Pursuing a Ph.D. and postdoc as an international scholar

Mentoring, leadership and advocacy

Unexpected career twists and turns: how to keep an open mind!
Vishal, thanks for sharing your journey with us. We would love to learn about your background, including where you grew up.

My name is Vishal Yadav and I use he/him/his pronoun. I am currently a 6th year Ph.D. student in the Department of Chemistry at JHU. I grew up in India and to be more specific in the eastern part of India, in a city named “Kolkata” (not Calcutta, we got rid of that in 1947 LOL!). Kolkata used to be the capital of India under British hegemony and it is often called the “The city of Joy”/ “The city of Love”/ “The city of cultural hub.” Kolkata is famous for its festivals and everything related to that such as food, ethnic, and social gatherings, etc. It is also called “Motherhouse” of the country as Mother Teresa belonged from the city and still holds her legacy. The city values and holds a very high standard for education which has been reflected in past by looking at the connection of most Indian Nobel Laureates with Kolkata.

Your career journey has had lots of unexpected twists and turns. Tell us about how it’s going so far!

Growing up as a kid, other than the common dream most of us have about being an astronaut and going to space, I wanted to be a doctor which is also the second common dream but it’s easier than going to space, I guess. But I didn’t know life had a whole different plan laid out for me. Throughout my entire school life, I hated Chemistry so never saw this twist coming!

Long story short, in my undergraduate degree, I pursued Chemistry as a major and Physics and Math as minors from University of Calcutta. After finishing, I decided to move out from the state and explore some national-level colleges for my master’s degree. I moved to the completely opposite side of the country in Mumbai (“the city of Bollywood”/ “the city that never sleeps”) and pursued my Master’s degree in Chemistry from the Indian Institute of Technology, Bombay (IIT Bombay or IITB).

That was my first time stepping outside my comfort zone, my hometown, and moving away from friends and family which left me with a lot of homesickness. During my first year of the Master’s degree all I wanted was to go back to Kolkata and pursue my Ph.D. there. But again, I did not know what surprises were waiting for me. As a low-income and first-generation college child of my entire family, going to a top college like IIT Bombay was already a huge deal for me, and expecting more was just a daydream for me!
Flying high: In one of the career seminars at IITB someone said metaphorically, “you can see the JFK airport or Toronto airport or Munich airport from the rooftops of IITB.” First, it didn’t make any sense to me geographically (haha) but I realized what it meant eventually. In 2015, I received an email saying, “You have been selected as a summer intern at University of Western Ontario, London, Canada.” It took me some time to process the whole thing that I am actually going to study abroad which has been always an elusive idea for me and it was happening right there. After that internship in the 2015 summer, I fell in love with the western side of the world and decided to apply to western colleges. After numerous applications, I got several offers of admission from Germany, Spain, Canada and the United States. It was not a very difficult decision for me to make when I got the email from JHU “We are pleased to inform you that you have been selected . . .” into the Johns Hopkins Inorganic Chemistry Department. This was something I always had to dream about to be a part of.

In the land of United States: I came to Baltimore in 2016 Fall to pursue my Ph.D. here and I have been working with Prof. David Goldberg since then. It has been an amazing experience to be part of JHU Chemistry and JHU in overall. My research has been focused on solving problems in the area of “metals in biology” and we call ourselves “synthetic bioinorganic model chemists.” Most of the enzymes in biological systems are composed of metals such as iron, manganese, copper, etc., and as an inorganic chemist, we try to understand how these metals play a major role in different biochemical transformations.

As you navigate your journey through graduate school, what inspires you day-to-day?

When I look around the world through the lens of newspapers, TV or other media I can see that a big part of population are suffering; people are stressed for food and housing. Another big part of people is fighting with themselves to be able to enjoy their work. They dream their work could be their passion, too, and not just for money or paying bills. Then when I look at myself, I find myself privileged enough to be stressed about science and discovery – the science which can make this world better. What can be a better time to talk about how we realized science is the only one solution we have after this catastrophic pandemic? I feel lucky enough to be able to get to do what my passion is.
What brings you everyday joy and fulfillment?

The show Friends and golden retriever video clips throughout the day is my fuel of keep going – literally EVERY 30 MINUTES . . . (hahaha). I think other than pursuing the science I love and being a detective in a molecular chemistry world, I also enjoy mentoring a lot. I really enjoyed my TA time with JHU undergrads and got to teach them so many things in a synthetic chemistry lab and I ended up learning a lot too. I have mentored several undergraduate and graduate students in my lab as well which gave a very unique experience to learn more too. I enjoy scientific discussions with my lab mates a lot. I am an extremely outgoing social person and I enjoy interacting with people on different levels. In a nutshell, science and socializing during the day and a solid workout, good sitcom and some good Indian food at night brings the biggest joy and fulfillment in my mundane Ph.D. life. Oh another thing, I live for RuPaul's drag race!

April, 2021
Kolkata, Holi Celebration
What activities have you pursued alongside your academic work?

In the first few years of graduate school, I was very much wrapping my head around classes, TA responsibilities, qualifiers and of course the enormous pressure of research. However, later in 2019, some personal experiences made me realize that I want to do something for society even if that contributes very little but keeping my head up with the attitude that “little drops of water make an ocean.” I started serving as a department representative for the Graduate Representative Organization (GRO) and started understanding that there are a whole lot of things out there to do other than sitting in the chemistry research laboratory. I also started working with LGBTQ+ life office and got to work with Dr. Demere Woolway (Executive Director for Inclusive Excellence Education and Development, and formerly the inaugural Director of LGBTQ+ Life) which has been an absolute pleasure to me.

How did COVID-19 reshape your activities? It sounds like your advocacy work intensified.

2020 is never going to be a happy memory to any of us but for me the pandemic gave a whole lot of free time that I could use to really invest myself in student organization work. I took a step-up in my position in GRO and got elected as a Health and Wellness Chair which gave a lot of opportunities to interact with many higher administrative figures at Hopkins and helped me to learn about and advocate for physical and mental health services at JHU for students.
As an international student, can you comment on any challenges you’ve faced while being away from home?

Everyone is close to their parents, and they love them, but my relationship with my mom has been a little exceptional in a very good way. We are the best friends to each other, and we share everything with each other. So yeah, staying away from her by 8000 miles has been the hardest things I have ever experienced. It has never been easy being away from family, and I am sure all international students can relate to that. But on the other hand, I must say, I have had a life-changing experience of being independent and finding myself in a totally new way in a land where no one knew me. People who know me well, they know I LOVE TO TALK.

What hobbies do you enjoy?

Hobbies: Dancing, dancing and dancing . . . hahaha! I was actively involved in Bollywood dancing during my undergraduate and master’s college. However, graduate school took a lot of time, and I couldn’t follow-up on dancing so much. I have always dreaming of learning western dance forms and I remain enthusiastic about that. Let’s see when life gives me the space and time to get back to dancing. Other than dancing, I have discovered myself very passionate about fitness lately and I spend good amount of time with different types of home workouts. I also enjoy calligraphy and spending my free time in watching a lot of TV shows and reading mystery novels.

January, 2020
Kolkata, Friend’s Wedding Ceremony
Hanging out with friends gives me an unexplainable joy. I do like my own time with myself, but I am always ready to do something if I am with friends. I have been often called “the glue factor” of our friends’ group as I always bring everyone together since more people are more fun. That said, it wasn’t easy for me to start from scratch and make new friends. However, making friends is probably one of the flawless traits I have which has given me a chance to make a lot of new friends from different parts of my world. I have learned so much about them and their country and culture. But yes, overall, although I miss my friends and family a lot back in India, I do appreciate the new friends I found here and all the new experiences I had so far personally and professionally.

Your time at Hopkins is nearly complete! What’s next for you?

I am going to be a postdoctoral research scholar at Penn State University and hoping to start next year spring or summer. I think for me the biggest challenge was the funding as being an international student I am not eligible for most of the major funding sources such as NIH or NSF so I had to make sure the research groups I want to work they have funding for me. I had started applying a year ago from my tentative defense timeline. So when I started applying for a postdoctoral position I classified my applications into three different categories which are relevant to my current field: 1. Inorganic Chemistry, 2. Organic Catalysis, and 3. Enzymology. Based on these three fields, I categorized research groups into different tiers. My ultimate goal was to have at least one offer in each field so that I can choose which field to go into when the time came to accept an offer. Long story short, that plan worked out really well for me and I had an offer in Organic Catalysis from U of Wisconsin Madison, Synthetic Inorganic Chemistry from Caltech and Enzymology from Penn State and these are one of the best research groups in their own respective field which made it extremely harder for me to pick one as everyone in my field told me “you cannot go wrong with any of these options, just find out what you wanna do on a day to day life” and that’s what I did – I went with the science that I am most excited about and didn’t let anything else influence that decision.
What are your long-term professional aspirations, and what steps are you taking to achieve them?

I have been very clear about one thing throughout my graduate school journey – I love science and I love being a part of a scientific project. Speaking of that, academia or industry are my two main go-to options. I understand pros and cons in both areas, and this is probably the hardest decision I feel like I would have to make in near future. For now, I am keeping my eyes and options open without being blindfolded by the thought of a winning a Nobel prize in academia or earning the paychecks in industry (haha).

I have been always surrounded by academic people so it is not hard for me to get to know the flavor and different experiences in academia. The tough one is industry as I have barely had any exposure to that. But PHutures has done a great job in bringing industry people for its webinars which gave me a great opportunity to network and get to know people from industry backgrounds. For now, I am just gathering all the information and storing it in an organized manner. I will weigh what suits me the most and, most importantly, will listen to my instincts based on the information I will have available.

How has JHU supported your professional development?

Hopkins has set a great platform for me where I could get involved in multiple student organizations, and I learned a lot by interacting with people from various fields. I believe that listening is important when you are trying to network. I have been extremely grateful to my supervisor for the enormous support and valuable discussion he provided when it came to taking a big academic step for me. His believing in me gave me so much confidence to move forward.

Also, the Department of Chemistry at JHU is one of the most comforting workplaces. I felt like as it has been very easy to approach anyone for help which. It’s been a great professional setting to work in.

And last but not the least, I want to really thank Dr. Roshni Rao for taking professional development for graduate students to a whole another level by providing any kind of 1-1 support or by organizing numerous networking events. This has been a pleasure for me to be a part of not just JHU Chemistry but the JHU Homewood entirely as well.
"Winning is not about being born with talents, it's a circle of adoption. Adopt yourself to become a better version every single day while you stay true to your own self."

VISHAL YADAV