INSIGHTS

LETTERS

Dear NextGen Voices,

I am an undergraduate student trying to get exposure to research in a lab. I found an internship, but the graduate students and even postdocs seem to resent the idea of an undergraduate in the lab. Some have said that I take up valuable time and resources that should be devoted to more experienced lab members. I am often excluded from even informal conversations and activities. This unwelcoming culture took me by surprise and has decreased my motivation to pursue science. What should I do to improve my current situation, and how can I learn from this experience when making future career decisions?

Sincerely,
Unwelcome Undergrad

NEXTGEN VOICES: ASK A PEER MENTOR

When internships disappoint

Being the most junior member of a lab is a rite of passage for many researchers. We asked young scientists to act as peer mentors by providing advice to an undergraduate student who was excited to find an internship but disappointed by the unwelcoming atmosphere in the lab. In response, mentors ask questions to help the student reflect, share their own experiences, and offer advice about how to move forward. Read a selection of their thoughts below. Follow NextGen Voices on Twitter with hashtag #NextGenSci. **—Jennifer Sills**

Make yourself useful

If you were a doctoral student, what would you look for in an undergraduate student before letting them participate in your project? As a junior who has worked in two labs, I suggest carefully reading relevant research articles and offering to assist graduate students with their experiments (such as preparing experimental materials or processing data). If we do a good job with the tasks assigned to us by graduate students, they will be more likely to trust us and provide more opportunities.

Rui Tang
Division of Life Sciences and Medicine, University of Science and Technology of China, Hefei, Anhui 230027, China. Email: zxcvbnm@mail.ustc.edu.cn

What are some tasks you can do to help others? A hardworking, sincere, and proactive attitude will take you far. Maybe you can make an agenda for a meeting, organize files or data, or look up interesting data or papers for your colleagues. Shadow senior lab members, ask questions, and make detailed notes of their procedures so you can help them next time. Read extensively and challenge yourself to come up with one new question every day.

Tina Bharani
Department of Surgery, Harvard University, Brigham and Women's Hospital, Boston, MA 02115, USA. Email: tbharani@bwh.harvard.edu

Have you thought about getting your own research grant? Before starting my research, I wrote a proposal and got funding from my university. I use my own funding to purchase experimental materials and reagents. Talk with your PI about the possibility—some universities have established research programs or funding for undergraduates. If you bring your own resources, you will have more in common with other lab members and they will see your contributions to lab development. In addition, proposal writing is great for your career development, given that grant application is the first step for your future independent research.

Jian Ding
Division of Life Sciences and Medicine, University of Science and Technology of China, Hefei, Anhui 230027, China. Email: dj2019@mail.ustc.edu.cn

Is your lack of experience the only explanation for such poor treatment? Some labs are unwelcoming regardless—I had a similar experience as a postdoc. I would recommend trying to minimize the time you require of others. Clean up your lab bench when you finish working and notify others when materials need to be ordered before the supply is exhausted. If you find yourself stuck, spend some time searching the internet and primary literature before asking someone. Seek advice from your fellow labmates or the PI if you still have questions.

Kefeng Li
Faculty of Applied Science, Macao Polytechnic University, Macao SR, China. Email: kli@ucsd.edu

Are you familiar with your lab colleagues' work? I felt awkward in a lab where everyone was busy with their own projects. Try to figure out what experienced lab members need. Study the papers they have published and ask them substantive questions about their work, on email or social media if talking face-to-face is uncomfortable. Or find a time to talk to them when they're not busy, such as during lunch. Demonstrate that you have the potential to contribute at least to the discussion of their research. Once the connection is established, you can offer to participate in their current projects.

Ju Wen
School of Liberal Education, Chengdu Jincheng College, Chengdu, Sichuan 611731, China. Email: jupiter@cdjcc.edu.cn

Communicate your concerns

Have you identified the projects to which you can contribute? Well-established labs function like families, and finding a space in such a tight-knit community is challenging. Initiating a venture by yourself will be met with resistance. Instead, discuss with the PI how you can contribute, ideally by helping with several projects that use overlapping techniques. Then meet with each project lead and PI. If, despite your efforts, you continue to be ostracized, save your energy for a more friendly work culture.

Suchitra D. Gopinath
Translational Health Science and Technology Institute, Faridabad, Haryana 121001, India. Email: sgopinath@thsti.res.in

Have you considered coordinating a meeting with the PI and your graduate mentor to discuss expectations and project goals? As an undergrad new to the lab, I actively communicated with my mentor and set clear expectations and quantitative objectives. Setting clear expectations between mentor and mentee helps keep everyone on the same page regarding the responsibilities. Setting incremental, achievable, and quantitative quarterly goals helps to keep the responsibilities in check. Convince your mentor that you are an asset to them rather than a burden.

Teng-Jui Lin
Department of Chemical Engineering, University of Washington, Seattle, WA 98105, USA. Email: tlin10@uw.edu

Have you tried connecting with colleagues on a personal level? Remember that the PI sees potential in you and decided to welcome you into the lab despite your relative inexperience. Consider asking lab members about how they first started—experienced researchers sometimes forget that all researchers had to start somewhere and that they are no exception. More broadly, keep an open scientific mind and ask many questions. Initiative and curiosity are almost always appreciated and can earn you respect among researchers. By asking good questions, you can demonstrate that you bring something unique to the table even without years of experience.

Jay X. J. Luo
Johns Hopkins University, Baltimore, MD 21218, USA. Email: xluo28@jhu.edu

Cultivate empathy

Have you tried to empathize with the graduate students and postdocs? Although science is a noble and exciting pursuit, it is also hard and highly competitive. The members of your lab are likely under tremendous pressure to produce publications, patents, or grants. They might worry that your presence will hinder their progress. If you approach the situation with empathy, you might find a way to help. By offering to care for lab rats or do simple, repetitive, and time-consuming procedures, you can develop a good rapport with your lab colleagues and get hands-on experience.

Qianjun Wen
The Affiliated Hospital, Guizhou Medical University, Guiyang, Guizhou 550004, China. Email: wqjtmmu@126.com

Why might the graduate students and postdocs in the lab resent the time and resources that you are using? When people feel like they don't have a say in how they use their time, they can come to resent the people that they should support. Maybe a postdoc planned to spend the next few weeks finalizing an important paper but was then told by the PI to help you instead. Meet with your PI and the other members of the lab to discuss expectations and find some middle ground. For example, maybe a postdoc could help you for a set time each day, leaving the rest of their day free. Clear expectations could reduce resentment. If, despite your efforts, the situation doesn't improve, see if other support is available, and don't be afraid to leave if the costs to your wellbeing are greater than the benefits of the internship. Finally, please don't give up on science because of this experience. There are lots of different labs, and many are very supportive and friendly!

Katherine Davis
Department of Infectious Disease Epidemiology, Imperial College London, London W2 1PG, UK. Twitter: @kd_katdavis

Have you considered why this unwelcoming culture exists in the lab? Teaching is an essential part of academia, and a successful teaching culture starts with the PI. Does the PI in this lab think teaching is a waste of time? Is it that lab members do not receive recognition for their time and effort spent teaching? By talking to people from other labs, you can identify what is different in this particular lab. Understanding the lab dynamics will help you decide how to move forward.

Norman van Rhijn
Manchester Fungal Infection Group, University of Manchester, Manchester, UK. Twitter: @NormanRhijn

Demand respect

Do you value interesting research more than a welcoming environment? As a female undergraduate, I was devastated when I received far harsher treatment from my lab supervisor than did my male counterparts. I felt like there was no action I could take to protect myself other than to take up less space. But then I realized that no one could fully exclude me without my consent. Remember that your presence in the lab, even as an undergraduate, is incredibly valuable! It is worth remembering that every one of those graduate students and postdocs were once undergrads who needed training, mentors, and patience. Fighting for the space you deserve to take up is a valuable exercise and has the potential to change your colleagues' minds. Ask questions, demand answers, and do your best to remain optimistic. I speak from experience when I say there are wonderful labs that welcome undergrads and make you a part of their family.

Name withheld
Philadelphia, PA, USA.

Where else can you get the skills, knowledge, and experiences you were hoping to gain from this internship? You deserve to be welcomed and respected. As the new person, it is not your responsibility to fix the lab culture; that falls on the PI. Your responsibility is to take care of yourself and your integrity. Leave this lab, and keep looking until you find a place where you are wanted and valued. You cannot do your best work when disrespected, and the value of your work will be discounted because the right people won't see it. If you have the confidence, you can tell the hiring manager or PI why you are leaving, but you don't owe them that. You owe yourself a healthy, constructive, productive work environment.

Sarah M. Anderson
Harrisburg, PA 17102, USA.
Email: sarah.m.anderson.10@gmail.com

What vision did you have for this internship when you began? Talk to your PI or supervisor about your dissatisfaction with being excluded from lab activities. Remind them that the more closely you are involved, the more productive you can be as a member of the lab. If your PI suggests that you avoid concerning yourself with—for example—the broader motivations behind the research to which you are supposed to be contributing, understand that this is not how research experiences are supposed to be. The reality is that research is far more gratifying and exciting when you find a lab that is willing to invest in your success. Moving forward, use your poor experience as a reference point: Search for labs that will immerse you in the science and see your value beyond carrying out menial tasks.

Rishi Jai Patel
Department of Chemistry, University of Pennsylvania, Philadelphia, PA 19104, USA.
Email: ripatel@sas.upenn.edu

Find support

Have other undergraduates had similar experiences in this lab? If you feel unwelcome in the lab, chances are others have, too. I suggest that you connect with your lab's alumni to learn how they overcame the resentment toward undergraduates. Lab alumni will likely be sympathetic to your situation and may provide helpful tidbits about how to connect with your colleagues. Perhaps you will find that you and a postdoc are from the same hometown or have similar hobbies. Such information can help you identify potential mentors in the lab and initiate informal conversations with them. Simply bonding with one of your postdocs may be enough for you to carve out an academic role in your lab and establish a good rapport with the rest of your research team. Learning from your predecessors can give you an edge in building those relationships.

Sai Sarnala
Department of Chemistry, University of Pennsylvania, Philadelphia, PA 19104, USA.
Email: ssarnala@sas.upenn.edu

Are there any support networks in place? In my experience, as a member of minority groups, scientific communities are not always inclusive of individuals with needs outside the norm. Practice self-care first. Then, try to find people who may be in a similar position or who can listen and understand your concerns. Having a support network (for emotional and academic support) can help you find the strength to manage issues and advocate for yourself.

Fernanda Suemi Oda
University of Kansas, Lawrence, KS 66045, USA.
Email: oda@ku.edu

Take the long view

Have you considered that other fields have unwelcoming spaces as well? I would discourage you from changing your career goals based on this experience. In any field—not just science—new trainees are excited by the possibilities of a career, whereas those with more experience tend to be more cynical about the field's limitations. Not everyone understands how to nurture newcomers and keep their hope alive. Focus on your research question and hone the skills you need. You will encounter similar challenges in every field, so learning to overcome them will help you no matter what you decide to pursue.

Garima Singh
Mott MacDonald, Noida, UP 201010, India.
Email: Singhg20@gmail.com

How can you use this research experience to make yourself a more sought-out candidate in other labs? Create a presentation summarizing what you learned to build your resume, and then apply for internships in diverse fields. Never make your future career decisions based on one experience; instead, use scientific principles (i.e., at least three internships or research experiences) to inform your career choices.

Naga Rama Kothapalli
Trudeau Institute, Saranac Lake, NY 12983, USA.
Twitter: @rama_k_n

Do you think all the lab members feel this way about you, or are they following the lead of more senior members? It may help to try to connect with just one person in the lab, maybe someone who shares your interests and has not been hostile to you. Unfortunately, some labs prioritize competition over collaboration. In the future when looking for work, talk with people that work in the lab before interviewing or speaking with the supervisor. Use what you've learned to identify labs with better social cultures.

Natalie Scott
US Department of Agriculture, Parlier, CA 93648, USA. Email: natalie.scott@usda.gov

Are you able to achieve your goals in this work environment? I have also encountered lab members that don't seem to respect what I'm doing. In my eyes, this is good training for how reviewers will treat you when you submit papers. Reviewers often approach your work with substantial skepticism. Practicing being confident in your work and learning how to be convincing, especially to those that are skeptical, will help greatly in the long run. Also, next time you look for a lab position, explore the website's gallery tab. On occasion, you'll find a gallery inundated with images from lab dinners, farewell parties, or thesis defense celebrations—all with members smiling together. Pictures of smiling people don't guarantee a great lab experience, but they're a good place to start.

Jackson Ross Powell
Vagelos Molecular Life Sciences Program, University of Pennsylvania, Philadelphia, PA 19104, USA. Email: jrp24@sas.upenn.edu

Have you considered how you can find a better fit next time? In my experience, the cultural norms across departments and labs vary tremendously. Next time you have an opportunity to apply to labs and programs, carefully study the profiles of the academic staff, research associates, and students. Look for a diversity of academic backgrounds. Do the team members come from the same or similar institutions? Do the team members have similar niche research areas? I have found that departments that are either multidisciplinary or have researchers with a breadth of interests and methods are rewarding and inclusive.

Samuel Nathan Kirshner
School of Information Systems and Technology Management, University of New South Wales, Sydney, NSW 2052, Australia.
Email: s.kirshner@unsw.edu.au

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When internships disappoint

Rui Tang, Tina Bharani, Jian Ding, Kefeng Li, Ju Wen, Suchitra D. Gopinath, Teng-Jui Lin, Jay X. J. Luo, Qianjun Wen, Katherine Davis, Norman van Rhijn, Name withheld, Sarah M. Anderson, Rishi Jai Patel, Sai Sarnala, Fernanda Suemi Oda, Garima Singh, Naga Rama Kothapalli, Natalie Scott, Jackson Ross Powell, and Samuel Nathan Kirshner

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