

Thematic paper

"Dreams and Reality - Is the grass always greener on the other side?"

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Abstract:

Post doctoral positions are generally sought after, by fresh or mid-career doctorates. Many early stage researcher leave for greener pastures, in search for a better life. Realities of post doc careers are quite harsh than perceived. Poor working conditions with benefits offered, puts off many, from staying in research field, in the later years. Many leave their science career completely, due to lack of suitable avenues after completing post-doc. Many more stay post doc forever amidst of blissful ignorance. This article addresses and creates awareness surrounding the post doc issues.

Key Words: Post Docs, opportunities, challenges, avenues.

Disclaimer:

The name of the characters mentioned in this article has been changed to protect their identities. The names of universities are also fictitious. Please use discretion in reading this article and authors are not responsible for any damages, which extends even to third parties.

PROLOGUE:

"The Blue-eyed Boy from India"

Arjun was a brilliant boy right from his childhood. In the earlier years of school, he was always "the chosen one" by his teachers to perform the duties of Class – Prefect, not only for his well-mannered demeanor but also for his excellent grades in exams. The teachers had huge faith on his abilities and remarkably enough, Arjun never let them down. His parents, both of whom were working as Govt. employees, saw the true bearer of family tradition in their son, as many of their relatives were so called high class "foreign-returned" natives and some were even NRIs. In due course of time, in both board secondary & higher exams, Arjun managed to secure a position in the 'National Scholarship' merit list and much to the pride of his parents and envy of unsuccessful relatives and friends, went on to study Biotechnology in one of the most renowned Institutes of India.

Years flew by as Arjun continued to do well in exams and always managed to secure a position among the top 5 students in all the semesters and eventually secured the 3rd rank in the whole University in graduation. The 1st and the 2nd ranks were occupied by Arjun's friends only, who were his best pals cum biggest competitors in those under-grad years.

As is the custom with most rankers of Indian Universities, Arjun, along with his fellow rankers had already started working towards their childhood dream of studying in Foreign Universities. They went to British Council offices, took special classes for the TOEFL, read the latest trends of Research in fields of Biosciences and through social network sites be-friended with foreign students studying these subjects in Foreign Universities. By the time, they were giving their Masters exam, almost all of the aspirants had cleared their TOEFL and GRE and

had already sent applications to some of the Foreign Universities of their choice. However, this time Arjun had a less fortunate time in finding the right university for his Doctorate. The universities which he liked were not offering good amount of scholarships and Arjun being from a middleclass background, could not afford to take a chance without a full scholarship offer.

His friends started setting off for their foreign degrees one by one, while Arjun ardently kept on applying to the universities one after the other. He was getting disheartened slowly but kept up his flame of hope alive nonetheless.

It was early June of 2005 when one day, six months after Arjun's final thesis submission of MTech, his Dean Mr. Ramamurthy called Arjun to meet him personally in his office immediately. Skeptical about the subject of discussion Arjun turned up on time and was greeted by his Dean smiling from ear to ear. It had happened so that one of Arjun's many journals published in a science magazine had caught the attention of a senior scientist working in University of California who was looking for a Research Associate (RA) for one of his ongoing projects. The scientist Prof. Nathan Knoll had hence contacted Arjun's university to know whether Arjun would be interested for the same and also asked for his credentials.

Arjun could not believe his ears...!!! He felt as if he was dreaming. At last, he now can live his dream!! After recovering from the initial shock, Arjun completed all the necessary formalities in lightning speed, with a little help from his Dean Mr. Ramamurthy, who loved Arjun a lot for his dedication and sincerity.

Towards the end of August, Arjun landed on the ground of USA, the land of his dreams. On reaching the University Campus, he was warmly greeted by Prof. Knoll, who was to be his mentor for the next 3 years.

The years flew by like a dream. Apart from a few cultural shocks, Arjun was thoroughly enjoying his fellowship years. Not only was the RA grant covering all his education expenses, but it was also allowing him a comfortable life of a Research fellow in USA. And it was here that Arjun started dreaming of staying in USA even after his PhD, as a Post-Doc fellow just like quite a few of his friends and seniors there.

It was Mid June of 2008, when one fine morning Arjun received his Doctoral Degree from the hand of the University Chancellor, amid huge applause from the spectators of the Convocation. It was an out-of-the-world experience for him and his parents, who had come all the way from India to see their only son being awarded with the doctorate title.

Arjun was on constant move for the next few days, busy attending celebrations & parties by fellow scholars and friends. It appeared that probably now was the time when he will really live the life he aspired for throughout his college days; a respectful and comfortable life of a Post-Doc fellow in USA, or so he presumed.

It was not even a month after his convocation that reality struck home to Arjun. Friends and seniors who had shown interest and enthusiasm in helping him get a good Post Doc job in their work places started excusing themselves on the context of post recession issues. Even the universities where Arjun had applied even before he got his degree were indifferent towards his brilliant records, saying that they are still in the process of selection and consideration. 3 months passed in desperation, fruitless applications and endless wait.

Finally, Arjun managed to get a Post Doc position in Reglan University, Arizona, albeit with a very meager salary and long working hours. Clutching on to his remaining hope, Arjun started his life as a Post Doc in USA. The work hours were odd and long and the work load was humongous. Many days he skipped his major meals and proper sleep hours. His small apartment shared with two other of his fellow Post Docs was a rare luxury which he treasured in his 1 day weekly offs. Arjun never was a spend-thrift, but here his tiny salary did not even stretch properly through the month and hence quite a few times he had to dig into his earlier savings fund, which he had been able to accumulate without much problem in his Doctoral fellowship days. Reality was unfurling before his eyes about his assumption of Post Doc life in the so called 'developed countries'. His seniors who he had thought to be leading great lives there were too in similar financial crunch; some of whom were leaving for their home countries; Lock, Stock and Barrel. Some others were stretching themselves to the extent of working in Supermarkets on weekly offs, just to earn a few more bucks. One of his close friends from college days had given in to alcohol abuse and was constantly borrowing money from everyone he knew. A few Post Docs had drastically changed their career path by switching to Marketing, Finance Management or IT jobs in order to support their families. But, whenever Arjun talked to his relatives or friends back in India, all he could hear from them was how lucky he was to be there in USA and working there, unlike themselves. Despite knowing that many of these friends were in enviable positions in companies in India, Arjun could not bring himself to reveal the truth of his misery to them or the fact that he really was pining to come back to the warm comfort of his family and home country. All Arjun could do during these conversations was smilingly quote the famous proverb to his friends:

"The Grass is always greener on the other side.....!"

Introduction:

There have been fierce debates on this subject, and from time to time, several articles have appeared in leading journals and bulletins all over the world. Overall, the condition of post doc has somewhat improved over the last two decades or so, in the developed nations due to increasing awareness. During the same time, many other post doc associations in the university and at national level came into existence. However, the mentality of those occupying high chairs with practicality of funding remained unchanged. Post docs, remains poorly paid till today. The reality is that the salary paid is, many a time, lower than that of a "janitor" in a university!! They work on short contracts with no guarantee on job, face retribution and ever-increasing challenges to survive in research per se from year to year. 'Perform or perish' - remains their motto, forever, though the word used i.e. 'performance' is somewhat dodgy and never well defined.

2. Understanding post doc

Post Docs belong to a hard working race and their poor working condition exists, which might throw an average industrial worker into severe industrial action [Website 1]. Yet, they face day-to-day apathy in their working conditions. They work, 24 X 7 hours a day, 365 days a year with hardly an off time taken. Further, they have ill-defined work responsibilities (Also see, Singer, 2004). They are highly educated; they hop around the continents in no time and are willing workers. Most of them are multi-tasking too and a very high standard is expected from their work [See, Website 2].

The notion behind Post Doc is that a young doctorate needs more time and experience to mature into a full-fledged scientist. It may involve working in multiple projects. Post docs positions are considered temporary, however, number of such positions is getting lesser by the day and duration is shrinking [Website 3]. The agony is that, in developed world, many faculty members keep hanging on even in their late 70s or work until death, which means the younger lot has to wait for a long, long time, sometimes into their late 40's and early 50's too! This makes a post doc helpless to change for better. Further, the avenues available in research are quite constricted compared to many other professions. It's also true, that increasing number of people are joining higher education and many of them, desire for a career in research (Benderly, 2005). This makes the situation even worse in the over-crowded science market.

There could be many reasons why a person wants to be a researcher. One of them could be a feel good factor – to do something novel and it could be, many are dazzled by the life style of the professors or directors. These people hop around the world, give big lectures and earn handsome rewards from the patents they file, may be on behalf of their staff scientists, who may not get the credit as should be. It's almost like a mirage, the distant world seems to like a heaven. While, the practicality is entirely different. The life style of a full-fledged professor is different from a graduate student or a post doc (Jeff, 2004).

There are many who will say - Money is not everything. While the reality remains, you need it in every turn of your life. No one will ever give you a concession for the mere fact, that you are a researcher and poorly paid. These facts becomes more pronounced when you cross your 40s and just going to buy a house, a new car or spend on essentials of life and on children's education. Post docs tend to live in blissful ignorance, such a pity that is!

3. Limitation

Research area in itself has a high burn rate of resources and is expensive. Fresh investment in a high-risk prone area is mostly done by government funding. Again, each of these administrative departments changes their priorities now and then. Therefore, like the stock market, research funding is driven by speculation.

Science funding depends on government support. The fact is every now and then the developed nations go into recession for long, as if recession has become their birth right. In the United States alone, the last two recessions came too quickly, the first one was the dotcom burst, 1999 to early 2005 and then the sub prime-lending rates caused recession, 2007 – to date. Before these two, another round of recession had hit industrial recession in 1994 (Schmidt, 1999). This literally means, a few generations of researchers were thrown out of work!! What's worse is that, those who have been working for many more years are rooted out and had to return home. With that, the developed world in most cases refuses to refund any part of their contribution towards retirement fund or social security, which is a double blow. There is hardly any law protecting the interests of post doc(s). Also see, Radetsky, 1994. All these count towards the later years of life and may be difficult or impossible to justify such a loss or recuperate from the loss. Many post docs wonders if they have a 'Time Machine' to reverse the tide and never started the post doc work in it. We think it is more of a mental blockage or setup, that many tend to pursue post doc just because the fellow colleague did it too. It's many a time copycat thing. Alas! time can go in one direction only, though many similar thoughts remain a fantasy captured in some Hollywood movies and science fiction books.

4. Do we really need post docs?

Yes, every society needs the post docs, because they are the machinery behind every novel invention. The top tier may get high rewards but these hard working post docs make things possible. To convert ideas into reality – we need post docs. Behind a successful scientist there will be a postdoc / lab technician. If we have to make path-breaking discoveries, we need them for sure [also see Website 4&5].

5. Plagiarism Issues

The faithfulness in their research results, many a times, seems dwindling, as if, one refrains from twicking their data and therefore, in the process, may fail to publish the next best paper, in a high impact journal, their career seems to be finished. It is like running on a treadmill, as long as you publish you are fine. The moment one stops they are thrown out. Do we really need such papers with articles, which are falsified if time deems or articles resembling, chasing a black cat in a

dark room when actually there is no black cat? Are we genuinely rewarding the younger generation only for success? This is not marketing arena, this is science. Failure is a part of it. Even marketing people fail...!!

If this continues, will research survive the test of time or will of any value to mankind in long run? How are we going to increase yield of crops, just publishing some great papers on some model species, which is no good? And saying oh, yes if we replicate in other crops it will work. And well, who is going to find traits in cultivated crops??

We cannot be sarcastic when it comes to solving practical problems. The society should stop rewarding scientists who claim to alleviate our sufferings by putting tall claims and, after all they are doing nothing but creating virtual solutions of practical problems. This is an area, which law makers must look at. What about in medicine field where we need practical solutions? If we tend to loose the talented post docs, who will burn the mid night oil, to bring something new/novel to this world?

It is not uncommon to hear that as soon as a post doc leaves a laboratory; their work is hijacked by hawkish project investigators. While the person should become the first author, he is given the last place in the article or sometimes, "No credit" at all!! Instances have been where a PI has included name of his friends and colleagues in return of his/her name of other paper. Scientific misdemeanor continues unchecked. The panel responsible for ensuring fair scientific conducts is full of those people who abuse the system for their own good. It's truer for an international researcher, who might have limited knowledge of recourse to the law. PI's tend to threaten the young lot of harsh consequences if they try to interfere with the system. Their (PI's) decision stands final.

Increasing number of post docs is leaving science forever. This is a great loss. They leave with their vast experience gained from years of actual research and that is no small joke. Sooner or later, post docs realize that their buddies, who started working after graduation, are making a lot more than them and having a more secure life. They cannot ignore those many realities of life which come back to bite them. Every one of us has a finite life span. We have to do many things, which are meaningful beyond of course the life in a laboratory, at least it's true for most of the post docs. They cannot ignore their near and dear ones every time.

There is a need to bring more transparency in the system. It's true that the system is already stressed, but also we need to be more innovative with science. Many more spin off companies should be created from universities rather than just depending on universities to offer job and retain scientists. Creativity is the need of the hour.

6. Common problems associated with post docs

The problems with international post docs are many. First, with meager salaries and unhealthy working conditions, both physically and emotionally, which literally means churning data for the next conference that their bosses are going to

attend, they tend to ignore their families and friends alike (Normile, Lawler, 2002). Many, with my personal experience, haven't visited their families for years. Secondly, visa is a big problem. You cannot change jobs so frequently, so, if you get a rogue boss, you are just screwed up for a length of time. Re-entry is another problem with some visa categories (Balter, 1999) Waiting for a permanent residency takes lots of time. They are naïve enough to think, things will get better for them in future, while the fact is that their bosses simply take advantage of their mentality and do good for themselves than for their subjects.

7. The Developed world and the others

The "Developed world" is badly searching for the next best idea to cope up and recover from recession. With the "best and talented" out of the screen, the new ones hardly have much experience and expertise to do something new. There may be exception always. It's not the 'extraordinary' people who bring the 'Change'; it's the Ordinary people with 'extraordinary abilities' who count. As goes the saying – "Loss for someone is gain for the other", a good number of these post docs finally go back to their home countries, not necessarily the way they would have thought in the outset. Most of them have, ultimately, added value to their home economy much to the happiness of their family and government.

There has been a surge in the number of research articles published from China in peer reviewed journals (even Argentina, Brazil, Mexico, South Korea, India, Thailand etc are also taking the lead) which is a living proof of what is happening in the new arena. In a world which is getting increasing globalised; from being a unipolar to an increasingly multipolar world, talent and opportunities are not only limited to developed world. The parity is increasingly diminishing, between standards, of first world countries and the rest of the world.

Today, the newspaper is full of articles depicting the ever-increasing investment and career opportunities being opening up in the developing nations. Ex-pats from all over the world are coming back to India and China. They have established model research laboratories and bringing top talents from all over the globe. It's what's described as a reverse brain drain! So, it's the time for perennial post docs to look for new opportunities early in their career. We used the term perennial because, post docs are of different types, some work for a year (annual post doc), some for 2-3 years (this is quite normal), some long and then some feel good to stay as post doc for all their life. They fear to return to the home country because they feel they might be alienated once they return, and stick to whatever they get. They still don't believe opportunity exists. They remain pessimists; many professors take their advantage by paying them poor salaries and increasing the expectations to that level which they would expect of a home grown researcher.

8. Conclusion

To conclude, grass may look greener on the other side. However, post docs should try to diversify and take opportunity from so many lateral openings, not directly

related to their work. With a bit of further training, they can work well in the new industries like bioinformatics and instrumentation companies, chemical industries, product development, molecular biology product manufacturers, quality testing labs and as such. This will help to prevent glut of post docs in the market and also provide them better opportunities in life. Opportunities are increasingly available in every country not just for research in public enterprises but also in private arenas. We need to take advantage and guide ourselves in taking the right decision in the right time i.e. rather than waiting for doctoral studies to end, one should start researching the job market for befitting positions which they can take up, even if they are still to complete their degrees. Looking beyond the Universities and Research laboratories is also a need of the hour. This is because, in some developing countries, the job market may not be able to offer post doc level works due to lack of expensive infrastructures, thus making the post doc fellows return difficult. But surely, with advance planning and timely action, these degree holders can find research-oriented positions in organizations in and out of their countries. This will give them work-experience which is bound to prove beneficial in their later life endeavors. For example, the Indian Government has started re-patriotization of Indian scientists working in foreign countries by offering them appropriate remuneration & positions in Government –funded research bodies. Many more countries are offering such avenues and schemes to attract talent. Many more researchers need to diversify, even in their mid-career to realize or exploit the true potential of their selves. By that, they will contribute not only to the society but also to their near and dear ones, in a more practical way. However, our expectations should be realistic, in tune with today's happenings. Post docs should look forward to lateral jobs which suit to their skills to help themselves in life in a true sense. This will set good example for the younger generation wanting to pursue a career in science.

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