Science Cafe sure make up an impressive resume.

I would like to know, did your father design the technology of handheld PIDs by himself? If so, does he have a background in both science and engineering?

As a biochemistry undergraduate, what are my career advancement opportunities before I have to get a Masters or PhD? Not a whole lot from what Ive been hearing.

Thanks again.

[vitaq](#)

My father is a physical chemist (with passion for R&D and engineering) and he partnered with a very talented mechanical engineer, Fred Spaziani, who was instrumental in the original PID design. My father currently leads our R&D and Engineering team.

I would recommend connecting up with these ACS Undergrad resources as you are contemplating your next steps: <https://www.acs.org/content/acs/en/education/students/college.html>

My mom retired on the cape and she's been pretty active on the science scene there. When does the science cafe meet there and where?

What is one lesson you learned while scaling up your business that you would give someone who is starting their own business?

(Also I'd love to volunteer when I'm up there!)

[sarahbotts](#)

I'd love to connect with you and your mom. Please connect with me on Linked-In <http://www.linkedin.com/in/jenniferlmaclachlan> Next Cape Cod Science Cafe is at STEM Journey at Sandwich STEM Academy on March 4, 2017. See <http://capecodsciencecafe.tumblr.com> for more information.

When scaling up a business, make sure that your personnel are cross-trained and able to handle multiple job functions-this is critical to survival at a small business and makes employee sick days/vacations seamless for your clients. Consider using contract employees until you are certain that you can afford to take them on permanently.

Hi Jennifer, Its great to speak with analytical chemists around the world, they understand the struggle, especially with analytical instruments.

I work at Argonne using instruments including the GC, GC-MS, and ICP-OES. My question is, what are the prospects for a young chemist starting a small business using handheld GC technology? How is QA/QC handled with such devices? They likely will never be as precise as benchtop GCs but I have a real interest in their portability and cost.

[DichloroMeth](#)

We manufacture a highly accurate hand-held PID-based GC (Model 121). We will have an FID version available later in 2017. Please contact me to discuss your application/pricing etc. <http://www.linkedin.com/in/jenniferlmaclachlan>

Hi Jennifer,

I have seen a lot of people complain about the amount of EPA and/or similar regulations are "killing business". Is this something that you see in your line of work? Is there any truth to these claims? Do you feel like there is too much regulation or not enough?

Thank you for taking time to answer my question.

[Gray party of 2](#)

Our ability to serve the safety/environmental monitoring/industrial hygiene sectors depends on EPA/OSHA regulations-businesses buy from us because they have to be compliant. Certainly more air monitoring regulations means more prospective business for us in these areas.

Thanks for the AMA Jennifer!

Any plans to roll the science cafe out to other communities? Any tips to someone starting a science cafe in their city?

[nicnacks](#)

Science cafe startup advice: Get as many community partners as you can to participate so they can help you cross promote the event, use free newspapers listings/cable tv/social media to get the word out about your event, find a free venue to keep your costs low and find an engaging topic (chemistry of beer, chemistry of wine were two of our best topics!) and knowledgeable speaker(s).

Have you ever had a climate change denier come into your science cafe and if so what happened when they were there?

[NOFXInfinite](#)

I hosted a Climate Science Cafe Series last June 2016 (3 events in 3 different locations-2 on Cape Cod and 1 in Boston) and there were some self-identified climate science deniers who attended, but the questions/contributions to the conversation were constructive/productive and fortunately not disruptive or disrespectful.

How does your product compare to the Draeger (in either function or capability)?

(I was a damage control officer in the 90s, so Draeger gas test kits are about the limit of my knowledge of gas detection)

[DonLaFontainesGhost](#)

In comparison to the Draeger, our HNU PID has a wider range, long lifetime lamps including the 11.7 lamp and a larger library of compounds that can be detected by PID.

What makes some food "hot" actually hot? (Hot as in hot sauce).

[PompiPompi](#)

Check out this video produced by the American Chemical Society Reactions team on Hot Sauce Science: <https://www.youtube.com/watch?v=U2DJN0gnul8>

Hi Jennifer! How can you tactfully prove climate change to someone who doesn't believe in climate change? The evidence is there, but now it seems that the denial goes all the way to the President. I want to be able to calmly and tactfully explain it, but usually I give up because people have found ways to write off all the evidence. Congratulations on your success! I love the idea of a Science Cafe!!!

[PM_ME_WITH_A_SMILE](#)

The ACS developed a Climate Science Toolkit: <https://www.acs.org/content/acs/en/climatescience.html> which you may find useful in crafting your position on Climate Science.

Hello,

I have been interested in materials science for a while, as I know there is a lot of chemistry involved. Where would you recommend I go to college, and what should I do post-college?

Thanks for your time, AMAs seem terribly tiring

[ParziCR](#)

If you are interested in Materials Science, have a look at the Materials Research Society. Most professional scientific societies, including the American Chemical Society, offer free webinars on various topics, take advantage of these free learning tools as you are deciding on college choice/majors.

What direction can you point a recent grad with a BA in chem (and a BS in business) towards a career? I'm finding it very difficult to find much and I'm routinely getting shut down on my applications without any industry experience.

Currently working at a bank as a financial analyst but I don't want to give up the chem route by staying away for too long...

[Wild_Dingleberries](#)

Are you currently a member of the American Chemical Society? If yes, I can make some recommendations for how to get more out of your membership including building your 'chemistry network'. If no, I would urge you to consider joining. Please connect with me if you wish to discuss further: <http://www.linkedin.com/in/jenniferlmaclachlan>

Could you describe your products a bit more for non chemists? Like the "hand-held photoionization dectector".

[RandomRobot](#)

My company, PID Analyzers manufactures hand-held toxic gas detectors that protect people who are working in potentially hazardous environments.