Science AMA Series: I am Joanne Kamens, Executive Director of nonprofit Addgene. I speak to 100’s of scientists each year about tackling problems in research. Women in science? Mentorship? Turning your PhD into a career (academic or not)? Ask me anything!

JOANNE_KAMENS R/SCIENCE

should a phd student still do a post doc after his phd in order to pursue non-academia career. I do not even know where to begin but i am tired of making no money

3ncryptednightmare

I think that if you are planning to leave academia you shouldn’t do a postdoc BUT many science trainees have not prepared enough in grad school for the transition. So you can use the postdoc as a time to launch your career. Do good science (read papers, learn new techniques, learn about experimental design, etc. you always have a to do good science) but have in mind 2-3 years to a job and spend the time actively doing all the things you need to do get there. http://blog.addgene.org/developing-transferable-skills-during-your-science-training

Also, watch these! http://www.ibiology.org/ibiomagazine/henry-bourne-problem-biomedical-education.html It is Henry Bourne talking about “the problem in biomedical education” and this http://www.ibiology.org/biomedical-workforce/shirley-tilghman-the-malthusian-dilemma-in-biomedical-research.html which is Shirley Tilghman really spelling it out.

It really strikes me that there’s this weird disparity for science PhDs where people sort into either no job / extremely under employed, or end up extremely lucky with dream jobs, and this seems to sort more by “who you know” and where you went to school than your pure research track record.

Can you comment on whether that seems to be borne out in your professional careers, or is it just the way it looks from this side of graduation?

thisdude415

It’s not who you know, but it is how many people you have met and what you have done aside from just bench work. It is not luck. It is effort to build opportunity over time. It is work to do this, no one hands you jobs in any field. Here’s the irony we train in academia with people who only know about
success in academia and then some 70% of those PhDs will be out of academia within 5 years. So yes, you must meet people and learn other stuff. Start here with tactics for meeting people, but keep learning good tactics for building relationships. [http://blog.addgene.org/how-to-make-friends-and-meet-people-at-a-scientific-conference](http://blog.addgene.org/how-to-make-friends-and-meet-people-at-a-scientific-conference) One tip—don’t see networking as meeting people and thinking “what can they do for me?”. I meet people and start by thinking “what can I do for them?” The webinar has a lot of other practical tips. I believe grad programs should have mandatory course work in in career readiness starting with year 1. Postdoc programs are training roles also, so career readiness must be a part of a postdoc program. If there are not going to be career resources and training, then we need to pay the postdocs a lot more! A lot. Some programs are establishing competent career offices and diverse opportunities, but some are not. In some cases the trainees themselves are creating their own opportunities. If you don’t have a Post-doc association or grad association…for heaven’s sakes, get one going. Problem two is getting the trainees to take advantage of these opportunities early and often. I don’t know how to do that…I go to speak in places with 1,000 post-docs and grad students and 30 will come to my talk on science careers. But look at what they have done at WashU’s Balsa Group…Grad students founded their own consulting company and they get real world experience while in school. There are many other cool models like this popping up.

It sounds like a lot of your career path was luck, which is probably true for most people. But I’m curious what advice you have for PhD students that are trying to map out their careers. In my field at least, professors say they are no longer able to make a few phone calls and hook us up with interviews & positions.

Academia is also much less reliable as a career path than it once was. Not only is the adjunct cycle a concern, but so is the academic hiring cycle. I’m a mother of a two year old (like you I had a kid in the middle of my program.) If I graduate in May and I’m lucky enough to get one of the very few postdoc or professor positions out there I still have to make ends meet over the summer. If I don’t, then I have to figure out what to do while I apply in the Fall, wait until Spring to find out if I even got an interview, and then best case scenario start that next Fall of 2018. Daycare is $100/day in my area so I can’t just stay home, write, and publish if I’m not employed. But it is hard to publish if you’re working full-time and a parent.

I feel torn between academia (which I love) and non-academia (which seems more practical and more immediate in giving me a salary.)

**What advice would you give to someone trying to pick between academic and non-academic jobs? What opportunities and resume/cv building pieces should we be looking for to make either of those paths viable?** How do you suggest parents (both men and women) balance that resume/cv building with being there for your kids?

firedrops

There are so many good questions in this question and I am not sure this format is up to the answers. I actually give a lot of talks on making the decision between academia and non-academia. I am going to have to resort to some links but will also give you some of the points from my presentation. Here is a talk you can watch on transitioning out of academia [http://videocast.nih.gov/summary.asp?Live=12169](http://videocast.nih.gov/summary.asp?Live=12169)

My first job was a bit of luck in choosing an advisor that had industry connections and could/would help me transition out of academia. After that not luck. I know/knew a lot of people and those relationships provided and continue to provide opportunities for my career and outside interests. More in other posts on this topic of relationships. More on this...start here but watch my YouTube video (link at bottom) [http://blog.addgene.org/how-to-make-friends-and-meet-people-at-a-scientific-conference](http://blog.addgene.org/how-to-make-friends-and-meet-people-at-a-scientific-conference) Remember, scientist is often something you are, not something you do. You have to find a way to keep doing it to be really happy. Academia is only one way. Millions of us are very happy doing it another way. I also
loved academia but have loved all the different things I have done. Scientist = lifelong learner. FYI-my talk on work/life negotiation is here http://bitesizebio.com/webinars/balancing-work-and-life-%E2%80%93-%E2%80%93negotiating-work-and-life-how-to-find-the-joy%E2%80%99d/ and in blog form here http://blog.addgene.org/negotiating-work-and-life-how-to-find-the-joy

Reasons to leave academia My strengths and interests don’t align with Academia (this was very true for me) Can get used to moving jobs every 4-5 years (everyone not tenured in academia moves jobs regularly these days) You are ready for more movement--projects end but good performers move around (new stuff is fun for scientists-I have loved all the new things I did) You prefer a more structured approach to your time management (this requires a long explanation, but while academia is flexible in some ways, outside academia the work day can be much more defined) Ready for collaboration and always working in a team Love science but not interested in bench work (or you are not good at it. in the short or long term) Want to be closer to the technology of treating patients & solving problems

Reasons to stay in Academia Would like to train and teach students (we need great mentors for the future!) Prefer a greater sense of autonomy and are a confirmed “individualist” Want to focus on science for science’s sake Love the intellectual atmosphere and “ferment” of academic angst Prefer your time to be more “unstructured” (like you are a 11 am to midnight kind of worker) Academic researchers must be extreme self-starters and good at self-promoting (No one is going to tell you to pick up the pace--this was not me, I like having other people help me set timelines and goals)

Hi Dr. Kamens. Thanks for taking the time to do an AMA. I have two questions:

1) How important do you believe your pedigree is in your success?

and 2) What do your parents do for a living?

Most of my colleagues come from wealthy backgrounds and I feel that this is a more significant barrier to entry into academics than gender--especially in my generation (your generation may be different). Because it takes ten years to get a real job after graduate school, only wealthy families can support their grad student children. Meanwhile, poor folk are forced to leave academics to earn a paycheck.

Also, the only people who are getting decent jobs come from Ivy League or top-tier schools. I am at a lower-tiered school, and over the last 6 years I don't know any grad student who has gotten a real job, even after one or more post-doc positions.

Thanks you.

mightybird

- Where you went to school can have an effect on opportunities of course, but having a lot of relationships with people can overcome this disparity. See my Not Networking 101 – Building relationships for success webinar. I have many excellent colleagues who went to all kinds of different universities and grad schools and I get to visit grad schools all over (not just Ivy League). I see scientists starting companies, getting jobs and embarking on interesting careers at all of them.

- I was not rich at all. My mother didn’t work and my father was a clergyman in the Midwest. They covered tuition and rent and I had to work (3 jobs) to cover the rest. I had no money in grad school beyond my stipend (once had to ask to borrow money for food from my parents. They made me sign a loan agreement also signed by my dog, Lady Misty of Woebegone. Seriously, they did bail me out). I got married and in grad school and had a baby there. I did go to highly regarded schools, but it was knowing the right people and about the diversity of opportunities that helped me get my jobs.
Hi. From your experience, how easy is it for women in the scientific fields to find jobs outside of academia? Would a graduate degree help more in finding these jobs? Thanks

mistymountainz

I think I am going to answer this in many of the other answers. A graduate degree brings you different places, not necessarily better places. Women and men who develop networks and start thinking about jobs early in their training find jobs outside academia.

I work in physics and astronomy. From what I have seen and the knowledge I have from our own women in science initiations, the number of women in physics is actually fairly strong at the undergraduate and postgraduate level, but falls off heavily around the time of the first or second postdoc appointment.

What is it about the postdoc level (and above) that is either putting women off continuing a career in academia or forcing women out of science?

Robo-Connery

Many people are studying the causes for the drastic drop-off. There seem to be many small things contributing including lack of role models, outright discrimination and sexual harassment, pay inequity, under-recognition, impossible work/life choices, and not least of all, toxic, unwelcoming environments.

A good place to start is this resources page on the AWIS (Association for Women in Science) website.

http://www.awis.org/?Research

Women in STEM are facing many of the same issues woman face to advancement and career success in any field. Here’s a report that hits the “lowlights”

https://womenintheworkplace.com/

Regarding harassment, don’t get me started on that. We have to stop the silence. Toxic mentors are forcing women out of science at the grad and postdoc levels. These people should not receive funding or be allowed to manage people, but we can only make that happen if we find a way for women to feel safe reporting. Last year I have a talk for ~12 women from an AWIS chapter on this topic. In the anonymous post-event survey 6 women said they had been sexually harassed, had not told anyone and didn’t know what to do. That is 50% of the women! This problem runs deep.

Hi Dr. Kamens, As a grad student surrounded by academics who frequently turn their noses up at “alternative careers”, it’s refreshing to hear the story of a successful woman who has found a meaningful way to put her degree to use outside of the lab. Thank you for sharing your experience with us!

I'm a 4th year neuroscience PhD student and while I enjoy the research I conduct, my passion lies in speaking about science to others, getting others excited and engaged with my research, and mentoring students in the lab. How on Earth do I translate this passion into an actual career that isn’t a lecture position in a university?

everythursday

First, these days academia is the alternate. The data show that 65-70% of PhDs will be outside the academy 5 yrs after they get their degree. Sounds like you might like a career in science communication. This is a burgeoning field. The best way to learn more is to find 5 people doing something in this area and take them for coffee or set up a time to skype and ask them how they got there. You may find that this makes you even more passionate about science!
Also, your career is a long and winding road (cue music). I've been a bench scientist in pharma to a group leader in pharma to a manager in research to a start-up, a business development person and now running a unique nonprofit. I had many diverse work and volunteer roles along the way (too many to list). What they all had in common is that I had to learn a lot of new stuff for each one which is the fun part for me (scientists = lifelong learners). Don't be afraid to do something "unusual" as that is often where the fun challenges are.

You mention "a series of lucky connections" in your bio. I've heard many stories from those who've made successful careers out of STEM backgrounds about unexpected opportunities and happy unplanned career diversions. The problem with any given person's lucky connections, though, is that they aren't replicatable for those of us still struggling to break into a career.

As a general strategy, do you recommend

1) Trying to do as many diverse things as possible in order to create fertile ground for these unexpected opportunities, or

2) Focusing on a single goal and developing competitive skills in a narrow area (while of course still being open to lucky connections)?

I've tried both, I can't do both at once, and I can't figure out which to concentrate on as a personal post-PhD career plan. Thanks!

jjcollier

What is replicatable is being open to opportunities and seeking information on diverse paths all the time. However, I think you can also get really deep in one area and that can turn into something. Actually, here's an anecdote. When I got laid off from my biotech (normal biotech downsizing--happens to many). I had a very specific job in mind to look for: Alliance management at a mid-size biotech in Cambridge, MA funded by one of my favorite Venture firms. It was a short list. I wangled my way to the perfect interview, but the job from Addgene came out of left field and has been a dream opportunity. You never know, but you have to be in the path of the opportunities. The job at Addgene was never advertised, people in my network connected me to it.

Hi Joanne

You said that when you started in Abbot you never met another woman. Here in Europe biology/genetics/biotechnology are overwhelmingly female, even in the older generations, let alone the new ones. Why where there so few women there? Is it a problem specific with the US? Or with private companies?

Also, you make a very long list of company changes in your life. Which presumably were associated with changes in the city you live in. Do you think that it's a good thing for a researcher to need to constantly relocate? I believe that it's something very wrong with the academia, as it impacts a lot personal life

lucaxx85

I spent a week in meetings with no women and that was true. In university and grad school there were a slight majority of women in my biology programs so I was suddenly wondering where they all went? Starting with postdoc and moving onto the career ladder, women "leak" out of this (and many other) career track. This is still true. Other answers will address the why but it is a combination of many small things making it hard for women to succeed.
You must be in a lucky place to have great female colleagues! I have worked with many women biologists in different parts of Europe and as far as I know, none of them actually work with a majority of women. Senior leaders in science are a majority of men both in academia and non-academia. This is not specific to the US at all. For example, here is the EMBO Women in Science page [http://www.embo.org/science-policy/women-in-science](http://www.embo.org/science-policy/women-in-science) “Just as many women as men start out on life science careers. But many more men go on to senior academic positions. The reasons why are complex. In the interest of science it is important that the best scientists have the opportunity to pursue a career, and that it is not gender (or any other secondary characteristic) that determines the chances of success. At EMBO, we are committed to monitoring gender balance in all our activities, developing initiatives to counteract imbalances and to raising awareness of issues facing women scientists as their careers advance.” Here’s a report from the European Commission from 2012 (but there hasn’t been much improvement) [http://ec.europa.eu/research/science-society/document_library/pdf_06/she-figures-2012_en.pdf](http://ec.europa.eu/research/science-society/document_library/pdf_06/she-figures-2012_en.pdf)

On to your question about geography. I actually went to grad school in Boston and have stayed here my whole life after that. All of my jobs have been in this area, but this is an area rich in diverse opportunities. One reason my husband and I chose to live here is so we could both have robust careers (a very important decision to make together if you have a life partner). That way if one of us has to get a new job, there are lots of things so we don’t have to move. It is one of the many good reasons to choose a nonacademic career. Once you are on a tenure track role, you can’t really move around or if you don’t get tenure you really have to move around and that can be really tough. But outside academia there are a million different things a scientist can do so that flexibility can be really important. Here’s an excellent blog by the amazing Thesis Whisperer on this topic that you might like [https://thesiswhisperer.com/2016/09/21/one-of-them-good-problems/](https://thesiswhisperer.com/2016/09/21/one-of-them-good-problems/)

Dear Joanne,

I often hear that Chemistry PhD graduates have a lot of difficulty finding jobs. As a 2nd-year graduate student, I was wondering 1) what I can do now to increase my chances of finding work in industry upon graduation? 2) How can I apply my PhD towards working in other fields (including non-science) that could make a considerable amount of money?

ohowdydur

I am not a chemist so you should find some to talk to (maybe alumni database? People who used to be in your lab?). Start looking at diverse careers now, meet lots of people and get involved in some volunteering that will help you build relationships in the science community. I’m not sure what a “considerable amount of money” is. I work at a nonprofit so that was not the career path I went for…but you can surely find some people who did!

Hi Joanne, thanks for doing this AMA! Your career path is interesting and took a lot of turns along the way. While in graduate school, how were you preparing for post-graduate life? Were you planning on going into academia or did you always have a desire to begin your career in the pharmaceutical industry? As a young PhD student, I’m curious as to how one approaches possible career opportunities during their time as a graduate student.

moongrey

Good question. I know a lot more now, and I try to make sure that all students seek the opportunities I had. I don’t always understand this mentality that drives students to only consider academic careers at the guidance of their advisors. I almost never considered an academic career…I am not suited for it and would not have been happy and probably not successful. I had one big advantage, my advisor was
on the science board of one of the first biotechs, Genetics Institute, and often talked to us about this and his work there. He also had many non-academic contacts (remember it was early days in biotech, there weren't as many companies) and shared these with me. So start exploring early and often!

The internet is a vast and excellent resource. Start with the career blogs on blog.addgene.org and follow links. You are a scientist, you know how to do research. Your next assignment: research for 10 new diverse careers. Look in your alumni database and find scientists doing those things and contact them for an informational interview. [http://blog.addgene.org/scientist-networking-what-is-an-informational-interview](http://blog.addgene.org/scientist-networking-what-is-an-informational-interview)

Recent synthetic organic chemistry PhD grad here so maybe a little different. Really want to get out of the lab for a while and possibly move towards the business end of things (not interested in academia).

You have managed to move through both "science" and "business" positions in your career as opposed to sticking to one track and this sounds like it was a natural progression for you in your ambitions, but looking back, if you were in my position would you say it would've been better to try and transition to the business side earlier or build-up the scientific experience before attempting the transition?

922WhatDoI\[a\]Do

Everyone's path is different. My resume after grad school said "bench scientist" so moving to that type of role first was easier. But once I got there I took every opportunity to learn the business of pharma. If you hate bench work, or are bad at it there are many ways to go closer to business faster like consulting etc.

I know you probably get this all the time but for a person with a masters in bioinformatics, what types of job ceilings and opportunities will I encounter? Right now I'm a Bioinformatica Analyst at a prestigious biotech-style research facility but I just got my degree a few months ago. Will I ever be able to move up to Staff Scientist? or am I marooned at Bioinformatics Analyst without the PhD?

o-rka

While I was in Pharma I did know first hand of masters level scientists moving up into senior scientist roles. In fact, one woman in my group did this very successfully. I think it helps to have a boss who will advocate and mentor you so look for that! Learn a lot, raise your hand, take initiative and be responsible for stuff. That is how people get promoted. That being said, bioinformaticists are in demand and if you get stuck, look elsewhere.

What do you think about the problem, that many medical journals (or any other scientific journal) almost never publish (in most journals it's around 20%) negativ results or replication studies? It's a huge issue, because some researcher finds an interesting effect, others fail to replicate it, but people never hear about the negative result. Do you have an Idea how to solve this problem?

Többi

Addgene is very invested in helping with reproducibility and replication. That is one thing repositories can really help with. We agree it is a huge issue but some of the new open publishing platforms are starting to create space for these types of studies. It will take time, but I think the tide is turning.
Funding. Is Academia really a sustainable career option or do you expect mass layoffs coming very soon? I'm currently in a lab that is on its last leg. When I first started we had 9 people, and now it is just down to me, we have 0 new grants, and the one we currently have runs out in March 2017. We've literally submitted over a dozen grants with no luck. It's not like my boss is a bad scientist either; we have produced good papers before, although we can no longer publish a lot of papers because I simply can't continue to do an amount of work for 5 people. Thus we're caught in a death spiral where you can no longer publish because you don't have the hands available, and you don't have the hands available because you don't have the funding. It just seems like the whole game is rigged against you--the NIH will help you start a lab and routinely give new PIs or PIs who have never received an R01 a R01, but once you get into you're mid-career you're screwed unless you are a superstar lab with 30 people. The NIH cuts your funding off just as you're reaching the prime of career and after your lab has been setup. Kind of disheartening to pour your life into science only to have it destroy your soul in return. My PI has probably aged 10 years in the span of 3 years; and I'm extremely stressed out having to grind out inordinate amounts of experiments for moonshot grants. I just don't see how this ends; it seems like academia is a ponzi scheme waiting to implode as soon as things start to go sour or your lab hits a rough patch. This is at a top 3 institution BTW, not a small college with non-famous professors. Multiple Nobel winners here.

xSialicAcidx

I think academia will restructure but I can see that it is an uneasy feeling. I hope we don't lose all the great potential academic mentors to the current funding woes.

Hello Dr. Kamens, this might be more of a rant. How do we change this awful situation in science, where we need to output as many papers as possible in order possibly get grants to output more papers?

looks_at_lines

yes...there is something wrong with this system. But remember, in academia the product is knowledge and you demonstrate that with papers so not so crazy. Read about the work of the Future of Research or Science Open. They would like to drive change.

Hi Dr. Kamens,

How would you advise lazier students to get ready to be successful at grad school. If I take a year off at undergrad, how do I best prepare my disciplinary skills for the PhD workload?

Ha_window

Don't be lazy or don't go to grad school. That was an easy one.

Hi Joanne,

I'm wondering about the drop in the number of women from PhD > Postdoc > Faculty. As a male who is married I don't want to pursue postdocs because I feel it would be disruptive to starting a family and to my wife's career (since I would have to work so much and move multiple times in a few years).

Do you happen to know whether women are more likely than man to not pursue a postdoc for the same reason? (Maybe are more women PhD's married?)

lasserith
Actually, more women have husbands who work. More men have wives who stay home so that is where the women dropping out more starts to come in to play. It is hard to have both partners postdoc at the same time (partly because of finances and child care). It can be done. I have seen many creative ways to make it through. I think fewer scientists should do postdocs. I had a baby, my husband was a grad student and we had no money. I had to go to industry to keep working (to make enough money for day care). I did this with no regrets.

Thank you for taking this time to speak with us. I would love to hear your thoughts on having babies in grad school and your early career. Anything you would do differently? Anything you did that you think helped? Any tips for those trying to plan?

ohbyabbyjoy

Grad school was a good time because my advisor was 100% supportive. But my belief is that it is always a good time. I had a kid in my early days at pharma. Between my technicians and me, one year we had 4 children (one had twins). We made sure to cross train on everything and we covered for each other so no one noticed our leaves. It was masterful. Find and choose workplaces with flexibility and great parental leave policy. Addgene has 9 weeks paid leave for birth parent and non-birth parent, for example. Children are a blessing and we want our most educated citizens to procreate! Unfortunately, we are discouraging them at every turn. So please, have children. Find mentors who will support you. Share your life with a partner who is 100% supportive and sharing all tasks (not “helping” grrr we hated it when people would ask my husband if he was “helping” or “babysitting” our kids. He does not help, we share equally the responsibility. He does not babysit, these are his children). You must agree as a couple that BOTH of your careers are important and that you will work together so that both of you can succeed. This may mean you take turns stepping in and stepping back but it can work. Note that work/life negotiation is not only about kids! It is about health, and relationships, and other passions and geography and time and energy etc etc. It affects everyone. http://blog.addgene.org/negotiating-work-and-life-how-to-find-the-joy

Hi Joanne,

The other day we published a column by a graduate researcher at Central Michigan University. In the article, she discussed overcoming the lone wolf, competitive mentality fostered by the research field to mentor and give back.

What do you think that academic institutions can do better in facilitating not just this process, but the desire to do so in the first place?

adenovato

I’m so glad you asked this. First, there are some really great mentors/advisors out there. A very wise scientists (Ben Barres) once told me that scientists should “vote with their feet”. They should only work for great mentors (especially for the money they are making, the mentor and training is the thing!!). So first, please! choose great mentors http://blog.addgene.org/choosing-a-good-mentor-for-scientists

Next, I think universities need to start rewarding lab heads for excellent mentorship. More money, space, less admin responsibilities, awards and trophies…etc. It should be as important as publications. NIH grants now require reporting on career discussions taking place with trainees. Most lab heads probably do a pro-forma discussion (or just fib about it on the applications). Let’s make this real with some required reporting from the trainees. They will still be afraid to say much, but perhaps with aggregate data at the research institution having an influence on granting, good metrics will eventually be required.
By the way, the postdocs involved in the Future of Research Symposia [http://futureofresearch.org/](http://futureofresearch.org/) are trying to make large changes in the way science is done. Get involved!

You mentioned that you got married in graduate school to a rocket scientist. After graduation, what was your approach to solving the two-body problem in terms of job placement? Were you both equally career-oriented or did one of you compromise more than the other?

As a soon-to-be graduate myself, I have some offers for employment, but not in locations that are amenable to my husband. Is there a strategy that you can suggest where we both end up getting the careers that we envision?

Thanks!

jennifex

It is absolutely crucial that you verbally commit to one another that both of your careers are important. Starting from there, one of you may need to take a slow down, then the other but not both and not only one of you. In this way you can ladder up both of your careers. We happen to be in an area that both of us can work and find new jobs when we have to switch. We are both equally career oriented. If anyone compromised it was my husband since we were never able to really live in the Washington DC area which would be good for him.

Hello, and thank you for doing the AMA.

I have one question for you, what is your advice on "selling" the skills you earned while working on your Ph.D. if you attempt to work outside of academia?

For example, while my Ph.D. is in astrophysics, 99% of my work was programming and data analysis.

 bearerofbearn news

It isn't usually about "selling". I often find it is more about scientists underselling themselves. You are highly trained! Here is one place to start learning about the "transferable" skills you have gained. [http://blog.addgene.org/developing-transferable-skills-during-your-science-training](http://blog.addgene.org/developing-transferable-skills-during-your-science-training)


Also, some jobs really need programming and data analysis. As a scientist you have learned how to learn. Your skills can be applied in many ways. So my advice is know your value. Write down your value proposition. Keep a notebook/online file of stories that describe your accomplishments and way of working. This can develop into a great set of interview pitches.

Hi Dr Kamens, I studied molecular biology in my undergrad and now,a few years later desperately want to go back to school for further education. Do you have any advice for a mature student trying to reenter the scene 5+ years after graduating?

I loved genetics and wanted to enter genetic counseling, although it's competitive and so far I've not been accepted (Canada has only 20 positions open). Do you have any sources or recommendations of other programs in similar and emerging fields?

Thank you for doing this AMA.
I don't know anything about this specific career path so I can't be much help. Can you find some people who did it and get their advice? Most people like to help. I think mature students are better at some things so use the advantage of experience in life to offset the challenges. Good luck!

Personally, I try to discourage everyone from ever pursuing a PhD in the current situation. I left academia for many reasons but mostly for lack of job security, the stupid publishing metrics, the competition for very scarce grants, and the stupid rules in general.

Q: Do you see anything changing in the near future that would improve the way science is managed?

There is no real job security except having a big enough network when you need to find the next thing. I never wrote a grant and didn't mind the rules I had to follow in all the different settings I have worked. I hear you, but it isn't the same experience for everyone. I loved getting my degree. Scientist is something I am, not something I do. That being said, I am sciencing but not in academia...it is certainly not for everyone (see above)

I'm in my final year of a Master's program for Psychological Research. I honestly have no idea what the job market is like for a Master's-only research degree. What can I expect in 7 months when I finish?

Since I never did that type of job search, I can't really say. But I suggest you find 10 people who have a master's in your field and take them for coffee. Find out what they did and how they got where they are. http://blog.addgene.org/scientist-networking-what-is-an-informational-interview

What advice would you give to a woman in your field looking to transition away from academia?

Some background: I'm a woman in my first post doc in biochemistry and am beginning to realize that academia isn't for me. I was a high-flyer who impressed during my PhD but now I'm doing the bare minimum to get by as I just have no drive anymore. I was so set on being an academic up until a year or so ago, and I've been trying to force myself to carry on despite feeling like a square peg in a round hole. I feel lost, like I'd be letting people down if I leave and I fear the competitive nature of the job market. I have no idea where to begin.

Please see the answers to other questions in this thread! I have posted many links to places to start but this is your career and you are probably a list–building scientist like I am. So make goals and find someone to help you keep them. I will meet X new people this month. I will join AWIS and get active. I will do 10 informational interviews with alums to learn about their career paths etc etc. Peer Mentoring groups are a great way to kick start.

Howdy Joanne,
My wife doesn't use reddit, but this seems quite applicable to her. She had a rough go of it with advisors through her PhD candidacy, eventually switching twice and getting her PhD in cancer biology @ UT-Houston (MD Anderson). However, she really had to fight alone for the majority of her time in the program because her advisor would either be out of town, out of the office, or generally an unhelpful/arrogant/mean person. Fortunately, she had a good committee and used them quite a bit for guidance.

That said, she still wasn't fortunate with her advisor. He didn't really help her begin her career or even point her in the right direction. As a result, after a post-doc in a largely uninteresting research area, she's at a crossroads.

So my question is: what is the best way for her to go about finding the right career to put her PhD to good use, since her advisors were basically useless in this regard?

depressiown

I think many of the other answers to these questions should help answer this. Sadly, scientists find out too late how important it is to choose a good mentor (and not necessarily choose a lab because of the research topic). But there is hope. If she can get out (and sounds like her committee helped her) she needs to seek advice elsewhere and meet people. Start with my networking video and go from there.

http://www.youtube.com/watch?v=nxS16KicDs4

Hi Dr. Kamens!

I'm a recent college graduate who is looking to apply for a PhD in neuroscience in the near future. The problem is that my family remains fundamentally opposed to this, believing that it is a waste of time and money, time that I can spend looking for a husband and settling down with a stable job. I've already put off applying for grad schools because my parents stopped talking to me entirely as soon as I brought up the topic.

What can I do to convince them otherwise and to accept my decision? And are there things that I should keep in mind going towards this career track?

freevantage

Ouch. It is so hard when the ones we love, our support system, don’t support our passion. I think I said above…for many people science is something you are, not just something you do. Here’s me at 8

https://drive.google.com/file/d/0B3YKC9iQ4IhvYVNTiRVzXzVpV1U/view?usp=sharing

First I would say “find your people” - other women who are going through what you are. Second, find a mentor that will be a cheerleader- Maybe a teacher or role model that can support you. Grad school has stipends. Choose one in an area that isn’t too expensive to live in and go for it. And while you are in grad school do a lot of career exploration so you land somewhere where you can support yourself. Hang in there. I am with you.

Thanks for AMA-ing with us and for all that you're doing to advance women in STEM! I'm especially thankful as a father that's hopeful of a future where his daughter can thrive in STEM fields. I have 2 questions (can you tell I'm in fundraising?):

Given the decrease in government funding for basic research and the advent of organizations like Benefunder, Bill and Melinda Gates Foundation, etc., what do you think the future of private / nongovernmental funding for basic research will look like?

Fundraising seems to be misunderstood to be only about asking people for money, not building
relationships or connecting interests. Do you think people with PhDs would have interest in fundraising careers, tackling one of the biggest obstacles to research? What do you feel would make them "warm up" to the idea of fundraising, at least as part of their STEM career?

Thanks!

 journiche

I would love to see more rich people give money to basic research. See the new Chan/Zuckerberg project to transform research. We need money, they have it and they put some great scientists in charge of something like 3 billion dollars.

I do a lot of fundraising but I had to learn it as I went along. You are right..it is about relationships, but you still need to get bold about asking for the money.

Hi Joanne!

I've always wanted to be a clinical neuropsychologist that runs a centre/company based off the subject, however I'm 22 and have delayed my undergrad by pursuing startups in clinical psychology- one of them is gaining traction fast!

I intend to gain work experience with startups before I enter University, in hopes of creating Neuropsych tech startups in the future. I was told that once I finish my undergrad, I can't do startups, or I'll forgo a lot of chances at getting into a clin. psych masters/dotorate as academia will consider me "rusty" (It's really hard to apply for clin psych grad school).

Following this logic, I decided to pursue startup work experience first.

Is this plan viable?

Thank you!

BlackRosette

Sometimes you can't plan. Careers can be very winding. If the opportunity seems good, take it. It will open different doors, not no doors.

I have a B.S. in Physical and Mathematical Sciences (It's basically physics and some earth/space science). My M.A. is in adolescent education. I am teaching high school science.

Is there a career for me outside of education without further schooling?

monkeydave

As I usually do, I suggest you find scientists who have your degrees in your alumni database and see what they are doing. You never know what might be fun and what you can do. Each position will take you somewhere new and the path can be winding. Mine was pretty winding.

Hi, I'm an undergrad student applying to a research program that gives us an opportunity to work with researching professors and grad students. Is there anything I need to do or be aware of as the research process and/or plagiarism is concerned? Preferably how not to be taken advantage of (i.e. how not to get plagiarized).
I haven't been in the publication rat race for many years, but you should probably learn about preprints and post-publication review processes. The way you publish can protect your ideas. Post publication review blog [http://blog.scienceopen.com/2016/09/disambiguating-post-publication-peer-review/](http://blog.scienceopen.com/2016/09/disambiguating-post-publication-peer-review/)

I saw you mention mentorship, how does one find a mentor in a field of study? I know no one personally in my field (I am working towards a bachelors of Mech Engineering in the States) but would love to meet people and work (even for free) on projects to gain experience and knowledge.

-o0-

Mentoring is one of my favorite areas to talk about. While the word “Mentor” seems sort of serious and loaded it is really important for science trainees to have multiple advisors and people to learn from. I call it my “posse”. I can’t possibly write all my ideas and love for solid mentoring practices here so please take a look at my mentoring blog series (also downloadable as the whole series in a free pdf Ebook). Start here [http://blog.addgene.org/what-makes-a-good-mentor-and-6-more-faqs-about-science-mentoring](http://blog.addgene.org/what-makes-a-good-mentor-and-6-more-faqs-about-science-mentoring)

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-o0-


There are also a couple of mentor matching sites for STEM [https://nrmnet.net/mynrmn/](https://nrmnet.net/mynrmn/)

http://mentornet.net/

Hi Joanne, thank you for hosting the AMA. Here are some of my questions:

Q1. Between the industry and the academia, which would provide a better experience to someone who just completed PhD, especially in terms of personal development and family building?

Q2. What is your take on the Tim Hunt incident? How do you think the scientific community can prevent such witchhunts in the future while pursuing empowerment for women in science?

Q3. Would Addgene move beyond plasmids in the future? If yes, what particulars areas would you be looking at?

Q4. What are some interesting behind-the-scenes facts about Addgene that makes our purchases so cheap and fast?

-o0-

netwizzz

1- See my other posts in this Reddit. You can make either work. I usually voice it as academia and non-academia since there are a million things you can do with a PhD. Do some introspection and get a handle on your strengths…where do you think you can do well and be happy?

3- Yes! Check out our Addgene’s new viral services page. WE are very excited about this quiet launch and we are about to go big with publicity. [https://www.addgene.org/viral-service/]

4- We have the best Addgenies in the world. As a nonprofit, our team works hard, believes in the mission and everything we do is focused on making a better experience for scientists and to accelerate science. We get to make decisions to make sure that is our number 1 priority. Your good view of Addgene is what keeps us going every day.

Thanks for doing this AMA. Do you ever feel like preaching to the choir when you are giving career talks? The people I see at these event are people who are already planning to leave the bench and have started looking for alternatives. People who don't attend are either postdocs who believe that they have a chance of become a PI and PIs themselves (many of them not willing to support people who are planning to leave).

On a different matter: I love Addgene but could you please look into your search engine? I had several cases where the construct would not show up when searching for it directly but when I looked up the PI I saw the construct. Didn't make sense to me.

Schlitzi

It is sometimes true that the people that come are the ones who need it the least However, all of us working on this try to get the word out in any way we can. There are usually 1-2 people who come up to me and tell me that I changed the way they think. This is very rewarding. I try to speak to scientists at earlier and earlier career stages. Once I was surprised to see that the entire undergraduate science major group at a state university I visited in the Midwest was required to attend my talk on careers. They even had quiz questions after and it was for credit! It was imposing but I was delighted.

Thanks so much for your Addgene feedback. We are actively working on our search engine and it is a project we hope to do more with next year. We know about these glitches. We do a lot of curation and organization of the information on our educational resources to help scientists find what they need. And you can always call or email us at help(a)addgene.org . We have a bunch of PhD scientists who do our technical service. They are plasmid experts and can help you find what you are looking for. Tech service is one of those career paths that scientists don't always think about and our scientist team is awesome and loves their work helping other scientists.

From all of the negativity towards academia, is academia even worth going into anymore? Or is this negativity overblown?

Stewartw642

For some it is overblown but for those who have a toxic advisor or are sexually harrassed or bullied, it is not overblown. The culture needs a lot of work, but the intellectual ferment is worth it for most of us.

There are a lot of discussions about women in academia and whether the disparity in tenured professors is improving. In other words, is the reason that there is such a disparity between women with PhDs being high and women with tenure being low simply due to a slow changing system but will fix itself once this generation replaces the existing one? If we're on the right track, what role have programs like yours played in reducing disparities? What would happen if such programs ended? If we're not on the right track, what can we do to improve?

Out of interest (and procrastination) I pulled some numbers from the IPEDS data center to see if there
was improvement from 2012 to 2014 (they only have 3 yrs of data.) Here is what I found for anyone who is curious.

<table>
<thead>
<tr>
<th>Foo</th>
<th>Men</th>
<th>Women</th>
<th>Gap (for women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Tenured</td>
<td>152,553</td>
<td>88,496</td>
<td>64,057</td>
</tr>
<tr>
<td>2014 Tenured</td>
<td>160,304</td>
<td>97,239</td>
<td>63,065</td>
</tr>
<tr>
<td>2012 Tenure Track</td>
<td>49,530</td>
<td>46,055</td>
<td>3,475</td>
</tr>
<tr>
<td>2014 Tenure Track</td>
<td>50,832</td>
<td>48,310</td>
<td>2,522</td>
</tr>
<tr>
<td>2012 Non-Tenure Track Faculty</td>
<td>54,578</td>
<td>59,944</td>
<td>-5,366</td>
</tr>
<tr>
<td>2014 Non-Tenure Track Faculty</td>
<td>65,486</td>
<td>72,633</td>
<td>-7,147</td>
</tr>
</tbody>
</table>

A rough look at this suggests that the gap for tenure is slightly improving, though there is obviously a ways to go. Tenure track is improving quicker than tenured. Some do get stuck perpetually in tenure track and never making it to tenure or taking longer to do so than colleagues.

But the gender gap between those and non-tenure track is widening. Adjuncting, which has no benefits, no job security beyond a semester, and is low paying, is the least desirable of all of these. I'm sure people on this sub are aware of the problems related to *adjuncting*. Is there something we can also do to attend to the adjuncting crisis (as many media outlets have called it) in relation to this gender gap? Why are more women adjuncts and how can we discourage this worrying trend?

firedrops

The whole adjunct thing is terrible for anyone in an underrepresented group. All the small things that contribute to inequity land women and other minorities in these positions. Universities need to do a lot of work on diversity and have the longest way to go in my opinion. Maybe that is partially why I am not in academia.

[removed]

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Look up the Scientistas and become a chapter!

Find all the women scientists you can in different fields and invite them for coffee chats

Practice public speaking for each other

I'm a young professor in STEM and looking at my classes- I see remarkable diversity of all kinds. Looking at my peers I see a little diversity (few women, fewer minority students). When I look above me at the full professors, I find almost exclusively Caucasian men. What can I do to encourage and inspire my students and my peers to follow their dreams and push themselves into the highest levels of whatever career they choose?

p1percub

This is so sad for me. I am on the board of or working with a number of organizations that try to intervene very early (like young girls in the US, Nigeria and Ghana). I love being at events and/or seeing the diversity that is possible! I think that helping these students find many mentors (you can't do it all alone) is one way to help. Good mentoring has been shown to make a difference in increasing success for underrepresented groups. Please see my Addgene blogs for more on tactics and best practices for finding and working with mentors.
Joanne,

Women being underrepresented in STEM fields seems to be a hot topic these days. What's your opinion on this? Is it true? Is there really as big of a disparity as people make it out to be? If so, what do you think is the reason for this? Just curious about what the situation really is, because the media often distorts things.

lennyrego

It is a huge problem. See some of my other answers for links to some of the data. It is a problem in every field. Not just STEM. It isn't the media...thank goodness people are finally talking about the business case for diversity. Also it is just the right thing.

Hello Dr. Kamens!

First of all congratulations on such an amazing career, that's something few of us are able to achieve nowadays.

I have a few really simple questions for you. Just so you can answer them better, I'll briefly introduce myself: I'm brazilian, lived here for my entire life. I'll be 29 in November and have a degree in Advertising. I'm currently a working graphic designer, but I despise the job, the industry and feel like my education was for nothing. I have had a lifelong interest in science and technology and an opportunity has come up for me to pursue another degree abroad, in Germany - but I want to pursue a career in research. More specifically, I'm interested in brain-computer interfaces, so I might go for Computer Engineering or Computer Science.

My questions are: do you think my age will be an issue? What advice would you give me since I'm going for such a radical shift in my career? How hard is it to have a stable job and income as a researcher? Do you have any advice concerning where to go in Germany so I can be successful?

I'm not aiming for the Nobel Prize or anything, I just want to spend my days doing something I find interesting and worthwhile, and have a decent income/quality of life while I'm at it. Science research is not valued at all I'm Brazil, and jobs don't pay much, hence the country change.

Furthermore, I'd like to thank you very much for your time for reading through our questions and answering them. I have the highest respect for scientists in general, you're the ones moving our world forward despite adversities in politics and world affairs. I hope you can make some time to answer my questions. If not, it was worth a shot. Thank you one again! Sorry for the long rant.

jlfgomes

That is a lot of questions and some I don't know about since I am a biologist.
Age - you are young..speaking as someone who was recognized as a 40 over 40 woman making an impact..stick with it.
Stability - all jobs are fluid and can disappear. Meet lots of people and be open to unusual opportunities and you can make a living probably.

To your knowledge, which field really needs new blood? Or which one is hurting number wise?

professional novice

There are so many different things one can do that it is hard to say this. I would say in the area of
industry science (drug discovery, just one small area of non-academic science careers) bioinformatics, scientist coding, and big data handling are in need of new and more talent! I’d like to see more scientists in policy and government. We really have to stop the climate change denial and other non-science oriented movements with more scientists in more places. I am sure there are better studies online with which fields have more jobs.

Do you have any positions open at Addgene? I'm a recent graduate in Biomedical Science and I'm looking to break into the biotech field in the Cambridge area.

Faded_Sun

Follow Addgene on Linked In or check our careers page periodically. Positions open sometimes but we are a small company so make sure you look elsewhere too!

My girlfriend has been bullied and abused during her Post Doc. She almost had her publication stolen from her. This has hurt her self confidence so much that she has been steered away from science all together even though I know she has a deep love for science. All she wants to do is make the world a safer place.

My question is how can I help her gain her confidence after being bullied in a male dominated field? Is there anywhere she can go? She is also having difficulty moving forward after her post doc. On top of that she is having a very difficult time finding a female role model in her field. She also doesn't see a possibility for work/life balance after the way she has been treated.

kamikaziboarder

I am sorry I didn't have time to reply to this last night...I hope you see the reply. This is the saddest thing to me. The first thing she should know is that she is not alone. This happens to many scientists especially women for obvious reasons. Please have her seek peers with whom she can get back to her confident self. I don't know where you live but is there a local chapter of AWIS? Or other women in science groups? If she would like to reach out via Linked In I would be happy to talk with her and make some meaningful connections to help her move on.

I am a 24 year old woman, about to begin schooling for a Natural Sciences Associate's degree this January. I am trying to pursue an education path that would eventually allow me to be on space/interplanetary research teams (like studying other planets' ecosystems, searching for signs of life, and possibly even join missions like SpaceX for some field work). I know so far that all that would fall into the astrobiology field; but I have no idea about what else to do. Are there subjects I can start taking right away to expedite things? Internships? Grants? Obviously I'm doing research on those things myself as well, but I just feel a bit lost and overwhelmed (although really motivated), and would really appreciate to hear any advice an established scientist like you might have. Thank you so much for your time!

12345vzp

You need to find 10 people (I know I always say 10 but scientists like round numbers and check lists) who have done this and ask them how they got there. I didn't do it so I can't help.

http://blog.addgene.org/scientist-networking-what-is-an-informational-interview

Hi! I have two questions.
1) I'm trying to get into an undergraduate research project but am feeling nervous about contacting professors and introducing myself. Can you share some of your experiences with that? (Also how did you pick your research? I have so many questions that I want to answer but none of the research currently at my department had any commonality and so I feel like I have to start over in researching the professor's papers and abstracts.)

2) and did you find that through your educational career and your post grad career, changing interest or losing interest? I always seem to find something new and fascinating.

Thank you for doing this ama. Can you please tell me where I can find more info on your work?

ellybot

1) I would pick an advisor who is a good all around mentor. Ask around for who the best is. Especially one that is good for diversity and diverse career paths. Here’s a lot more advice:

Bitesize Bio Webinar How to Choose a Lab http://bitesizebio.com/webinars/life-in-science-%E2%80%94%E2%80%9Chow-to-choose-your-next-lab%E2%80%9D/

2) Yes! I love learning new things which means my interests and passions have changed over the years. Actually, very few scientists are the kind that can stick with one problem for decades (and thank heavens we have those driven scientists, they win Nobels and solve big problems). Addgene is perfect for that. I get to read about new science and molecular technologies all the time. Scientists in publishing (journal editors etc) say they have the same thing. They love the new stuff.

3) You can see my blogs at blog.addgene.org or on Linked In. Follow links as I have a lot of resources online and even more good ones created by others to recommend.

Are there many jobs for science PhD qualified people that have nothing to do with research?

moza_m

yes...see the career posts on blog.addgene.org for all kinds of examples.

I'm a recent Molecular Biology BSc grad, and former software dev and analyst. I originally intended to get a PhD because I feel the search for truly regenerative medicine is being under-investigated and I want to change that. While I did pretty well academically, I'm realizing I'm not a particularly good self starter and I'm not extremely detail-oriented. That seems like a really bad combo in the face of having to actively look for grants, come up with experiments, and take care of the other things PIs do.

Added to this I was fired after 5 months of trying hard, from the great lab I was in. I was making too many mistakes (about 1/week of various severity). There are a bunch of other terrible (financial) things happening. So I'm close to giving up and going back to software where I know I'd at least have a comfortable life financially.

In the end, I don't care so much about doing the research myself anyway, but I still really want to make sure i gets its due focus.

So, my questions are:

1. Is having your own lab the best/only way to influence what research is undertaken?
2. Do other career paths that influence how research is funded and chosen generally also require a
PhD in the field?

3. Do you have any insight into how much smaller fields should value one more mediocre PhD vs the medium sized donations that affluent-but-not-rich individuals are able to give?

Thanks for answering people's questions. Some of the ones about the career prospects for PhDs have been heartening, if also intimidating in terms of the amount of work required to do well.

Thanks for reading even if this turns out to be too much question for not enough information

TheAtomicOption

1. No
2. No
3. I don't really understand this question.

You can have a profound influence as a coder. Biology needs this too. Big data is a huge part of what we do and more every day and this invariably takes coding to wrangle. Addgene was founded by a biologist, a coder and a finance guy. All three were crucial to our success. We have a profound impact on science.

Your comments about not being detail-oriented may make it hard for you to get things going so you might want to see what you can do about that in your early career. This is something that we often need in early career stages (making too many, costly mistakes does result in loss of positions) but becomes less important in more senior roles which often focus on "big picture". And yes, that won't get you over the academic research requirements...being a self-starter is a key quality for academic research in my opinion. You should rethink the path.

Does Addgene keep all those plasmids in their own facilities? If so why do some MTA's take much longer to approve than others (which I believe is dependant on the depositing party)?

Adium

Thanks for asking! Addgene keeps 3 copies of our >50,000 plasmid library. Two copies are onsite in Cambridge, MA and one copy is offsite in Maryland for safe keeping. Once materials are available the MTA has already been completed by the depositor. The speed of requestor completion of the MTA can depend on you’re the requestor’s technology transfer office (TTO). Some offices are larger than others, some are busier and some have administrative checks that take time. We try to help TTOs streamline this process and because of our unique online electronic MTA this can often be done with a very fast auto-approval process. Not all university TTOs choose this option. Our tech transfer team is happy to work on this to speed things up. If you are having trouble at your institution, please email us and let us know.

Hi Dr. Kamens, thank you so much for doing this AMA. I'm currently in the middle of my doctorate degree (and plan to do research in academia) and I have a couple of questions:

1) What are some factors that you should look for during a mentorship? For example, should you choose someone who is more well-known in the field but may be too busy for you or someone who is less well-known but has more time?

2) Where do you see the field of gene therapy going? A lot people initially had a lot of high hopes for gene therapy but there's been numerous difficulties that prevent it from being as successful as expected? Do you see it expanding in the near future with the big advancements made in molecular biology these past decades?

3) Do you have any advice on networking?
4) How easy is it to transfer from academia to industry? What are some of the changes or challenges that you've experienced?

5) Do you have any general words of advice for success for people in science?

Sorry for the numerous questions and thank you in advance!

infinite

1-I would go for less well known but has more time. Please see my mentoring blog series and eBook for much more on this! [http://blog.addgene.org/what-makes-a-good-mentor-and-6-more-faqs-about-science-mentoring](http://blog.addgene.org/what-makes-a-good-mentor-and-6-more-faqs-about-science-mentoring)

2-I think the new advances in genome engineering will change the gene therapy field for the better. Gene therapy has actually had some recent successes...it just took us a long time to get here (It can take >20 years from idea to therapy!) . [http://www.nature.com/news/success-against-blindness-encourages-gene-therapy-researchers-1.18603](http://www.nature.com/news/success-against-blindness-encourages-gene-therapy-researchers-1.18603)

3-please see my fun webinar on this topic [http://www.youtube.com/watch?v=nxSI6KicDs4](http://www.youtube.com/watch?v=nxSI6KicDs4) Basically you should do it and do it often, but do it in a way that is genuine and works with your personality. My favorite way is getting involved volunteering for an organization that will increase your scientist network. Think postdoc or grad association, mentoring group for kids in STEM etc.

4-see my advice in many other posts. It is not easy (it’s rarely easy to get a job) but there is a lot you can do to make it easier. Meet people, start doing this early and explore the many many options. Biggest challenge? Science trainees that do literally nothing about career preparation until they are 6 years into grad school or a postdoc. Seriously, you smart scientists should know that this is an area you need to think about early and often.

5-do it if you love it. You have to to be happy.

Hello Dr. Kamens,

Thank you for doing this AMA. This is a fantastic opportunity for current PhD students like myself.

1.) What do you recommend students currently do in preparation for a career outside of academia? Coming from just my masters and going straight into a PhD program, it is hard to know what to do if you only know about academia. I am currently doing informational interviews with people in different sectors (e.g. local government). What else should I be doing?

2.) Have you ever experienced or know anyone who has experienced difficulty getting a job because they have a PhD, as in, they may be overqualified?

3.) Can you touch a little bit on the challenges of being a woman in science who is considering starting a family in the future? What can she do to prepare for being able to both be a mother AND be in non-academia science?

Thank you in advance!

VerklemptOne

1) Please see my other answers and check out the career blogs at blog.addgene.org Informational interviews are huge!! Keep it up! 2) i hear about this all the time. Knowing people better than a resume is what opens doors. You are overqualified for some things so that is sometimes true. 3) Choose and ensure an equal partner to do the raising with you. Read my blogs on work/life negotiation. it’s called “how to find the joy”
I've had trouble getting a career started since I got my PhD several years ago. I know I need help, but I don't know who to ask or what to ask them. Fortunately, I have you to ask who to ask! Thanks for doing this AMA :) 

So, how can I find a mentor? All of the more senior people I know are academics who only know academia, and academia isn't a career option for me. What do you recommend I do to locate someone who's been through what I'm going through and is willing to help me?

jcocollier


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Hi Joanne,

I just wanted to thank you for all the great work you do in educating and supporting young scientists. I have been incredibly fortunate to have heard you speak on a range of topics, numerous times (I am somewhat of a fan girl) and just last week accepted an industry job, putting an end to my postdoc years (and doubling my current salary!).

Your wisdom and experience absolutely helped me see that I was talented enough to make it into industry and illuminated the way to get there - so thank you!!

P.S. For all the curious redditors, there are a number of talks by Joanne online:

- [Not Networking 101 - Building Relationships for Success](http://blog.addgene.org/)
- [The Kamens Ten Commandments of Work/Life Balance](http://blog.addgene.org/)

As well as some great posts on the [Addgene website](http://blog.addgene.org/). 

a_karenina

Thanks so much for saying so. It makes all my volunteer work worth it when I hear success stories and glad to hear I helped in some small way. I am so delighted to hear about your job! Have fun!

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What is the outlook of jobs in pharma for women with MS or BS degrees? I work in academia so my exposure is somewhat limited, but I've never met anyone who worked in industry who didn't have a PhD and I'm wondering how applicable these degrees are.

jimmy-neuron

I know quite a few professional technicians in industry drug development with BS or MS degrees and they were quite happy and excellent at their jobs. One in my group even eventually got promoted to be a biology project leader (a position usually reserved for PhDs). but think past "industry"..there are a lot of other things you can do besides pharma.

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You went to Harvard for your PhD, which is one of the top schools in the country for your field (or virtually any other). How much of your success would attribute to being in a top program, and do you think your advice about going to graduate school is biased by this? Would you still encourage women (or really, anyone at all) to go to grad school in a low-ranked program that has issues with placement?

ObviouslyAltAccount
I think this has helped me many times in my career, but it isn't the only way to get ahead. The best way to progress and find opportunities (I know I've said this but it can't be said enough) is to have contacts (real relationships with people) in interesting careers and organizations. Once someone knows you and wants you for a job, the details of your CV are less important.

No question for you Joanne, but I remember your name from Roger speaking about you. I worked with him at the Hutch for a while. He's a great scientist and really taught me a lot about approach to science, which as an engineer was pretty different than his. So we definitely had differences in opinion that led to some really great discussions. Glad to meet a science cousin out in the wilds of Reddit!

gravrain

I miss Roger! He was a fantastic mentor in so many ways. You might enjoy this caricature I had made of him for my thesis defense slides. https://drive.google.com/file/d/0B3YKC9lQ4IhJa2p0MW1ZZExGUmM/view?usp=sharing

Hi Dr. Kamens! I just joined Mass AWIS and was wondering if you had advice about how to get the most out of the mentoring circle? This is my first time participating in anything like this and I'll be graduating from my PhD program in Physics/Network Science within the next year so I'd like to really utilize my time with the association. Any advice is welcome! Thank you!

whyarewe

Fantastic! I think there will be some training but please see my mentoring blog series and eBook for much more on this! http://blog.addgene.org/what-makes-a-good-mentor-and-6-more-faqs-about-science-mentoring and feel free to reach out to me for resources once you have topics your group wants to work on. Here's another useful blog: https://www.linkedin.com/pulse/what-should-we-talk-7-months-good-mentoring-joanne-kamens-phd?trk=mp-author-card

Hello Dr. Kamens,

Do scientists ever question/acknowledge the philosophical assumptions that underpin science and the scientific method--even casually? Do you embrace the idea of scientism or reject it?

Thank you.

Bjarki56

Alas, I am 100% scientist with no drop of philosopher.

For those that were wondering sci-en-tism 'sīənˌtizəm/S noun rare thought or expression regarded as characteristic of scientists. excessive belief in the power of scientific knowledge and techniques.

Hi Joanne, I produce http://www.legendsofscience.com/ cards and have started research into doing a comic (or another deck of cards) focused on women who were snubbed in their credit for their discoveries.

Do you have any personal favorite women scientists or discoverers who may have gotten less credit for their discoveries than was deserved?

KeithO
Well this is just fun. Some cool women scientists in no particular order I know of just off the top of my head (how many can most of you name?)- we could be here all day. Maybe commenters will add more! Millie Dresselhaus Milly Koss (my cousin!) Katherine Mack Valentina Tereshkova Sally Ride Judith Resnick Kathy Sullivan Mae Jamison Lydia Villa Komaroff Abby Celniker Inger Mewburn Jennifer Doudna Emmanuel Charpentier Gertrude Elion Dorothy Hodgkin Shirley Ann Jackson Birute Galdikas Nina Byers Elizabeth Blackburn Christiane Nusslein-Volhard Laura Bassi Laurie Leshin Linda Buck Corey Bargmann Claudia Alexander Evelyn Boyd Granville

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redditWinnower

Thank you! It is fantastic the Winnower can archive this sort of content. Addgene loves non-traditional science communication. Keep it up and all scientists should support The Winnower.

I love my job but I was just wondering if I will ever be able to get higher level positions instead of just a pay raise

o-rka

sure. Start reading career blogs on the internet. As you get more experienced and learn more, taking initiative to solve problems and discussing a promotion path with your supervisor will help this happen. if you see no room for advancement consider changing jobs...often times that is what it takes if your current employer is not helpful about working on career progression.

So let's say someone hypothetically obtains an Addgene plasmid while working in 1 lab and then takes it with them to another lab. Is there anything in the material transfer agreement that would lead to trouble?

borrax

If you obtain a plasmid from Addgene the legal agreements say that you will use that plasmid at the institution from which it was requested. So the short answer is yes, that is a problem. What you should do is request it again from your new lab. This practice ensures that the depositors know where their materials have been distributed and are being used. Addgene focuses on collaboration so this is a good thing. In fact, some scientists deposit their own materials (made by them) and then request them when they start a new position elsewhere as this is an easy, fast way to ensure they are using them legally.