

## Gender Disparity in Biosciences

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Though number of women seeking higher education like PhD /Post docs are increasing, yet we do not see equal amount of work force either in research or in industry, even less in scientific advisory boards. BioSpectrum spoke to a number of women in research, academia and entrepreneurs and try to find out the reason behind the gender inequality in the bioscience sector and how it can be reversed.

#### **Gender Gap in Biosciences:**

One of the key reason for the lack of gender parity is social conditioning. The primary work of women is considered to take care of her family and do household work.

"Traditionally, a woman is expected to focus on home, hearth, and children. With all distractions in her life, career seems to be the easiest to compromise. Even if she overcomes all odds and carves a career for herself, she is viewed as a woman first and a scientific expert or a doctor next. This doesn't do much to her self-belief. There are few who beat all odds and break the glass ceiling," said Ms Anu Acharya, CEO, Mapmygenome.

Speaking on the similar lines, Dr Geetaa Singh, director, Labland Biodiesel said, "Research requires an extremely high level of commitment and dedication to the extent of exclusion of a personal life. Science cannot just be treated as a '9 to 5'job. It calls for a certain lifestyle. An ambitious and driven personality is key to surviving in this field. It requires a strong family and drive for making a career in research for a woman to succeed, which is probably not as easy to come by as one would hope." Another reason for the high attrition in the work force when women start families is lack of proper institutional support for married women.

Dr Radha Rangarajan, co-founder and CEO, Vitas Pharma said, "I think that we provide women with very little institutional support to help them balance their careers and family life. Few work places have childcare support on site. It is also not easy to find good quality childcare help in India, leaving women to rely on their mothers or mothers-in-law to help them. Many women leave the workforce at this time, unable to cope with the stress. Re-entry into the work force three to five years later is

often very hard and again, without support from family, she may not make it back successfully even at this stage. If the number of women able to sustain their careers is small, it is no surprise that there are fewer women at the top."

### **Gender Disparity: A global Phenomenon?**

Gender inequality is a widely global phenomenon, however, in India it is heightened due to social and cultural system that sets the priority on the role a woman has to play-with family coming first and career second.

"The situation is bad globally. However, in the west, men are more likely to stay at home and take care of the children. Also, women do not give up their jobs to take care of elderly members in their family that often," said Ms Acharya.

"A man's range for tasks/load can be completely work-oriented, as much as 95 percent work: 5 percent family, whereas the least a woman has to compulsorily manage is a 50:50. This 50:50 in percentage is actually a 100:100 on tasks/load, because in most places of work, women have to clock the same no. of hours of work as men and then cater to the 100 percent expected from family. Just as there are only so many hours in a day, there is only so much energy in any person, man or woman, on a daily basis," said Ms Bharathi Sriram, vice-president R&D at GangaGen.

She added, "In the Indian woman context, this quantum is proportioned for career and family and getting through each day. With the added stress factors of distances and commuting in the city, the negative impact on health and productivity of women can be clearly envisaged."

As per Dr Shailja Vaidya Gupta, director, International Cooperation, Department of Biotechnology (DBT), "Yes, disparity exists worldwide, it's a global phenomenon. The developed world from what I understand still has pay/wage disparity based on gender. This is not so in India. In that sense the government has provided great incentives for the working women in tax rebates, property registration etc."

### **Does the present system allows for work-life balance/women-friendly?**

In answer to the question, majority of them praised the government's esp. the central governments' schemes for women, however the same cannot be said for private companies.

"Yes, the Government has been very supportive of women employees. Apart from the six month maternity leave, all Govt. women officers are allowed 2 years of child care (paid) leave, (CCL) till the child is 18 years. CCL is not available for the male counterpart. I personally and I reiterate it's my personal opinion that the CCL, which is different from the maternity leave, reinforces gender roles, that of child care being the responsibility of the mother. A parent care leave would have been more appropriate, child care being as much a responsibility of the father as that of mother. This gives the message signal that the government has decided that the mother belongs at to the home to take care of the children, a deterrent to gender equality," said Dr Gupta.

Dr Bula Choudhury, Research Scientist, Guwahati Biotech Park, IIT Guwahati said, "In the R & D sector, different Government funding schemes has been launched where woman can engage themselves after having a career break, like Woman Scientist Program of DST. Long duration child care leave for woman is a very good move by the govt."

These schemes should be implemented in state govt. as well as in private sector.

"The policy makers in the industry are largely men, therefore, it is not recognized that work-life balance issues are distinct and different for women. Women would have to be given allowances in terms of flexibility in work-hours when required," said Ms Sriram.

### **Equal opportunities for Men and Women?**

are almost equal for both men and women in the sector.

By and Large, remuneration and promotion

Dr Rangarajan believes though equal opportunities are given but women often pass up these opportunities to balance their responsibilities at home. "I have rarely, if ever, seen a man do that," she said.

"Routine promotions are more or less same, for I speak for the government sector only however, where promotions to leadership position are concerned there is a definite glass ceiling. Look at the universities, some 700 odd universities, all with sizable women faculty, but only three percent of them have women VCs. We are ready to accept average mediocre men in leadership positions but women are not so lucky," said Dr Gupta.

She continues, "One senior women bureaucrat now retired, was overlooked for cabinet secretary position because the then PM was not comfortable with a women cabinet secretary who would be called upon to work 24/7. The fact that the woman bureaucrat was the topper of her batch with a brilliant track record and willing to work 24/7 did not make a difference. These archaic and deep set mindsets are the biggest challenge a women has to face."

Sometimes women executives are also responsible for not getting the promotion. Some bring household problem in office, others are not aggressive enough to meet their target.

"Most of the time if there is a lady and a man for one promotion, both equally deserving, the promotion goes to the man. It's the conventional thinking, that decision makes believe that the man will put more effort for the company, which is always not the case," said Ms Monisha Hajra, founder, ScientiaBio.

#### **STEM: Male dominated career?**

Traditionally, STEM (science, technology, engineering, and mathematics) is seen as a male-dominating career. Men often outnumber women in in these fields.

"This is true, and enough reasons have been given through history for this, cultural, the way we bring up a boy and girl, the options given to them and even the developed/ undeveloped right and left side of the brain. This will change rapidly when parents, teachers and the students themselves start believing that all subjects are equal. Remember women have had a lag start time in terms of education and more so in STEM education so there is a lot of catching up to do," mentioned Dr Gupta.

Lack of a personal and social life in addition to difficulty in maintaining a work-life balance makes it difficult for women to succeed in science. "The case of women in the STEM funnel resembles our famous drug discovery, one where you start with thousands of compounds and end up with a handful of possible targets. Similarly, women make up 50 percent of the population but only a handful make it to the top," said Ms Acharya.

Things are changing for good however, ratio of women: men in STEM fields is improving. "Not all branches of STEM are equally male dominated. The biological sciences, for example, has lots of women," said Dr Rangarajan.

"Traditionally, yes, it has been so considered. It is changing now. If you look into technology areas and in medicine, engineering and technical streams, you will see at least 40 percent girls on averaging. Given a few generations, there will be more women excelling in the STEM than men," Ms Sriram said.

#### **Woman scientist schemes:**

The DBT's Woman scientist scheme is helping the women. The Biotechnology Career Advancement & Re-orientation Programme (Bio-CARe) scheme to facilitate participation of women scientists in biotechnology research is a very good scheme for woman working in North Eastern Region which is having two segments viz. Research Grant Opportunity (RGO) and Career Re-orientation Fellowship (CRF).

The purpose of RGO is to build capacities for women scientists employed fulltime in universities and research laboratories or unemployed women scientists after a career break so as to help them undertake independent R&D projects.

"Dr K Vijay Raghavan, secretary, DBT has made it mandatory to have 30 percent women representation in DBT Task Forces and in my opinion I think he has been instrumental in getting women Directors in CDRI (Dr Madhu Dikshit) and Sri Chitra Institute (Dr Asha Kishore)," says Dr Gupta.

DST has also initiated programmes for women. Women Scientists Scheme (WOS-A) aim to provide opportunities to women scientists and technologists for pursuing research in basic or applied sciences in frontier areas of science and engineering. A special provision has been made under this scheme to encourage those women scientists who have had break-in-career.

Another such scheme is Women Scientist Scheme WOS-B (SoRF). Its objective is to bring back the women scientists and technologists in main stream after break in their career, provide platform and training to women scientists and encourage women scientists and technologists to apply their S&T training towards innovative solutions to address various societal issues.

#### **Bridging Gender Gap:**

To promote female advancement in the STEM fields, we need families to value women professionals and recognize the contribution they are making to the family and to the country.

"However, all these wouldn't work if we don't change the mindset of families and the society. Families can motivate women to do better and build a strong support system. In a healthy society, a woman's achievements are not discounted or viewed as a threat," said Ms Acharya.

Gender gap is mainly due to disparity that links to work-life balance. Institutional support is unheard in India. Day care centers

that provide care for infants are not very common either.

"In the west, in all the places I studied and worked at, day care facilities were available minutes away. When I was a student at Rockefeller University in New York, day care was available on campus and subsidized for students. When I was a postdoctoral fellow at the Harvard School of Public Health, day care was five minutes away. I went back to work when my elder daughter was 4 months old. Proximity to the work place allowed me the option of visiting her in the middle of the day, if needed. In India, the idea of on-site daycare has simply not caught on. But for employers keen on retaining their women employees, there cannot be a bigger carrot than this," said Dr Rangarajan.

Career opportunities for mothers returning to work can also contribute to bridging this gender gap. Dr Choudhury believes to close this gap an organization should follow some policies like transparency during recruitment, promotion and wage fixation for man and woman, monitoring of gender equality and re-entry opportunities for woman.

"I have recently been through a book titled "Why Women Mean Business" by Avivah & Alison. In that book they had shown some of example case studies (like PwC, Nestle, Nissan etc) how some companies have taken adequate measure to close the gap. One example is ICICI Bank. As per that book 25 percent of ICICI bank senior managers are women. So the company board also has to proactively take measures in closing the gap which will eventually help them in boosting company performance," said Ms Hajra.

The other most important thing is to train more men on gender parity, agrees Dr Gupta. She added, "Gender gap will narrow down in due course of time. We need empathetic, open minded men on our side who understand the importance of to an equal workforce. The involvement of men in bridging the gender gap cannot be underestimated. Men who are willing to listen to and respect the opinion of women, are important."

Dr Rangarajan echoes similar sentiments, "Unless we start to value women's careers on par with men's and bring in change to support them through the child bearing years, we will continue to see a low level of representation at higher levels in industry and academia."

#### **Word of Wisdom:**

#### ***Advice to the young female entrepreneurs/researchers from some of the women currently holding top position in the Industry.***

Your goal will turn your way with dedication, determination, hard work and an attitude of never give up. Be bold, optimistic, communicate with your superior directly. Work hard, be determined. Never compromise with your dream.

Work fearlessly with great deal of competence and an eye for detail. Never bother about what your colleagues, male or female, have to say about you.

Make a Choice, Respect your choice, Believe in yourself. Work hard and do not let anything come in your way to achieve till you achieve what you aimed at.

Don't give up half way through no matter what challenges come your way. Do not let yourself be intimidated or overwhelmed by non-professional views. The only thing that should speak for the candidate is your competence and performance in the chosen field.

The road ahead may not be smooth, but staying motivated and passionate about your goals can help. Dream, but work hard to convert your dreams to reality.

Trying to balance work and family life is not easy. But with passion and commitment one can navigate the tangle. I believe that one must lead a purposeful life; so choose a career that gives fulfillment, not just material wealth. You have to believe that in the end, the hard work pays off.

#### **Top Women in the biosciences sector:**

Below are some of the women's who fought against all odds to capture the top spot in the industry:

Ms Anu Acharya, CEO, Mapmygenome

Ms Bharathi Sriram, vice president R&D at GangaGen

Dr Bula Choudhury, research scientist, Guwahati Biotech Park, IIT Guwahati.

Dr Deepanwita Chattopadhyay, CEO, IKP

Dr Geetaa Singh, director, Labland Biodiesel

Dr Manju Sharma, former secretary, DBT

Dr Radha Rangarajan, co-founder and CEO, Vitas Pharma.

Dr Renu Swarup, adviser, DBT and MD, BIRAC

Dr Villoo Patell, founder and CMD, Avesthagen  
Dr Kalpana Krishnaswami, CEO at Metaome.  
Dr Kiran Mazumdar Shaw, CMD, Biocon  
Dr Malathi Lakshmikumaran, director and practice head, Lakshmikumaran and Sridharan Attorneys  
Dr Meenakshi Bhat, consultant in Clinical Genetics  
Ms Monisha Hajra, â€?founder at ScientiaBio  
Dr Purnima Sharma, MD, BCIL  
Dr Shailja Vaidya Gupta, director, International Cooperation, Department of Biotechnology (DBT)

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