

Building My Research Lab in India

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Summary

What I have learned from my experience is that one needs to have immense amount of patience and perseverance to survive in academic research. The little moments of happiness that come in between times of failures should be fuel for your survival during tough times.

About

Dileep did his Ph.D. in protein crystallography from Department of Biological Sciences, National University of Singapore (NUS, Singapore) with Dr. Swaminathan K. He did his first postdoc in the area of chromatin structural biology from the School of Biological Sciences, Nanyang Technological University (NTU, Singapore) with Dr. Curt A Davey and his second postdoc from Novartis Institute for Tropical Diseases (NITD, Singapore) with Dr. Christian G Noble. After spending 11 years in Singapore, he moved to Bhubaneswar in December 2012 to take up his first job in India, as a group leader at the Institute of Life Sciences.

After obtaining my PhD in protein crystallography from the National University of Singapore (NUS), I was quite inclined to pursue the academic science career path as I loved every aspect of being a researcher and particularly enjoyed teaching and mentoring. As soon as I completed my first postdoctoral training from Nanyang Technological University, Singapore (NTU), I started applying for faculty jobs in India. I chose India not just because it is my home country, but also because I always wanted to bring back my exposure and knowledge to set up a lab there.

- *Side Note: In my postdoc, we were looking at the interaction of some protein factors with nucleosomes. In the process, we ended up solving the structure of nucleosome with '601' DNA (a DNA with very high histone octamer binding affinity and a favorite for nucleosome biochemistry researchers). It was a real learning experience and more like a second Ph.D. to me.*

However, it wasn't easy to secure a position then and though I was quite disheartened by the lack of responses for my applications, I learned that I needed to gain more experience to strengthen my resume and also build my network in India. I shifted my focus to applying for positions in Singapore and landed a pharma job in Novartis Singapore, quite contrary to my original planning of sticking to academia. Unexpectedly this turned out to be the best thing that happened in my career growth.

At Novartis, I was exposed to a completely different work culture, which I loved, and I acquired essential managerial skill sets. The experience also helped me hone my organizational and mentoring skills. Meanwhile, I was also able to bring out couple of publications from my PhD and previous post-doctoral work which helped strengthen my resume for an academic job. I felt truly ready to pursue my dream job in academia.

- *Side Note: I knew no one from India in the area of my specialization and had no clue regarding what the different Indian institutes focus on. Hardly anyone acknowledged my application and those who did gave a standard reply saying they would get back to me if I got shortlisted for a position. Most communications ended there. I was losing hope of getting into Indian academia and joined Novartis Institute (NITD, Singapore) for my second postdoc, hoping that would help me come back to India at least for an industry job. I was never a fan of industry job, perhaps because of the stigma associated with non-academic jobs. Surprisingly, my brief career there shaped my skillsets as a manager. Had I moved back to India as a faculty before my job with Novartis, I would have been a half-baked mentor with no clear approach towards any project.*

After an array of failed applications, I finally heard from the director of the Institute of Life Sciences (ILS), Bhubaneswar, India. Although Bhubaneswar is nowhere close to my home town, Cochin, in Kerala, I was quite enchanted by the fact that in 2012, Bhubaneswar looked like the Cochin I left in 1999; green, peaceful and welcoming! I had no second thoughts on taking this offer despite hearing a lot of negative reviews about the place and work culture. I knew that this offer was what I have been looking for and all that mattered to me were the people and the freedom I had in setting up my own lab. I was able to work on a novel idea that combined all my research experiences so far, which is to study the interaction of specific viral proteins with host chromatin. In fact, once again it proved to be a great decision I made on my gut feeling as Bhubaneswar proved to be a growing science hub with talented scientists and friendly, warm people.

- *Side Note: ILS is primarily focusing on infectious disease research, and it was perhaps my label as a postdoc from Novartis that caught the attention of the then director of ILS. I wanted to continue studying chromatin because I have always felt that structural biology projects dealing with complexes like nucleosomes can prepare graduate students better for the challenging projects that they will pursue in their future research careers. So, I came up with a plan that combined the themes of infectious disease and chromatin structural biology. I proposed to study the interaction of specific viral proteins with host chromatin. The theme was well taken.*

My exciting journey with ILS as a scientist began the day after Christmas 2012. In the beginning, things seemed wonderful including the funding status. Though it took about nine months for me to get a proper office space (in the first few months I used to sit in the library), I utilized that time to plan setting up my lab. I ordered smaller equipment

and consumables for the lab and also took time to write some project proposals for funding. Our group which we now call as DVasu Lab took off with one PhD student and a technician in September 2013.

There were several challenges along the way. The slow pace of 'anything and everything' was very bothersome initially. In the beginning, consumable orders were centralized and used to happen less frequently – 2 to 3 times a year! Additionally, we did not have all the equipment needed for projects that we do, and we often had to travel out of the city for even simple biophysical experiments. With all the problems that we face with respect to infrastructure, expectations are not any less on our science and projects. That naturally brings a lot of frustration, especially when things just do not happen as expected.

But then, I experienced immense satisfaction when things worked after all the efforts. Purchases have now become more regular, thanks to the effort of our newer colleagues and the support of our new director. In effect, it took four years for us to get our first publication. Though it is a small piece of work, it became a real boost to the whole group. Now I have completed five years with ILS and my group has grown to thirteen members – two MSc project students, six PhD students, three postdocs and one lab technician. We have never had a planned approach to hiring. Whenever we got the right candidates for our team, we have always tried to accommodate them and we have been lucky so far.

What I have learned from my experience is that one needs to have immense amount of patience and perseverance to survive in academic research. The little moments of happiness that comes in between times of failures should be fuel for your survival during tough times. As a group leader, I take inspiration from the positive atmosphere around me, mainly the happiness I see on the face of my group members. The difference I see in me as a group leader and mentor is that I care more about my team than myself. Acknowledging one's good work and not criticizing for simple mistakes has helped me a lot in keeping people together. Being a mentor is truly a great privilege and an awesome responsibility.