"Running a Research Lab Is Like Running a Small Business with a Highly Uncertain, Constantly Fluctuating Budget"

Lucina Q. Uddin

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Abstract In the interview with Lucina Uddin, we discuss how being open to opportunities can determine where you go next. Applying for faculty positions and deciding where to move to can be difficult, so it is important to think about your lifestyle preferences and deal breakers. Lucina highlights how working as teams and collaboratively is important and can be one of the best parts of working in academia. Unfortunately, there are issues in academia, such as those related to diversity. Academic roles change greatly as you shift toward leading a team—where skills such as emotional intelligence, open mindedness, decisiveness, and humility become increasingly important.

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L. Q. Uddin (✉)
Psychiatry and Biobehavioral Sciences, University of California Los Angeles, Los Angeles, CA, USA
e-mail: lucina@ucla.edu

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Chris: Can you introduce yourself and tell me a bit about your current position?

Lucina: Sure. I was born in Bangladesh and immigrated to the United States with my parents before my first birthday. I guess technically they immigrated, and I came along for the ride. Growing up, at one point, I heard the silly myth that you only use 10% of your brain, and that enticed me to go into neuroscience. I am currently a professor of psychiatry and co-director of the Center for Cognitive Neuroscience Analysis Core in the Semel Institute for Neuroscience and Human Behavior at the University of California Los Angeles (UCLA).

What was the focus of your PhD?

It's funny, people always seem to think that they have to choose their PhD topic very carefully. I would say that the only really important decision to make when going to grad school is who will be your primary mentor. I didn't know what I was doing when I started grad school in 2001 in the Psychology Department at UCLA. I started my PhD straight after finishing an undergraduate degree in neuroscience, minoring in philosophy. The truth is I didn't want to go to medical school like all my friends were doing, and I didn't really know what else to do other than stay in school. So I applied to several graduate programs in neuroscience and didn't get into any of them. I did manage to get an interview in the neuroscience program at the institution where I had just completed my bachelor's degree, UCLA.

During the interview (which I generally bombed), I met Eran Zaidel who would come to be my most inspiring mentor in neuroscience. He eventually somehow

convinced the Psychology Department at UCLA to admit me, even though they had already completed their graduate recruitment process for the year. I like to think it's because of a great conversation we had, where he asked me if I thought I could win the Nobel prize. I figured it was a trick question and said "I don't see why not." I entered his lab thinking (like many young neuroscientists) that I was going to study consciousness. I was intrigued by commissurotomy or "split-brain" patients, who have had their corpus callosum surgically severed as a treatment for intractable epilepsy. Roger Sperry (Eran Zaidel's advisor, who *did* win a Nobel prize) thought these individuals housed two separate consciousnesses in their disconnected cerebral hemispheres. So I spent the next 5 years conducting a series of behavioral and neuroimaging experiments on the neural basis of self-face recognition, the closest I could get to operationalizing consciousness at the time. Those were some of the best years of my life. It was the early 2000s, and we hadn't hit any financial crises yet. I had an NSF graduate research fellowship and a great mentor and worked in an extremely collaborative environment where I met outstanding scientists whom I'm happy to call friends to this day. Sadly, Eran Zaidel passed away during the summer of 2021. I like to think that he would be happy to know that I've since returned to UCLA as a faculty member and am carrying on his work.

As you were finishing your PhD, what were you thinking about your career plans?

Once again, I had no idea what to do after I completed my degree. I figured I would look for a postdoctoral fellowship, since that was what most people did coming out of a cognitive neuroscience graduate program in those days. I made the impulsive decision that I wanted to live in New York for a while, so I looked for positions advertised there. It was on the FSL listserv that I saw the ad that led me to my first postdoctoral position at the New York University Child Study Center, where I spent 2006–2008 learning about the brave new world of resting-state fMRI and human connectomics from F. Xavier Castellanos (another great mentor) and his group. While the work was very exciting and we felt like pioneers in those years, I'd be lying if I said I didn't start considering non-academic careers at that point. I knew the odds of obtaining a tenure-track faculty position were slim, and they were actually zero right after the global financial crisis of 2008. I went on to apply for faculty positions every year from 2008 to 2012. Yes, that's 5 years of going on the job market. In 2008, I applied for three positions and got no interviews. In 2009, I applied for 12 positions and got no interviews. In 2010 (I was actually teaching in Bangladesh at the time, which is another story), I applied for nine jobs and got no interviews. In 2011, I applied for over 30 positions and got three interviews, but no offers. Finally, in 2012, after applying for over 60 positions and going on seven interviews, I got five offers. And I was exhausted.

That's great that you finally got offers and multiple of them! Can you tell us what were some factors that helped you decide which to take?

I considered all the usual factors: money (start-up package and salary), collegiality of departmental colleagues, location of the university, etc. I also have to say that in the end, after making pro and con lists, consulting with friends and mentors, and agonizing about all the unknowns, I went with my gut. I just got a good feeling from the chair of the Psychology Department at the University of Miami (where I first started my lab), and the rest of the colleagues I met were so positive and enthusiastic. Going on a second visit to Miami in February after finishing a second visit to a wintry Chicago sealed the deal!

Can we go back to your other story. Why did you decide to teach in Bangladesh for part of 2010?

It all started with an email I nearly deleted without reading. In 2009, I was working at my second postdoctoral fellowship in Child Psychiatry at Stanford University. At the time, I had just obtained funding for a mentored career development award (K01) from NIH to examine large-scale brain networks in children with autism, and things were going well. On September 29, I received a mass email from the dean describing a call for applications for teaching fellowships at the Asian University for Women (AUW) in Bangladesh. Stanford had partnered with AUW to support teachers to spend some time over there and was running an exchange program with students from that university who would get to spend time over here. Now, I will be the first to tell you that I don't believe in fate or any higher power, but I nearly fell out of my chair when I saw that email. As a person from a country that many people have never heard of, you can imagine my surprise at receiving such an email, that seemed almost perfectly targeted to me. When I looked up AUW, I was further shocked to find that it was located in Chittagong, *the city where I was born*! It was just too much of a coincidence for me to ignore.

Of course, there were several complicating factors to consider. For one, I had just gotten the notice of award for my K, so I was supposed to be working on that. Also I was still actively and increasingly despondently on the job market, as previously discussed. I worked in the lab of Vinod Menon at the time, and when I mentioned the teaching opportunity to him, he suggested that it might be possible to delay the start of the grant for a few months, take a break from research, and accept the teaching job. Maybe he was so accommodating because he is also originally from South Asia, and he understood that I couldn't really ignore a chance to go back and serve in the country of my birth. Many countries in South Asia, especially third-world ones like Bangladesh, experience a "brain drain" whereby talented people want to leave the country to pursue academic and occupational opportunities not available

locally. I think some part of the immigrant mentality always involves a feeling of guilt, of abandoning family and culture and home. I was too young when we moved to the United States to really understand the struggles my parents faced in those early years after arriving here. My father was a professor and founder of several colleges in Bangladesh. When he had the opportunity to pursue a PhD in the USA, of course, he jumped on it, even if it meant starting his career from scratch in his mid-30s after immigrating. I grew up with the idea that if I was ever presented with the opportunity to go back and really give back, I would do it. In countries with very corrupt politics like Bangladesh, foreign aid in the form of money often gets diverted to the pockets of politicians and never reaches its intended target. So, all in all, I thought that if I could physically go there and teach young women in a classroom, that would be something that could not be taken away from them, or from me.

Can you tell us a bit about what day-to-day life is like in your current position?

Pre-COVID, day-to-day life involved a lot of travel. I'm not proud to admit that my carbon footprint was large: I was probably getting on a plane two to three times per month. It's hard to say no to invitations to speak at conferences, give departmental colloquia, serve on study sections, or basically anything else when you are an early-career researcher. I think I still have the mentality that I have to say yes to everything in the off chance that it could somehow lead to a career-enhancing opportunity. So yes, I was traveling a lot. Nowadays, I've welcomed the opportunity to stay put

for a few months, avoid jet lag, and catch up on reading and writing (both academic and non-academic).

A typical day at the university would involve meetings, meetings, and then more meetings. I guess that's one reason I enjoyed traveling so much, to have an excuse to miss them!

Do you think that someone who just finished a PhD might not be aware of all the different aspects of the job of professor?

Running a research lab is like running a small business with a highly uncertain, constantly fluctuating budget. I've always subscribed to and been a huge fan of *Harvard Business Review*, which consistently provides great articles on management, leadership, motivation, and practical matters when it comes to business.

The other thing I have found interesting to note is that the skills that make you a great PhD student or postdoc do not necessarily overlap with those necessary to run a successful research lab. As a trainee, your technical skills (e.g., coding) and in-depth disciplinary knowledge are constantly evaluated and critically contribute to your career progression. As a PI, you will mostly be concerned with two things: writing grants (that get funded) and writing papers (that get published). To do those things, you'll need to successfully motivate a team of individuals with diverse skills and backgrounds. I think it has something to do with the quote: "If you want to build a ship, don't drum up the men to gather wood, divide the work, and give orders. Instead, teach them to yearn for the vast and endless sea." I see my job as a PI as primarily to channel the motivations and talents of young, enthusiastic scientists into tangible, impactful contributions to science. This involves a lot of delegation and mutual trust among lab members, which you as the PI must cultivate. The skills that I think are therefore most critical in a PI are emotional intelligence, open-mindedness, decisiveness, creativity, and a high tolerance of uncertainty. And of course, a healthy dose of humility and the ability to learn and quickly bounce back from rejection.

If someone currently finishing their PhD was considering a similar position as you have now, how might they decide if it would be a good fit?

I think many people are surprised (either pleasantly or unpleasantly) to find that being a PI is very different from being a trainee in someone's lab. To decide whether this might be a good fit for you, consider whether you enjoy and are good at doing the things that are expected in the role including writing, fundraising, traveling, giving presentations, mentoring, science communication, training the next generation of scientists, and teaching courses. It turns out I personally love doing most of those

things, but you have to be honest with yourself about whether or not a lifetime of those activities will suit you. I always encourage my students to seek out summer internships in industry to explore possible options outside of academia, and as a result, many of my former trainees have found success in data science and user experience research (getting paid much better than I do as a professor!).

If someone was interested in pursuing a similar academic career path, what would you suggest they do to better prepare themselves?

First, set realistic expectations and goals based on your true motivations and lifestyle preferences. I always say that to stay in academia, you will probably get to choose two out of three of the following (at best): (1) a job/career/position you really like, (2) living in the city/part of the world you really want to live in, and (3) living near the person/people (e.g., significant other, family) you want in your life. It's really hard to go for all three with the constraints of the academic job hunt, so figure out what is a deal breaker for you.

Once you have mentally prepared yourself, the hard work of building up an impressive CV begins. Although papers and grants count for a lot in academic settings and everyone knows that, I think it's also important to establish yourself as a team player, someone who others see as a competent collaborator and good mentor, an enthusiastic champion of open science and diversity, and in general a "good sport." No one wants to hire an asshole.

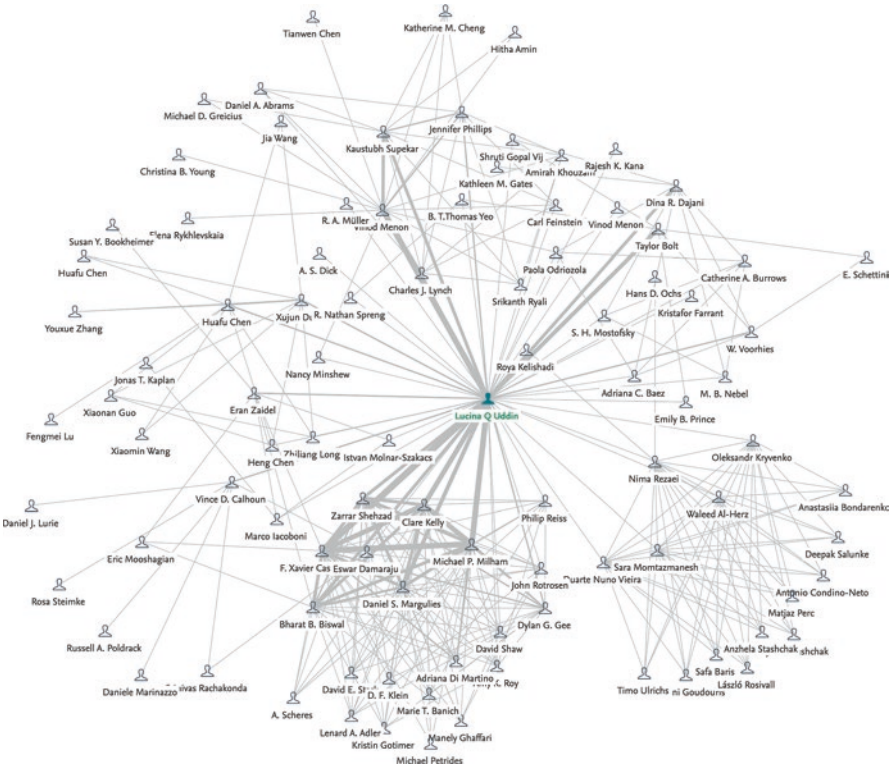
Of course, even doing all the right things is no guarantee that the well-deserved role will be available when you wish to accept it. See above (set realistic expectations), and have a plan B. If I weren't a scientist running my own lab, I would probably be working in science communication or journalism, perhaps with a side stint as a yoga instructor or high-school cross country coach. If I were independently wealthy, I'd be writing science fiction novels or maybe taking a stab at stand-up comedy (I did it once and it was fun!).

Do you have any suggestions on how to balance being a collaborator and team player versus establishing yourself as an independent scientist?

When you are first starting out in academia, you might be coached that you should avoid the "collaboration penalty." That is, in faculty hiring and promotion, sometimes scientists who are seen as merely collaborators rather than independent generators of new knowledge get penalized. This is an unfortunate old school mentality that glorifies the lone scientist, who in reality does not exist. We all work within

teams—the only difference between those seen as "merely" collaborators and those viewed as solitary geniuses is the credit that the rest of the team gets for their contributions. Personally, when I see that a PI is the sole author of an empirical neuroscience manuscript, I often wonder whether that PI *really* single-handedly conceived of the project, collected all the data, conducted all the analysis, created all the figures and tables, and wrote and revised the manuscript. If they did, good for them! But more often than not, I see PIs who do not give appropriate credit (in the form of authorship) to trainees who clearly contributed to a project. I prefer to give credit where credit is due, and when in doubt, err on the side of including more authors to fairly acknowledge everyone's contribution. Did an undergrad collect data that went into the paper? If so, in my opinion, that undergrad should be listed as co-author.

I love collaborating. The majority of my publications in recent years have been co-authored with scientists from around the world. My collaboration network is large and continuously growing (see below). I prefer to be involved in team science whenever possible, as I find it is the best way to conduct the most robust, impactful, interdisciplinary research. Over the years I have been involved in a variety of funded and unfunded research collaborations and have contributed to teams of varying sizes including individuals with backgrounds in psychology, neuroscience, computer science, physics, medicine, electrical engineering, and philosophy.



That being said, there is still the need to establish one's independence and demonstrate which aspects of your research program are uniquely yours and which are team efforts. To do this, I would advise writing sole author reviews every once in a while to establish your voice and your niche. This is especially important for women, who are often given less credit in collaborative projects due to gender biases that are entrenched in our society. When you are the sole author on a review in a journal that is well regarded by your community, there is no question that the ideas came from you.

What do you like most about your work?

The opportunity to engage in exciting collaborations (see above) and travel! I was probably traveling way too much before the pandemic, but I always enjoy exploring parts of the world for the first time and being exposed to new cultures and foods. I also love the flexibility that comes with academia. Last year I was on sabbatical. What other profession pays you to take a break from your daily work routines and just think for a whole year (every 6 years)?

I also truly enjoy mentoring others, and I guess I'm not terrible at it—in 2020, I won the University of Miami Department of Psychology Outstanding Faculty Mentoring Award. I think mentoring is the most important thing we can do as scientists. Sometimes, it just takes a little bit of encouragement, sharing of resources, and networking to get to the next level, and it always makes me happy when I'm able to do that for up-and-coming researchers. In addition, I always learn a great deal from my mentees; it really is a mutually beneficial thing.

What do you like least about your work?

The fact that academia is not a pure meritocracy, no matter how much people insist that it is. Since there are so few faculty positions available, biases always come into play when decisions are made regarding who will get those coveted positions. The same goes for successfully applying for grants, publishing in high-impact journals, getting speaker invitations, and everything else where there are gatekeepers. And guess who always seems to get the short end of the stick whenever gender and racial biases come into play? Just like the rest of society, academia is biased and structured in such a way so as to perpetuate inequalities.

One thing that I have found particularly exhausting over my 20 or so years in academia has been the extra work and expectations placed on women of color. There are three main ways in which this manifests: (1) We have to be at least twice as productive (scientifically) as our non-minority colleagues to even be taken seriously as a scholar in the first place; (2) we feel personally obligated to informally mentor and in other ways assist other under-represented junior scientists who

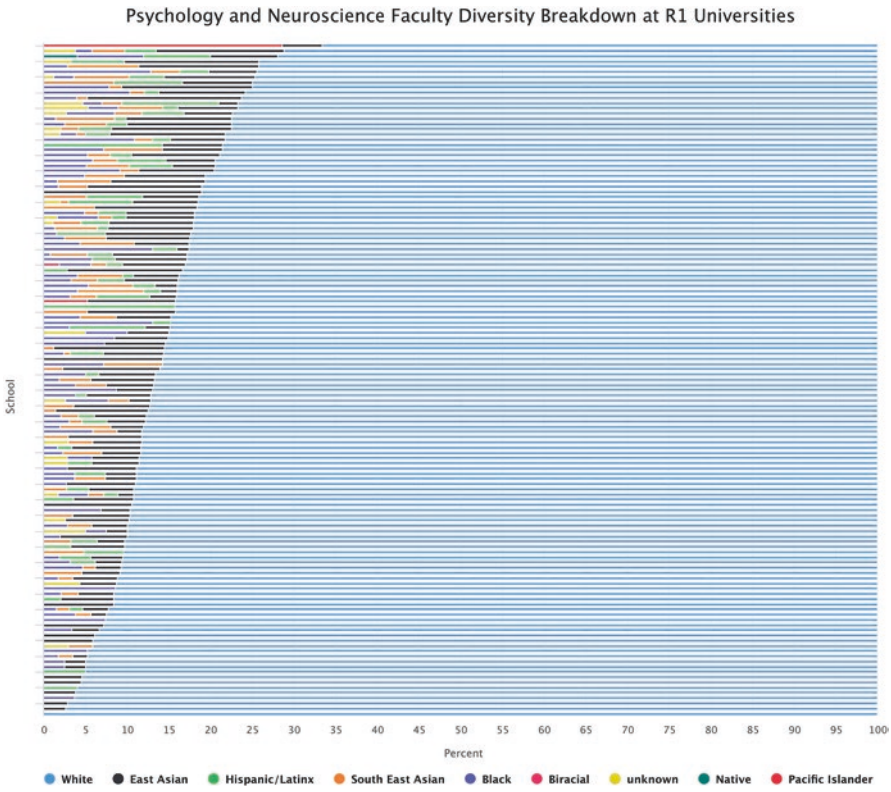
sometimes see us as their only allies; and (3) we are expected to formally participate in (or in some cases create, maintain, implement, or expand) diversity initiatives every time the establishment decides it is in their best interest to respond to a given social justice issue.

I think this is an important ongoing issue in academia. Do you have any suggestions for websites/resources that might be helpful in giving others more direction in how they can help contribute to diversity initiatives?

There are so many resources out there now that I don't think the problem is that people are unaware of these issues. The problem is that a large proportion of those with the power to enact antiracist policies do not wield that power. I'm a big fan of Toni Morrison who said "If you have some power, then your job is to empower somebody else." I've made it a personal mission to use every bit of power conferred to me by my positions to do exactly that. I lead my own lab in such a way so as to empower trainees from diverse backgrounds to find their scientific voices. I try to engage with every committee, society, and editorial board that I am a member of with the same philosophy.

I think in general the OHBM Diversity and Inclusivity Committee has done great work in the past few years toward embracing diversity initiatives (https://www.ohbmbrainmappingblog.com/blog/seeds-of-change-within-ohbm-three-years-of-work-addressing-inclusivity-and-diversity). As the program chair for OHBM 2019 (back when we still had in-person conferences), I worked with the program committee to ensure gender and geographic diversity among the speakers and organized the first diversity symposium. As a senior editor of several journals, I try to balance the reviewers I invite so that they are not always from the same gender, country, or career stage. I recently published an opinion article on this topic with a colleague, entitled "Revising evaluation metrics in academia to dismantle privilege."

This great post by Sade Abiodun on Twitter makes it clear that these types of revamps are long overdue.



You see what I did there? I used my platform to draw attention to an important social justice issue, because I have the power to do so :).

Based on your journey, what is some advice or suggestions you would want to pass on to someone who's currently finishing their PhD?

If you are reading this in 2022, these are unprecedented times. If you are reading this in the future, I hope you will say "Wow, that was the worst ever, but now things are fine!" Go easy on yourself. If you don't have a concrete plan, who can blame you? It's hard to predict what new obstacles the next month will bring, much less the next 5 years. Accept that there will likely be some delays to accomplishing your life goals. Sometimes, unexpected insights come from forced idleness.

Is there anything else you'd like to tell someone reading this interview?

Forget everything you have just read! The truth about advice is that it only applies if your own personal circumstances align very closely with those of the person giving advice. I find that this is rarely the case. Still, I think we all love to tell the origin stories about ourselves, so I really appreciate the opportunity to do so here. If anything I've said here rings a bell for you personally, then I'm happy to have reached you. Now go forth and manifest the version of your career that brings you the least misery!

Thank you so much for sharing your experiences and perspectives with us here. It is very much appreciated!