

By Kevin F. Boehnke

## Nurturing my ambitions

**“Y**ou should apply!” my mentor exclaimed as they slid the job description across the table. It was for a tenure-track appointment—a position that had been my driving ambition—in the department where I had completed my Ph.D. Professionally, the timing was perfect: My postdoctoral training had expanded my skill set and I had recently received a great score on a grant application, poising me to return to my old digs with a unique niche and the proven ability to fund it. Personally, however, I wasn’t sure. My two children were both under 3 years old and my current position—a research faculty appointment in a supportive team science environment—provided much-needed stability and flexibility. It was time to truly examine my ambitions.

For the previous year, I had been wrestling with a nebulous but inescapable sense of unease. My work was meaningful and engaging, but something felt off. The wheels in my mind were always turning, mapping out future studies, career advancement, and policy consequences of my research. But instead of feeling invigorated and stimulated, I would wake up at night sweating protocol details, leaving me impatient and distracted the next day. My infant experienced birds, flowers, and trees with unwavering gusto when we went on walks, but I was distracted, fixated on study design. I found myself neglecting my meditation and yoga practice—crucial routines for managing my chronic pain—to spend more time working. As time went on, so did my feeling of sleepwalking through life.

This discomfort crystallized one fine summer day when I heard a podcast about workism, the doctrine that employment should provide identity, purpose, and community. In a flash of embarrassed comprehension, I realized this term described much of how I had approached my post-Ph.D. life. I viewed studies, grants, collaborations, and impact as integral to my identity rather than to my job, equating personal worth with professional successes. I followed my self-care routines largely to ensure I was well enough to maximize academic productivity. Because there was always more work to be done, I felt I never measured up. Put simply, my professional mask was too sticky. I feared it might become permanently stuck.

I vowed to change course. I began small, working on taking deep breaths throughout the day to stay centered and paying more attention to my internal life. When I fell into an incessant thought loop about work, I would try



**“I’ve learned to slow down, be gentle with myself, and prioritize relationships.”**

to focus on a compassionate mantra: “I am enough. I am enough. I am enough.” These practices felt grounding, but work kept derailing my efforts to return to yoga and meditation. I still wasn’t quite where I wanted to be.

Then, the tenure-track opportunity arose, and I was torn. Although the changes I had made helped me understand the patterns I wanted to move away from, parts of me were still attracted to the position. I agonized for weeks, talking with anyone who would listen and tossing and turning at night.

I ultimately decided not to apply. It was tough to let the opportunity go, but I’m at peace with it. I haven’t abandoned ambition; I have expanded it to encompass physical, emotional, spiritual, and familial goals. I recommitted to yoga and meditation through my personal practice and occasional teaching. My wife and I have devoted ourselves to putting down deeper roots and cultivating a loving, thoughtful community—a “village” for our family. I savor how I’ve learned to slow down, be gentle with myself, and prioritize relationships—all of which leaves me more fulfilled.

As my relationship with ambition evolves, I keep returning to the word “alignment,” which my favorite definition describes as “proper positioning ... of parts in relation to each other.” I suspect that aligning my ambitions will be a lifelong effort. By working to channel my attention toward what really matters to me, I hope to find appropriate balance for the different life phases to come. ■

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By Blaise J. Arena

# Outside my comfort zone

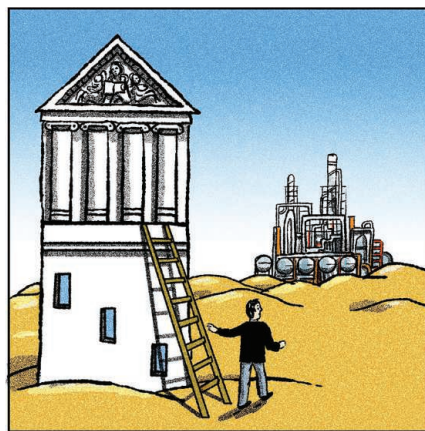
**H**eat and sand. A restrictive culture. Saudi Arabia didn't seem to have much to offer compared with other countries I had visited. So, after decades spent happily working in laboratories, how did I end up in the Saudi desert, trying to do science at a petrochemical plant? ■ My long career with a developer of petrochemical processing technology began as a research chemist at its main research center near Chicago, Illinois. It was—is—a very fine laboratory. We were able to turn out accurate results quickly. An array of pilot plants ran smoothly, cranking out data 24/7. Complex experiments were designed, and definitive conclusions were drawn efficiently.

In time I took on a new role, helping develop collaborations with other companies in the United States and abroad. This was a fundamental shift for me: While I was still deeply involved in solving scientific problems, there was a new focus on building relationships. Then, a few years ago, someone got the bright idea that I should join a technical team to diagnose and solve performance problems at a customer's propane dehydrogenation facility, which my company had designed, while the plant remained up and running. It was a formidable challenge, and a lot was on the line.

In some ways, I was not an obvious choice. I knew little about the technology. I had never worked in the field, in a production unit. No one cared. Those encouraging me to join the team praised my "vast expertise and experience." They said my "fresh eyes" would be a benefit to the team. I fell for the flattery and signed on.

After a crash review of the technology, I embarked on the first of three 2-week site visits to Al Jubail on the Persian Gulf coast. Major culture shock. All women there wear full burqas; no faces are seen and no interaction permitted, so you are cut off from half of society. Everything is forced to close during prayer times. Inappropriate dress, even by men, results in a public reprimand from a local cop. I had been to Muslim countries before, but this was far more intense. It was jarring and isolating but also fascinating. And it was HOT.

You'd think that removing two little hydrogen atoms from propane to make propylene would be simple. It is not. Propane wants to keep them. The dehydrogenation facility is big and incredibly complicated: huge, hot catalytic reactors, multiple gas separation towers, gas purification units, and cooling systems, together covering four city blocks. It's



*“Things that are easy in the research lab ... are hard in the field.”*

designed for liters per day is way different than a facility producing hundreds of tons per day. There is much you cannot do: You can't take samples from just any point in the process, or change operating conditions just to see what happens. Staff members may lack the experience necessary to avoid subtle problems in sampling and analysis. Data are often so uncertain, so clouded by events, that interpretation becomes more art than science, or impossible. I organized a series of conference calls with our analytical experts back home, reviewing and improving procedures alongside local staff. We made progress and improved relationships.

When troubleshooting complex systems—systems that encompass not just science and technology but also people and relationships—there may be many culprits. By addressing root causes of disparate problems, our team made important improvements. And I learned plenty. ■

*Blaise J. Arena is a retired research chemist and project manager. Read more on careers at <http://www.sciencecareers.org>.*

By Michelle E. Portman

## You'll be OK

**W**hen I entered the workforce, at age 27, my goal was to shape environmental quality and protection in a relatively new country, Israel. My background—a bachelor's degree in political economy of natural resources from the University of California, Berkeley, and a master's degree in urban and regional planning from the Technion-Israel Institute of Technology—led to positions first in government and then at an environmental non-governmental organization. My work was meaningful and influential, and it supported my husband's studies: He had just finished military service and had no family financial backing. I hoped I would get a chance to go back to school when he finished.

After he finished his degree, my husband left me and our 3-year-old son. I returned to higher paid government work. Soon I moved back to the United States, to what I hoped would be a better job and to be near my family. I wanted to go for a Ph.D., but without financial support or sufficient savings—and worried about raising my son while concentrating on a Ph.D.—I continued for years in a predictable 9-to-5 job. But the work was political and unchallenging, and I watched as many of my co-workers sat at their desks, counting the years, months, or weeks until retirement. I was unhappy. I longed for a job I would love.

One day, I saw an announcement on the bulletin board: "Seeking Ph.D. Students." The state university had opened a part-time public policy program and was recruiting state employees. It was what I was looking for: I could draw on my years of experience in government, and I could join a Ph.D. program and keep working part time. My recent remarriage meant I could afford to reduce my workload. My new partner was supportive.

I applied to the program and got in. I was 39 years old, pregnant with my second child—the first with my new husband—and looking forward to starting my studies in the fall. The pregnancy had no discoverable abnormalities, but when my daughter was 2 weeks old, she started having uncontrollable seizures. By the time I started the program, we were deep into dealing with severe birth defects. They led to a full right hemispherectomy when our baby was 10 months old.

I was on leave from work for most of this time, but I was always studying. I recall sitting at her hospital bed, reading literature and writing papers. Our daughter's prognosis was not good, but I found in my studies not an escape but a vivid alternative that drew me in effortlessly and



*"I have learned to value all of life's experiences, the ups and the downs."*

gave me deep satisfaction.

In time, having arranged myriad therapies for our daughter, I returned to my paid job. I continued my studies. We adopted a second daughter, from Russia. I finished my Ph.D., with distinction. I left government service and started a 2-year fellowship at Woods Hole Oceanographic Institution's (WHOI's) Marine Policy Center. My love of research, writing, and mentoring grew. I published well.

As my WHOI tenure came to a close, I had five on-campus interviews—but it was the economically disastrous year of 2009, and none of those opportunities panned out. So I took another postdoc, at Hebrew University of Jerusalem, which led to my return to my alma mater—Technion—where today I am an

assistant professor teaching and researching marine and coastal planning. My job is challenging and rewarding.

I have learned to value all of life's experiences, the ups and the downs. Our daughter will always be significantly handicapped—her rehab from many surgeries was long, and life with half a brain is no cakewalk—but all my children and my husband have brought joy and perspective. At the same time, work—good work that I am excited to wake up to every morning—has been a source of strength on all fronts, personal and professional. Loving what you do and believing it is important won't ensure that everything else is perfect, but if you persist you'll make it through. This is a message I hope to pass on to my students. ■

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By Xin Lu

# The rewards of roughing it

**M**odern life, concentrated in cities and lived online, is corroding many young people's innate love for nature. Much of science, too, is moving away from fieldwork. Biology is increasingly lab-based, and much important earth science research is now done in front of a computer screen rather than out in the physical world. As an ornithologist working on the Tibetan Plateau, I've found fieldwork both scientifically and spiritually rewarding. My experience has convinced me that any young scientist involved in revealing natural processes at a macro scale should seize opportunities for fieldwork, which enriches not only one's science but one's life.

I first visited Tibet in 1995, as a Ph.D. student enrolled at Beijing Normal University. To reach the study site in southeastern Tibet, I traveled for 3 days in a jeep from Lhasa to a small town, and for another 3 days riding a horse through virgin forests. I stayed there for 6 months to study the ecology and social behavior of Tibetan eared pheasants. In 1997, after I joined Wuhan University as a faculty member, I continued my work from a Buddhist nunnery in the mountains around the middle of the Yarlung Tsangpo River in southern Tibet. The nunnery served as my field station for studying alpine birds until 2004. Since then, I have focused my research on grassland birds in northern Tibet.

Doing fieldwork on the cold, windy, and oxygen-poor Tibetan Plateau is a challenge for anybody. I have struggled through deep valleys, climbed steep cliffs, cooked my meals using firewood for fuel, and lain in an unheated hut without electricity, missing my family. Nevertheless, the thrill of discovering the unknown world has eased the physical and emotional hardships. It's fun to probe the enigmas of the highland birds' natural history, which ornithologists have never before unraveled.

Besides academic payoffs, fieldwork offers emotional and spiritual rewards. The molecules and cells that other biologists study in their labs are full of wonder, but they can't be directly seen or heard. In contrast, mountains and glaciers, rivers and lakes, and plants and animals excite the senses, inspiring anyone with poetry in their souls. I'm a conservationist and amateur writer of fairy tales. Getting into the fantastic wild of Tibet through fieldwork feeds my imagination and inspires me to view the world in ways that go beyond science.

Gaining an in-depth understanding of local culture is another unique charm of fieldwork. I have watched Buddhist banners flying in the blue sky, and I have heard Buddhist



*"I've found fieldwork both scientifically and spiritually rewarding."*

nuns chanting to morning bells and evening drums. I have experienced the generosity of Tibetan villagers who, despite the hardships they have suffered, always gave me as much help as they could when I needed shelter, food, horses, and dogs.

Fieldwork teaches me that struggle can lead to joy. After an exhausting search through thorny undergrowth, I have the pleasure of discovering a bird's nest. After hours of hunger, I can enjoy a Tibetan-style lunch near a stream. After a day of climbing, sleeping in a rough bed under the stars is a delight. And all that physical hardship makes my body stronger. While sitting at high elevations, a person burns far more calories than she or he would at rest in the lowlands, according to physiologists. Add to that the trekking and climbing, and I return from fieldwork with a bonus in fitness.

I cherish my memories of field time: singing loudly on horseback, petting the villager's dog that had safeguarded me against bears, getting lost in forests filled with misty rain. All those memories are a kind of wealth—a reward that goes beyond the scientific papers I have published about my findings.

My attitude toward fieldwork is influencing my students. Following in my footsteps, they go to the Tibetan Plateau every year, dedicating their youth, talent, and love to alpine ornithology. I like to think they feel as fortunate and happy as I do. ■

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By Stephen T. Jackson

# Going where the science matters

Not long ago, I was a tenured professor on a sabbatical at the University of Oxford in the United Kingdom. One winter morning, reflecting on why we scientists work as hard as we do, I identified three primary drivers: curiosity, ambition, and idealism. We chase interesting problems, wherever they lead. We're a competitive lot, with career advancement an important incentive. And we're compelled by a desire to benefit society.

Later that week, an old friend sent a photo taken in the Adirondack Mountains during my first summer's fieldwork as a Ph.D. student. Looking at my 24-year-old face, framed by long black hair and a dreadful orange sweater, I asked myself, "What was on that young fellow's mind?" Clearly, he wanted to satisfy his curiosity about how climate change affected ecological communities. He was idealistic, with notions of applying his training to the cause of conservation. In his naiveté, he viewed personal career advancement as unimportant, even contradictory to the greater good.

What would he think of my grayer self, sitting in my Oxford chambers some 30 years later? Though I hadn't answered all the questions that gripped him, he'd be pleased that I'd learned a lot about climate change and ecology. He'd probably be happy that I'd had a successful career—though I expect he'd ask whether I hadn't been co-opted by "the system." And he'd be wondering in exactly what ways I had contributed to conserving the natural world. My honest answer: "Not many, beyond haranguing students, giving public lectures, and writing academic papers."

Not long after these reflections, some colleagues suggested that I look into a job opening at a federal science agency to lead a program aimed at bridging the gap between the climate-change research and the natural-resource management communities. My knee-jerk reaction was to say no. I was comfortably tenured, enjoying the honors and perks of an established academic career. But tugging at my coat sleeve was my younger self, asking me why I shouldn't reinvest my knowledge and experience into benefiting the environment.

With no good answers for him, and a reawakening idealism, I applied for the job. It's now been 3 years since I assumed directorship of the Southwest Climate Science Center in Tucson, Arizona. I've worked harder than I ever did as a professor. I've had to acquire new skills, and I'm still strug-



*“What would he think of my grayer self ... some 30 years later?”*

I'm doing so in the center's rich environment of multiple academic disciplines and professional cultures, and with the view to solve compelling real-world problems.

Is my job perfect? Certainly not. As in any administrative job, some tasks are neither interesting nor enjoyable, and government administration has unique aggravations. But on the positive side, I no longer suffer the exhausting high-passion, low-stakes squabbles that can arise among university faculty members. And, most importantly, I enjoy the added satisfaction of knowing that my center is having a real impact on conservation. So, looking again at that old photo, I wonder whether the grin on my face came from knowing that, one day, I would inform and influence conservation in a direct and tangible way. ■

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By Julian G. West

## Fortune favors the well read

“You found that in what journal?” My adviser, sitting across the desk from me as we discussed my next research project, raised his eyebrows in surprise. We had recently finished my first project and realized that our methods had some limitations. We needed to redesign our experiments, so I had done a lot of thinking and reading and had collected some preliminary results on new approaches. And based on some surprising sources, I had come up with an unusual proposal for advancing past the obstacles we had encountered.

“Actually, two journals,” I replied somewhat sheepishly, “*Inorganic Chemistry* and *The Journal of Physical Chemistry*.” We are organic chemists, and although the difference between our field and those represented by these two journals may seem small to a nonchemist, to specialists they are practically different planets. Neither of these journals is usually found near the desk of a card-carrying organic chemist—yet here we were discussing these two papers, the more recent of which was published 2 decades ago.

“I know that this sounds crazy,” I continued, “but look at the reactivity that they saw.” We craned our heads over the printouts. The authors of these papers had given little thought to whether their results had much bearing on our field—they weren’t organic chemists, after all. However, being good scientists, they had made copious observations during their experiments, and sure enough, some had interesting implications for our studies. “I see what you mean,” my adviser said, “but I don’t know how you find these papers.”

The answer is pretty simple: I aggressively curate and monitor the notifications I receive about newly published papers, and I read those that strike my interest, even if they’re not directly related to my research. Then, if I find an interesting string of references in a paper I’m reading, I’ll follow where it leads. That’s how I found my way to those decades-old papers. Chemistry also has a small but vibrant blogging community, and sometimes a thoughtful post highlighting a recent paper will start me on one of my literature dives. If I find that many of these references come from the same source—*Inorganic Chemistry*, for example—I’ll add it to the stable of journals that I follow.

Perhaps the bigger question is why I make the effort. The short answer is that I read widely to prepare myself



**“I read widely to prepare myself for whatever might come along in the lab.”**

for whatever might come along in the lab. My biggest fear is the one that got away, the important discovery that I missed because I couldn’t see it for what it was. It’s this fear that drives me to cast my intellectual net widely, so that I have the broad foundation I need to see my research from multiple angles. Given the limited number of hours in each day, it can be tempting to read only in my sub-discipline, but I know that doing so would ultimately limit the kinds of connections I can draw. Fortune favors the prepared mind, as Louis Pasteur famously said to explain his scientific success, and I am doing my best to be prepared.

That conversation with my adviser was a few years ago. The intellectual leap inspired by those

old papers enabled me to finish and publish my project, and I am now wrapping up my Ph.D. studies. As I look back on my graduate career, I realize that it’s been replete with these sorts of situations. Time and time again, strange observations in the lab reminded me of a paper I had read in some far-out journal, or a seemingly irrelevant visiting speaker’s talk suddenly led me to understand a result that had been bugging me for weeks. These are my favorite moments in research; the thrill of finally fitting disparate pieces together is tough to beat.

One of the new first-year students in our department recently asked me for advice on making it through graduate studies. I typically find that type of vague question tough to answer succinctly, but this one was easy: Read widely and voraciously. Fortune doesn’t come every day, but when it does, you will be prepared to make the most of it. ■

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By Michael Palladino

## Stepping up to leadership

**F**our years after I received tenure, the dean of science at my primarily undergraduate institution called to tell me he planned to retire. “I’m recommending you as my replacement,” he said. I didn’t think much of it until a few months later, when the provost and president asked to speak with me. They said they thought I was a strong candidate for dean and asked whether I was interested. I was flattered. But I wondered, “Why me? Why now?” I was a relatively young faculty member, and I would have to oversee academics in disciplines well outside my own. I wasn’t sure I was qualified—or whether I wanted such a drastic change in my professional life.

I loved my job. I could not wait to come to campus every day. I enjoyed the classes I was teaching. And I was midway through a federal research grant, with a lab full of talented and enthusiastic undergraduate research students. We were publishing in good journals and presenting at conferences.

But I took the inquiry seriously and spoke with colleagues to get their perspective. They convinced me that perhaps others saw something in me that I did not see in myself. I had served in leadership positions within a few national organizations, such as the Council on Undergraduate Research, and they thought that my leadership skills would be valuable within our own institution. My colleagues also encouraged me to think about the opportunity I’d have to advance issues that were important to me and other scientists.

In the end, I decided I couldn’t pass it up. I became a scientist because I wanted to have an impact, to make a difference. If I stayed in my current position, I might earn a few more grants, publish more papers, and teach a larger number of students. But the dean position would give me a chance to have a wider impact.

Teaching and research were still important to me, so I negotiated an arrangement that would allow me to continue teaching at least one course each year and maintain a scaled-back research agenda. To make this possible, the university hired a full-time associate dean, who lessened some of my administrative workload.

When I started, I made it a priority to learn how individual departments worked and what they saw as their top needs. I didn’t go in thinking I had all of the answers. Instead, I surrounded myself with smart people, and I listened to what they had to say. That approach was especially helpful when dealing with academic departments I was less familiar with.



**“The dean position [gave] me a chance to have a wider impact.”**

Gradually, I started to see how the university operated beyond my home department—biology—and to see where it could grow. I worked to hire more faculty members and fund a \$48 million project to expand and renovate the science building. I also secured external funding for a summer research program that gave undergraduate students a taste of what it’s like to work in a lab. The work felt rewarding because I enjoyed supporting faculty and watching our students learn and grow.

The transition hasn’t always been easy, however. Juggling the increased demands on my time has been especially challenging. I feel as though I’m constantly switching between different hats—my teaching hat, my research hat, my administrator hat—and it can be dizzying. I’ve had to make some difficult—and not universally popular—decisions, including to merge the computer science and software engineering departments. And I’ve noticed a shift in my relationships with colleagues: Some have kept me at a greater distance than before, whereas others have sought me out because they want to ask me for something.

Overall, though, my career transition has been positive—so much so that I moved into a vice provost position 7 years after accepting the deanship. I’d strongly encourage other academics to be open to unexpected opportunities in administration, even ones that you may not think you’re ready for. With the changing climate of higher education, institutions desperately need thoughtful, strategic leaders with the communication and organizational skills to lead and inspire their fellow academics. ■

Michael Palladino is a former vice provost for graduate studies at Monmouth University in New Jersey. In May, he’ll be vice president for academic affairs and dean of the faculty at Bloomfield College.

By Mingde Zheng

## Listen to your body

**A**fter drawing blood and running a CT scan, the doctor had questions for me. “What is a typical day like for you?” he inquired. “I am a graduate student with a packed schedule that usually keeps me at work late into the night,” I replied. Next, he turned to diet. I paused when this question came, embarrassed by my answer. “I only have coffee for breakfast. For lunch and dinner, I usually grab something from a fast-food vendor on campus.” The doctor seemed aghast. As more questions followed about my stress levels and lifestyle, my unhealthy state began to sink in.

It was easier to live a well-rounded life and stay healthy when I was an undergraduate student. I had fewer responsibilities—succeeding in classes was the main priority. I lived in a dorm with resident assistants who advised us about our personal lives, showing us where to eat and exercise. The cafeteria served healthy food options. And I had a built-in group of friends through the dorm, which made it easy to participate in social activities.

That all changed in graduate school. I was laser focused on my dissertation project and doing what I could to become a successful scientist. I lived off campus, and I didn’t feel I had the time or energy to shop for groceries and cook. I stopped exercising and didn’t spend as much time socializing. My drive to succeed blinded me from seeing any potential problems with my lifestyle.

Sometimes, I could feel that I was becoming sluggish. But instead of giving my mind and body a rest, I drank energy boosters to maintain my stamina and continued to work long hours. I became an abusive overlord of my body. But it could only take so much before it crashed and burned.

As I progressed through my Ph.D. program, I gained an unhealthy amount of weight. I got tired easily. Energy drinks no longer worked, and my body would react violently to them, with nausea, chills, and shakes. I often caught colds or the flu. And I started to have sporadic abdominal pains, which I tried my best to ignore.

Eventually, the abdominal pains were so bad they drove me to the emergency room. That’s when the doctor peppered me with questions. As my wife sat terrified by my side, he diagnosed me with a gastrointestinal disorder and told me in no uncertain terms that I would need to change my lifestyle. No pill would fix my problem; in the long



**“I am thankful I had an early warning that I was neglecting my physical health.”**

term, eating well, exercising, and trying to minimize stress would be the only way to keep the pain from recurring and turning into something worse.

I worried that if I eased up on the gas pedal at work, I wouldn’t be as productive. But after hearing the doctor’s warning, I knew I had no choice. I stopped working late into the night, which gave me more time to relax, sleep, and prepare my own meals. I read up on dietary recommendations and began to choose nutritious and healthy foods. I also gave up energy drinks and switched to tea.

Many times, I was tempted to go back to my old routine. I placed sticky notes in my office and at home to remind myself that if I didn’t make healthy choices, I’d suffer consequences. Over time, though, it became easier, especially

once my habits became more ingrained and I began to notice positive changes in my life.

It’s been 4 years now and, to my surprise, I have not only noticed gains in my health, I have also found it easier to be productive at work. I’m no longer plagued by stomach pains and constant fatigue. And I’m able to remain alert throughout the day without having to rely on energy boosters.

My unhealthy lifestyle may not have been the root cause of my health issues—I may have become ill regardless. But I am thankful I had an early warning that I was neglecting my physical health. I’ve noticed many other scientists making similar mistakes, and I worry their wake-up call won’t come until later in life, when it will be harder to reverse the damage. Our work as scientists is important, but we can only do that work if we take care of our bodies. ■

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By Asma Bashir

## Scientist and artist

**“W**ould you say you are more of a scientist or an artist?” I frequently heard this question as I was preparing to start my neuroscience doctoral program, often after I told scientific mentors and peers that I love writing poetry. I learned to respond, “A scientist”—not because it was necessarily true, but because I sensed it would win me more respect. As an undergraduate, poetry had been my therapy, my cathartic release. But in grad school, I wanted to be seen as just as dedicated to my work as those around me, who appeared completely undistracted by nonscientific pursuits. So, I left my poetry by the wayside—but it wasn’t long before I felt a massive void in my life.

By the second year of my Ph.D., my thesis project had become all-consuming and I was starting to burn out. One afternoon, an undergraduate trainee who worked in the lab across the hall mentioned the weekly event held by the university’s poetry club, of which she was a leader. After hearing how much I enjoyed poetry, she declared, “You should come!” A few days later, I sat in a packed café, exulting in the warmth of the vibrant community.

When I received another invitation—this time to perform my own work—I couldn’t say no. I rediscovered catharsis through storytelling, writing about workplace misogyny I had witnessed. As I prepared my poem, though, I was also awash with guilt about dedicating hours to writing and rehearsing, time I could have spent reading papers and analyzing data. Still, I finished my poem and showed up for my performance. With the outpouring of love I received that evening, I knew I’d be back.

I continued to write and perform, but I still worried about appearing less than fully dedicated to my science. So, when a senior grad student in my lab whispered, “I hear you perform poetry!” I froze. Was my cover blown? My heart began to race. She went on to invite me to perform at our department’s art gala—a talent show of sorts, showcasing faculty, staff, and trainees. “By the way, Cheryl will be performing!” she added.

I was surprised to discover that Cheryl, our lab’s principal investigator, was a dancer. I excitedly sought her out, and we spoke for more than an hour about how science and art can intertwine. She explained that my skill at pick-



**“I decided to perform at the gala, for once not feeling I had anything to hide.”**

ing up patterns in experimental results was the same one I used to create rhymes in my poems. With Cheryl as a model, I decided to perform at the gala, for once not feeling I had anything to hide.

The night of the gala, I marveled at the talent on display, including stunning musicianship and visual art. Chatting with the other performers, many of whom were also graduate students, I realized many shared my concern that peers might interpret a passion for art as a lack of passion for science or, at the very least, a distraction. But over the course of the evening, I found myself at peace with the two halves of my identity, and I got the feeling others felt that same peace, too.

Since then, I have continued to embrace all of me. While completing my Ph.D. and moving on to a postdoc, I frequently scribbled lines of poetry on Post-its and Kimwipes and wrote poems during my lunch break. Some mentors and peers have seen the value of this outside interest; others have been skeptical. But when I have my own doubts, I think of my Ph.D. supervisor, and of renowned 19th century neuroscientist Santiago Ramón y Cajal, whose beautiful drawings of the central nervous system can be found in science textbooks and art museums in equal measure. They remind me that art and science can be profoundly complementary. And now, if someone asks me whether I’m more of a scientist or an artist, I very proudly say, “Both.” ■

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By Katharina Maisel

## Your peers are your pillars

**P**hone in one hand, steaming cup of tea in the other, I opened Slack and started to scroll through my favorite channels. In #food\_drink, pictures of enticing culinary creations offered inspiration (and the opportunity to drool a little). In #humblebrag, success stories brought a morning lift. Checking the app left me feeling connected to my community and ready to start the day with a positive mindset. This was totally new for me. In the past, I had avoided connecting with other scientists through online platforms—preferring face-to-face contact. But after starting as an assistant professor shortly before the onset of the COVID-19 pandemic, I had a new outlook.

Beginning a faculty position was surprisingly lonely. As I was facing the challenge of learning to manage a lab, I knew I would benefit from frank discussions with colleagues who were going through something similar. But I was the only new junior faculty member in my department. I wasn't sure where or how I would find the peer support I needed.

Years earlier, as an undergraduate student, I had benefited from the support of peers in my “living and learning” dorm community, which was composed of women in science and engineering. Being able to walk down the hall and get help on math problems I was having trouble with or code I just couldn't wrap my head around bolstered my confidence in the classroom.

Later, when I was a graduate student and postdoc, I relied on my lab-mates. We spent long hours together not only doing research, but also during coffees, lunches, and happy hours, where we talked about confusing data, frustrations with assays not working, and successes to be celebrated. Sometimes knowing I was not the only one experiencing challenges was all I needed to keep going.

During that time, I also began to see how I could take steps to expand my peer mentoring opportunities. While having lunch with one of my Ph.D. classmates, she and I commiserated about missing the support from other women that we had enjoyed as undergrads. At some point the conversation turned to “why are we complaining and not acting?!” So we came up with a plan to connect with our peers and founded the Graduate Women's Empowerment Network. The group's board meetings and events deepened my connection with other women trainees at our institution and provided a forum for support when things got tough. Without this group, I would have been lost during the last 2 years of my Ph.D. program.



**“Checking the app left me feeling connected to my community and ready to start the day.”**

When I started my faculty position, I struggled at first because I was accustomed to having peer support but I didn't have anyone to connect with who was at the same level in my department. To try to fill the gap, I set up a regular informal meeting with my more senior women colleagues. I greatly valued their perspectives and support—but I still yearned to talk with researchers closer to my own career stage.

That's why I turned to New PI Slack, home of #food\_drink, #humblebrag, and so much more. I had found the group through Twitter, which a colleague advised me to join shortly after I started my lab. After COVID-19 lockdowns began, I started to rely on it heavily, leaving it constantly running in the background on my phone and computer.

Connecting with others—whether swapping recipes, complaining about being tired of the same set of walks available near home, or sharing angst about how the pandemic would affect our careers—kept me sane, and was even invigorating and uplifting. I also learned from discussions about challenges at work, such as how to keep trainees motivated during a pandemic and ways to make research progress despite limited lab access. The support allayed any fears I had about wasting time online or struggling to connect with people I'd never met in person. The feeling of community was exactly what I and many others needed, and even led to new collaborations and friendships.

We often talk about mentoring from the top-down perspective. But I've learned that peer mentoring—whether virtual, in-person, or both—is just as important. Find your peer network pillars and lean into them. They will hold you up during the storm. ■

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By Avika Dixit

## Too tired to stay

The hashtag #GiveHerAReasonToStay appeared on my Twitter feed 1 week after I decided to walk away from academic medicine. It spoke directly to me. I'd spent much of the previous 2 years struggling to stay afloat amid the COVID-19 pandemic, the lack of work-life balance as a new mother, and the strain of chasing funding. The social media campaign, launched in September to stem the exodus of women from medicine, made me feel less alone; it helped me see that many women faced the same challenges I did and also chose to leave. But it also fed my frustration. Some of the recommendations I saw online to better support women scientists during critical career stages—such as changes to funding and child care support—might have given me a reason to stay.

Growing up in India where infectious diseases are major killers, I wanted a career that would give me an opportunity to alleviate some of the suffering. To follow my calling, I completed medical school in India before moving to the United States for 6 years of subspecialty training and two master's degrees. After a postdoc, I was promoted to an instructor position, which entailed a mix of patient care, teaching, and research. It was a soft-money position that required me to bring in my own research salary, but I was happy. I seemed well on my way to becoming an independent physician-scientist.

Soon after my promotion, my partner and I decided to start our family. I had put it off, as many women in academia do, hoping for a time when my career felt more stable. But

I realized that stability on the soft-money path—common for physician-scientists—was an elusive dream. I had my daughter in November 2019 and took 12 weeks of maternity leave. Then, just as I was returning to work and gaining my bearings, COVID-19 hit. I wasn't prepared for what came next.

My hospital was facing financial stress because all elective procedures had been canceled. My research funding and salary came from an internal grant, and I hadn't received a funding extension because of my maternity leave. I began to have an unshakable feeling that I was about to fall off a cliff as the grant's end date neared.

For more than a year, I went doggedly back and forth between manuscript writing, patient care, and rushing to meet grant deadlines. I submitted seven grant applications in 6 months, all while learning to be a new mother, coping with sleep deprivation, and struggling to secure child care during a raging pandemic. Even as restrictions eased and child care



**“I ... wonder how my career would have played out if I'd felt better supported in academia.”**

would allow me to use my skills as an infectious disease expert. Two months ago, I joined a biopharmaceutical company, where I continue to leverage my research skills and clinical experience, without the stress of securing my own salary.

I'm glad I took the leap to industry, but I also look back and wonder how my career would have played out if I'd felt better supported in academia. I might not have considered leaving if I had been offered back-up bridge funding and better child care support. I encourage institutions to look closely at the challenges early-career researchers, especially scientist mothers, face and develop policies that give them a reason to stay. We cannot afford to give up on closing the gender gap. The next medical discovery may depend on it. ■

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By Kathleen Hupfeld

## Paying it forward

**W**hen I was in high school, I typed up a letter and mailed it to the U.S. National Institutes of Health, boldly asking for “all of their research on stroke.” I was working on a yearlong project that required me to reach out to experts. Several weeks later, a thick packet arrived in the mail, along with a personalized letter thanking me for my inquiry. I was thrilled. Whoever responded could have thought, “This is just a teenager, we don’t have time for her.” Instead, they took the time to put together the information I requested. Being taken seriously boosted my confidence and reaffirmed that I belonged in STEM. Now, it’s my turn to pay it forward.

I participate in a variety of outreach activities—neuroscience demonstrations, science fairs, career panels, STEM camps. Those activities take time and energy away from my own research, as I found recently while completing my Ph.D. But they also benefit me in ways I didn’t necessarily expect, helping me grow and find satisfaction in my work as a scientist. Here are a few of the benefits.

**SHARPEN COMMUNICATION.** Kids are some of the best critics of science communication. They ask the hard questions and offer fresh perspectives. For instance, after a presentation to kids in which I showed MRI scans of astronaut brains, an eager kindergartner asked me how long it took to remove an astronaut’s brain from their skull, photograph it, and put it back in. His comment helped me see that I was not explaining my methods clearly.

I’ve carried this lesson with me when I’ve prepared other presentations, including those to other scientists. I now do a better job describing the big picture goals and methods and tailoring my explanations to my audience. For instance, when I presented my work on how the brain changes in outer space to spaceflight researchers from a wide range of fields, I took more time than usual to explain my methods and make it clear what information my data could, and could not, provide.

**GAIN MOTIVATION.** Two years into my Ph.D., I felt discouraged after several frustrating paper and grant rejections in a row. Then, a fellow graduate student convinced me to participate in our university’s Brain Awareness Week events, and my mood quickly changed. Seeing elementary schoolers’ hands shoot up—eager to answer my questions and participate in my demonstration—brightened my day and reminded me about the curiosity that got me inter-



**“The future of STEM depends on those already in science reaching out to the next generation.”**

ested in science in the first place.

Science is full of failure, rejection, and impossibly challenging problems. But I’ve found that working with kids is a great antidote to the more frustrating aspects of my job. It’s hard to stay jaded after seeing the look of wonder on a kid’s face as you pull a frozen banana out of liquid nitrogen or help them perform their first-ever dissection.

**INSPIRE OTHERS.** It’s gratifying to encourage young aspiring scientists in the same way others encouraged me. When I was in sixth grade, for instance, my science teacher pulled me aside after reading my overly detailed lab report and said, “You will make a great scientist one day.” This small comment, at an age when many girls

start to turn away from science, has stuck with me.

Years later, when I was a Ph.D. student, I encountered a similarly enthusiastic middle schooler who loved black holes. When I told her to tell me all about them, her response startled me: “Do you really want to hear about black holes? Other kids tell me they’re a weird thing for a girl to like.” This led to a lengthy back and forth, during which I encouraged her to explore her scientific passions. I don’t know whether she will go on to become an astrophysicist, but I hope our conversation left her feeling that she can, and that so many of us are cheering for her.

The future of STEM depends on those already in science reaching out to the next generation. Do what you can to share your knowledge and inspire curiosity. Along the way, you just might improve your own science as well. ■

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By Senka Holzer

## Don't panic

was interviewing for the Ph.D. program of my dreams when my potential adviser invited me to look at a sample under the microscope. I meant to grab the eyepiece, but my maneuver went spectacularly wrong when my finger got caught between the two middle buttons of his shirt. My hasty attempt to remove it only made things worse, as the shirt popped open all the way down and even his undershirt pulled out of the waist of his pants. Even now, 15 years later, just writing about it is incredibly embarrassing. But my ability to not panic in that moment landed me the position, and became one of my greatest life lessons.

It was the second phase of the selection process for an international Ph.D. program. Coming from the war-torn country of ex-Yugoslavia, I had passion for research but zero experience. The 2-day interview got off to a rocky start when another professor—the one I most wanted to work with—was so impressed by my competitor's presentation he gave her a high-five. I went to the bathroom to cry, then reminded myself there was more than one spot to be filled, washed my face, and headed to the networking dinner. There, my future adviser found me. "It's brave of you to apply with such a track record," he said. "Don't miss visiting my lab tomorrow." I wasn't sure whether to be flattered or insulted, but I knew I needed to impress him to have a chance at the program.

The next day, things seemed to go from bad to worse. The shuttle that was supposed to take me to the lab never showed up. I desperately hailed a taxi, but was stymied by a language barrier until I thought to show the driver the hospital's logo on my paperwork. After he dropped me off, I had to find my way through a block of 40 hospital buildings. When I finally entered the room full of my competitors, with large sweat circles under my armpits and my face like a swollen tomato, the professor seemed amused. That's when he invited me to the microscope and I "undressed him," as the story was retold by those who witnessed the scene.

The rest of the group was frozen with embarrassment, but I managed to keep my composure. Compared with what I had seen growing up—bombings, widespread corruption, catastrophic inflation—this seemed like a relatively minor disruption. I took charge of the situation. "I'm so sorry," I said, then turned to the science. "There is a nonuniformly stained part of the cell. Which organelle is it?"



**“When confronted with challenges, I have managed to keep a cool head and stay positive.”**

maintaining my career after my second child was born. But when confronted with challenges, I have managed to keep a cool head and stay positive—an approach that has helped me find my way through, all the way to the tenure-track position I recently secured.

My intensely difficult early experiences amid political and economic turmoil helped me develop resilience in the heat of crisis. Bad things happen, and not everything has a silver lining. But I've learned to accept what I can't control and take charge of what I can. I certainly don't have it all figured out. But I know that, whatever I am going through, and however undeserved and devastating it feels, it helps tremendously to ask myself a single question: What if this is happening *not* to me, but *for* me? ■

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Years later, I asked my adviser why he selected me for the position, even though my track record was weak and I had made a total fool of myself. "Oh, that's simple," he replied. "I was looking for a dedicated troubleshooter who won't freak out at the time of crisis. And this is *exactly* what you demonstrated during the interview." At that moment, I realized that maybe the apparent setbacks during the interview happened *not to* me but *for* me, because otherwise I would have had no chance to stand out.

Looking back, I see my whole life as a series of such experiences. I was denied Ph.D. funding in my home country as its institutions crumbled. My adviser relocated to another country in the middle of my Ph.D. My application for a prestigious grant was rejected when I was already stretched thin

By Christina Petlowany

## Crafty like an engineer

**M**y classmates were certain we needed to use steel. We were designing a wheelchair for a college engineering course and they felt only steel would be strong enough for the handheld levers that would allow the user to propel the chair with a rowing motion. I wasn't so sure. Based on my experience making sculptures with soda cans and creating jewelry with wire, I believed steel would be too heavy and aluminum would be a better option. But the student who most strongly advocated for steel worked at a bike shop; surely I didn't know better, having used metal only for crafts. A few days later, when the hefty, overbuilt steel arm kept flopping down, I felt validated. I had been right—and I wished I had shown more steely resolve in defending my position.

I was a crafty kid. Not crafty like a fox, but crafty to the point that my parents would come home braced for whatever “artistic” explosion I had unleashed that day—origami, painting, clay sculpting, sewing stuffed animals and clothes, and more. But when I enrolled in engineering in college, I put these pursuits aside. Not only was I stretched for time, but I didn't think they were relevant to my academic work—and I hesitated to highlight my “feminine” crafting interests in the male-dominated engineering environment where I already felt like an outsider. I told myself that engineering adequately fed my creative side and I didn't need the hobby.

The wheelchair project was a hint that my crafting might be important and relevant, but for the next few years I continued to avoid bringing it up in professional spaces. When I was interviewing for engineering jobs after finishing my master's degree and was asked whether I tinkered in my spare time, for example, I was sure the panelists wouldn't care about my elaborate homemade holiday cards, even though they featured lever action and moving parts. Instead, I muttered about wanting to do more 3D printing. The company extended an offer, so I felt my assumption was confirmed.

My attitude didn't change when I went on to pursue a Ph.D.—until early in the pandemic, when I felt restless and turned to crafting as an outlet. I was making a set of Dungeons & Dragons dice, shimmering blue and purple swirled with gold flakes, as a gift for a friend. While pipetting the liquid resin into the silicone mold, I made an off-hand joke to my partner that I was “injection molding”—a standard engineering manufacturing process. I suddenly



**“Maybe my crafting was something I should embrace rather than hide.”**

realized that although resin art is not injection molding in the technical sense, it shares the spirit and probably some skills. Maybe my crafting was something I should embrace rather than hide.

Soon I was seeing more examples of connections between engineering and craft that I had previously overlooked. When working on the wheelchair project, I put my sewing skills to use creating cushioned grips for the handles. The engineering “design kitchen” where my undergrad classmates and I tested our ideas was stocked with inexpensive tools including felt, pipe cleaners, and popsicle sticks—materials that would not be out of place in a craft bin, I now realized. I saw how crafting taught me to persevere when my product didn't match my

initial vision and to consider the failed creation a learning and prototyping experience, just as an engineer must.

Since then, I've built crafting back into my free time. I've also stopped hiding it from my colleagues. I mentioned my dicemaking escapades at a robotics conference and broached in a team meeting how we could gain inspiration from an interactive art experience I had recently visited. The responses were consistently positive and constructive—not dismissive or insulting, as I used to fear.

I've grown from a girl who created a makeshift vulpine friend by attaching legs to a stuffed sock and coloring it with red Sharpie to an engineer with valuable skills from my first passion. Perhaps I am crafty like a fox. I am also crafty like an engineer. ■

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By Kasper Bonnesen

## Stepping out of my comfort zone

**“D**o you want to go to Sunday brunch?” It was a question I’d never dared ask an office mate, but I was feeling desperate. I’d relocated from Denmark to the United States 2 months earlier for a research abroad experience during my Ph.D. I hadn’t made any friends by that point so I decided to ask another Ph.D. student in my office whether they’d meet up outside work. He looked at me, smiled, and then uttered “Yes.” It was a little thing, but it was a victory. I had finally conquered my shyness and dared to step out of my comfort zone.

My university encourages Ph.D. students to spend time abroad, so I planned from the beginning to work at a U.S. university for 6 months under a collaborator of my adviser’s. I was excited to travel, improve my English, and expand my scientific network. But I was also afraid that my shy, introverted self would keep me from getting to know people, leading to a level of sadness and loneliness that would eventually force me to abandon the adventure and go back to Denmark.

It had happened twice before. The first time was immediately after medical school when I took a job at a small hospital in Greenland. I had always wanted to go to the island, and the challenge of living in a small, isolated community and doing my best to help people appealed to me. But I had barely put my feet on Greenlandic soil before something felt wrong. Despite working with open and friendly colleagues, I never felt I belonged and was lonely and sad. Two weeks after my start date, I told the hospital manager I needed to go back to Denmark. The second time was during the pandemic. I moved to Copenhagen because I’d always wanted to live there and because my Ph.D. adviser was fine with me working remotely. That relocation only lasted 3 months—again because of loneliness. I missed my friends and family who lived near my university, which is less than an hour’s drive from my hometown.

When my departure date neared for my research abroad experience in Atlanta, I vowed that this time would be different. I wanted to make more of an effort to get to know people and feel comfortable in the community, and I thought it would be easier because my outgoing younger sister happened to be doing her Ph.D. in the same city.

Still, the initial few months were difficult. Finding myself in a foreign country without my habitual life terrified me. I



**“Even little interactions at work helped me feel part of a community.”**

whether it be going out for brunch, visiting a museum, traveling to another city, or going on a hike.

The advice made a huge difference—I suddenly felt much less lonely. Even little interactions at work helped me feel part of a community. Gradually, I built up a small group of friends—from both within and outside the office—whom I could call on to do things with, including the Ph.D. student I had invited to brunch. By the end of my time in Atlanta, I felt so comfortable that I actually had mixed feelings about going home.

I returned to Denmark in May, feeling fulfilled by my time abroad. I was able to travel to new places, meet interesting people, and learn new professional skills. I also came to appreciate the benefits of stepping outside my comfort zone. I encourage every young scientist to do a research stay abroad—and to have the courage to open up to people while you’re there. You never know what you’ll learn. ■

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By Olivia Lanes

## Finding a new calling

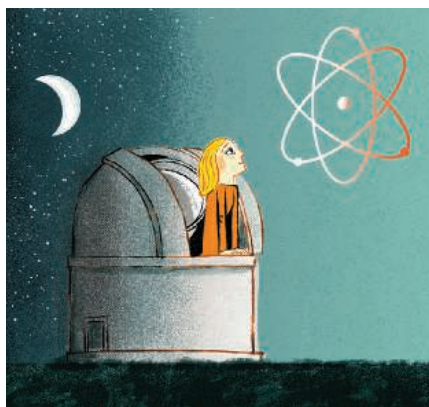
**W**hen I arrived at the mountaintop observatory, I was bursting with excitement. I was about to finish my junior year studying astrophysics, with plans to apply for a Ph.D. in the field, and I had the rare opportunity to go on an observing run. As I arrived at the tiny cabin that would be my home for the next few days, I finally felt like an astronomer. Unfortunately, the excitement didn't last. As I sat alone, staring at a computer screen instead of the night sky, pressing a combination of buttons over and over to control the telescope and retrieve data, I had to admit: This wasn't what I had imagined.

I had wanted to be an astronomer ever since my father gave me the DVD box set of *Cosmos: A Personal Voyage* when I was a teenager. Watching Carl Sagan talk about the heavens, I thought I had found my calling. But after my experience at the observatory, I had to face a new truth. If this was the astronomer's life, then the astronomer's life wasn't for me.

I returned to college on the verge of panic. I still wanted to pursue a Ph.D. to learn more about the natural world and conduct independent research one day. But where was my future, if not in astronomy?

I thought I might be better off doing research that was more interdisciplinary and collaborative. I recalled a quantum physics class I had taken and thought that field might fit the bill. My academic adviser was skeptical. I can't blame him; I was throwing away a ton of original astronomical data to start from scratch in a new field, and I only had 2 weeks left in the school year to design a new thesis project. But I embraced the challenge. As I read and thought about my potential new field, my brain buzzed with excitement—and anxiety about what my adviser would say. I put together a proposal I was eager to pursue, and to my joy and relief, my adviser approved it.

In some ways, my new project mirrored the observatory experience, as I sat for extended periods in a darkened lab, aligning lasers and shining them through a pair of slits. But being able to shape and control quantum phenomena inspired me in a way astronomy did not. I also recruited a friend to work with me, which made the research less lonely. As we talked through the project, explaining complex topics to each other and reflecting on the big picture of what we wanted to achieve, a revelation dawned: I had been drawn to *Cosmos* not because of the subject, but because of the finesse with which Sagan explained mind-blowing concepts.



**“New possibilities can be far more rewarding than doggedly sticking to a years-old dream.”**

That was the spark of inspiration I wanted to follow.

I began to try out my communication skills, working with high school physics students and tutoring in the college physics room. I got a real charge from these experiences. Even though they meant I had to work later in the lab to get my research done, I felt I had finally found my niche. I decided to pursue a Ph.D. in quantum—a field where massive breakthroughs are often barely visible to the wider world. This was my chance to be both a scientist and a communicator. During my Ph.D., I volunteered at local elementary schools and participated in other communication and outreach efforts. Sometimes it was hard to justify the amount of time they took away from my thesis work, but speaking to excited students gave me the

extra bump of motivation I needed to return to my research.

As I was completing my Ph.D., I knew I wanted to find work that let me both contribute to science and draw more people into the field. I interviewed for a wide range of jobs, including consulting work, industry positions, and even professorships at liberal arts colleges. It felt like serendipity when IBM reached out about two potential jobs, one focused on community outreach and the other on quantum engineering. I asked whether I could do both. Now, in addition to conducting research, I lecture at universities, run a summer school, and work with educators.

It's not what I imagined, sitting on my living room floor as a teenager. But as I've learned more about science and myself, I've realized that remaining open to new possibilities can be far more rewarding than doggedly sticking to a years-old dream. ■

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By Oliver Symes

## Looking for a change

**T**he alarm blared in my ear. After silencing it, I remained in bed, staring at the ceiling for another 30 minutes. My motivation to push ahead with my Ph.D. was waning, making it harder and harder to rise and face each new exhausting day. Continuing with the struggle for the remaining 2 years of my program would risk total burnout and breakdown, I realized. I needed a change. So, with great apprehension, I decided to hit the pause button on my Ph.D. and take a 9-month position at a health care charity, hoping I would return to my Ph.D. with new motivation—and new clarity.

Back when I was looking for Ph.D. positions, I only had a vague idea of what I wanted to study. I viewed the degree mostly as a means to an end—a way to secure more interesting and higher paid positions in the private sector than my master's degree would unlock. So I wasn't picky about the research I pursued. I reasoned that a variety of projects within my field of synthetic organic chemistry would provide the training and degree I wanted.

In hindsight, I should have been more selective. I ended up working on a project I was technically capable of completing and that was intellectually interesting, but over time became disillusioned with because I struggled to see how it would make an impact on the wider world.

Pandemic-induced challenges amplified my problems. I started my program in 2020, when meetings were virtual and in-person contact was actively discouraged, so I had few opportunities to meet and form personal connections with colleagues. Research became my sole focus, and when my interest in that started to falter, my project felt suffocating. It got harder and harder every day to get myself to the lab, where I endured the bench work—much of it tedious and frustrating—in a state of deep unhappiness.

I wondered whether I should have expected this level of despair, given that doing a Ph.D. is hard, even in the best of times. However, 11 months into my program, I struggled to find a single thing I was enjoying about grad school. It was clear I needed to pause and re-evaluate.

After seeking advice from a university adviser and talking with my supervisor, I decided to take a break from my program. I searched online for internships and other short-term positions in science-related roles, including those that involved science policy, intellectual property, and science writing. Ultimately, I signed a contract with the Multiple Sclerosis Society to provide support for its research team.



**“It was clear I needed to pause and re-evaluate.”**

At first, I worried I was wasting time I could have spent finishing my Ph.D. But after only 1 month in my new role, it became clear I'd made the right decision. I was able to decompress and spend my days doing a variety of tasks that were new to me. For instance, I helped the grants management team find suitable peer reviewers for funding applications, built a survey to better understand the diversity and inclusion of the society's funded research, and supported the communications team by writing blog posts. My mental health improved noticeably and I found it easier to come into work each day, buoyed by the sense that I was supporting the organization's mission to help people. The work I did could matter

after all—if I chose wisely.

After that realization, I decided I wanted to return to my Ph.D. program once my contract expired—as long as I could make some changes. I told my Ph.D. supervisor I wasn't interested in working on purely academic research. To my relief, he was supportive, and over the next few months we designed a project that better fit my interests and long-term goals.

I returned to my program last month, optimistic that this time around my experience will be different. But if it doesn't go as I hope, my charity experience has given me confidence that I'll be able to find a satisfying job elsewhere, with or without a Ph.D.

I encourage any Ph.D. student who is struggling to consider taking a break. Try something different, gain new skills, and thoroughly scrutinize whether your graduate program is working for you—because this is *your* Ph.D. and you do have the power to change it. ■

Oliver Symes is a Ph.D. student at Imperial College London. Do you have an interesting career story to share? Send it to [SciCareerEditor@aaas.org](mailto:SciCareerEditor@aaas.org).