

VIEWPOINT

Women in STEM becoming independent: Put science and discovery ahead of your ego

Priyadharshini Devarajan^{ID}, Roberta Zappasodi^{ID}, Novalia Pishesha^{ID}, Jui-Hsia Weng^{ID}, Katherine Alexander^{ID}, Yadira Soto-Feliciano^{ID}, and Ranit Kedmi^{ID}

This year at *JEM*, we are highlighting women in science by sharing their stories and amplifying their voices. In this Viewpoint, we hear from a cross section of women, across multiple research fields, discussing their science and the process of setting up a lab as an independent researcher. As well as being able to celebrate the positives of becoming an independent researcher, we would also like to use this platform to discuss the unique challenges they face as women scientists in their respective scientific environments. This Viewpoint is part of an ongoing series at *JEM*.



Priyadharshini Devarajan

Assistant Professor of Microbiology and Immunology, Renaissance School of Medicine, Stony Brook University, Stony Brook, NY, USA

It often feels unreal that my journey, which began in high school captivated by a six-page chapter on the immune system, has now led to me starting my respiratory immunology research team at Stony Brook Medicine last year. As a trainee, I absolutely loved studying the basic biology behind immune responses, but I wasn't sure how much I would enjoy the practicalities of running an academic research lab. So I tried exploring as many of those aspects as I could when I was a postdoc—I mentored students, I wrote grants, etc.—and realized I would enjoy the entire package. To manage the uncertainty of whether it would all work out, I also explored alternative careers, finding comfort in knowing I would also enjoy research in biotech if academia wasn't my path.

I always struggled with whether I was "good enough." One philosophy that guided me through each career stage is to go for it with everything you have, without worrying about how smart/capable you are or about judgment from others. My advice to aspiring independent scientists is to fiercely pursue your goals, leaving insecurities behind. Signing my offer letter the day before my son was born brought new insecurities about balancing a new lab and motherhood. What helped immensely at every stage of my career was seeking out mentorship. Don't be shy; mentors genuinely enjoy guiding the next generation. I attended every career roundtable I could at conferences and found invaluable advice and inspiration from women scientists on social media and at my institute. I also sought peers on similar career journeys on social media, at conferences, and in my own department. As a postdoc, I even connected with scientists featured in this very *JEM* section years ago. This "village" was crucial for getting me here!



Roberta Zappasodi

Assistant Professor of Hematology in Medicine, Weill Cornell Medical College, Member Researcher of the Parker Institute for Cancer Immunotherapy at Weill Cornell, New York, NY, USA

I launched my tumor immunology lab right after the COVID-19 lockdowns lifted—that is, in the lingering fog of a once-in-a-century disruption. People kept asking what it was like to start a lab in the middle of a pandemic. My answer at the time was honest, if unsatisfying: I didn't have the counterfactual. I knew it was hard, but I had no pre-pandemic benchmark for starting a lab. Only later, as the academic world began to reassemble itself, did I realize how much harder those early days had been.

Back then, the ecosystem was skeletal: minimal in-person interactions, few peers to trade notes with, and a near-total absence of the spontaneous lab-corridor conversations that often trigger novel ideas and help forge new collaborations. But over time, the environment shifted. New junior faculty members were hired, and I could finally connect with others who, like me, were building a research program from scratch.

It turns out that peer support isn't a luxury—it's structural. Yes, senior mentors are vital. But there is something uniquely valuable about connecting with fellow assistant professors, especially as you move from the comrade spirit of lab benches to your own office. Comparing notes with peers has become essential to how I make decisions in the lab and how I stay sane on the tenure track.

Looking back, one of the hidden advantages of my own transition was geography. My new institution, Weill Cornell, sits quite literally across the street from where I did my postdoc, Memorial Sloan Kettering. Physically close—yet a very new system, with a different set of rules. I had initially worried that switching institutions would complicate the process. Instead, it turned out to be the best kind of forcing function: I had to figure things out on my own, quickly. That gave me confidence—and distance. Being at a new place helped me differentiate my work from my postdoc lab's legacy and forced me to integrate into a new system. In doing so, I discovered unexpected opportunities for collaboration and fresh directions for my research program—paths I might never have taken otherwise.

If I had to offer one piece of advice to anyone starting their own lab, it would be this: be creative in your science, but be equally inventive—and strategic—in how you chart your course toward the research program you want to build.

© 2025 Devarajan et al. This article is distributed under the terms as described at <https://rupress.org/pages/terms102024/>.

**Novalia (Nova) Pishesha****Assistant Professor, Division of Immunology, Boston Children's Hospital, and Department of Pediatrics, Harvard Medical School, Boston, MA, USA**

I am an assistant professor in the Division of Immunology at Boston Children's Hospital and Harvard Medical School. My lab focuses on the engineering of nanobodies to visualize and modulate immune responses in autoimmune and infectious diseases.

As a woman, first-generation student, and immigrant from Indonesia, when I embarked down this road, I never envisioned myself leading a lab. I have been fortunate to cross paths with incredible mentors who nudged me forward, even when I could not yet see the destination. I also took time to explore paths beyond academia—including co-founding and serving as CEO of a biotech company—before returning to what brings me the most joy: creating a space where bold ideas, rigorous science, and mentorship thrive. Having received training across disciplines, institutions, and countries, this taught me to stay adaptable, resourceful, and open to unconventional opportunities as they present themselves.

The transition to independence has been both humbling and energizing. What kept me going? Pep talks from mentors, the support of my lab members, cathartic texts to and from my peers and friends, the grounding presence of my border collie puppies and husband, and a stubborn sense of purpose. My advice: Build your lab (or any career) around people who make you laugh and share snacks during late-night experiments. Anchor yourself in questions that spark your curiosity and keep you coming back, even on the hardest days. And yes—apply to as many grants as possible.

As Ki Hajar Dewantara, the father of Indonesian education, once said, "Tut wuri handayani, ing ngarsa sung tuladha, ing madya mangun karsa" (Lead from the front by example, inspire from the middle, and support from behind).

**Jui-Hsia Weng (翁瑞霞)****Assistant Research Fellow, Institute of Biological Chemistry, Academia Sinica, Taipei City, Taiwan**

I majored in chemistry in college and once believed that energy and equilibrium could explain every event. Life, of course, is far more complex. My desire to understand this complexity has driven my research into how small molecules influence whole-organism physiology, particularly in developing strategies to manage dysregulated inflammation. This sense of purpose keeps me grounded and helps me navigate the inevitable ups and downs of research. I first felt the pull toward scientific independence during an American Society for Cell Biology (ASCB) junior scientist session, where I learned the importance of having a role model. I found someone whose career I deeply admired. She put her faith into practice and approached science with fearless determination. Her example gave me clarity, direction, and a path I could truly connect with. At times, it is easy to feel lost whether in the daily demands of running a lab or under the weight of external pressures. But I always return to the questions that first ignited my curiosity. Staying connected to that original dream reminds me why this journey matters and why it is worth pursuing.

**Kate Alexander****Assistant Professor, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, USA**

Throughout my career, I have been fascinated with how gene regulation is coordinated to support life. Now, my research group is devoted to uncovering the intricate ways that nuclear speckles impact gene expression. I did not set out to be a principal investigator (PI). I did get entranced by gaps in scientific knowledge and by considering what might fill these unseen spaces. When my questions became too large for just me, I knew it was the right time to become independent. The search committees largely disagreed. My next two years were spent under the continued stalwart support of my postdoctoral mentor. I reapproached the job market knowing that I would need to improve how I communicated—I needed to convey why my research was important across systems and scales. Having a buffer for failure and space for exploration during my postdoctoral research as well as being surrounded by supportive mentors and colleagues who understood my vision was instrumental for reaching my current position. I feel immense gratitude toward those who have supported me and hope to pay it forward.

**Yadira Soto-Feliciano****Assistant Professor of Biology, Intramural Faculty at the Koch Institute at MIT, Cambridge, MA, USA**

As an assistant professor of biology at MIT and a member of the Koch Institute, my lab investigates the chromatin biology of epigenetic complexes and their role in diseases like cancer. We focus on chromatin adaptor/scaffold proteins, which are critical but poorly understood regulators of the epigenome.

My path to becoming a PI was cemented early in graduate school, where I thrived on the independence and intellectual freedom of leading my own research. Though my career goal was always academic, I intentionally varied my training, moving from chemistry to cancer biology and then to chromatin biology and biochemistry. Changing scientific environments between Boston and New York also proved invaluable for expanding my network and expertise.

Based on this, I advise trainees to, if possible, change their focus and location to build a unique scientific niche. For aspiring PIs, I share my late advisor David Allis's wisdom: "Recruit small but recruit well." Starting a new lab is daunting, but remember that your institution chose you for your problem-solving abilities and will support your success.

**Ranit Kedmi****Department of Systems Immunology, Weizmann Institute of Science, Rehovot, Israel**

When I first opened my lab, I decided to set up clear core values for the lab. During my training, I became fluent in thinking about science, designing experiments, and mentoring students and technicians, but this was the first time I began to define my leadership.

I identified three core values. First, in our lab, we bravely ask big questions. Second, we design hypothesis-driven experiments but always follow the data. Third, we put science and discovery ahead of ego. Therefore, we choose openness and trust over fear of competition. We resist the temptation to fall in love with our hypotheses—an ongoing challenge. And while we acknowledge our hesitations and doubts as human beings, we do not let them stop us from pushing science forward.

Establishing these values has been instrumental to our lab culture and in my day-to-day decision-making over the past two and a half years. I do not think the values I chose are the "right" ones for everyone—we all have different priorities, and what matters most will vary from lab to lab. But I do believe that reflecting on and defining your values can be a powerful step in building a lab and creating a meaningful scientific environment.