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Siew Hwa Ong: Women should pursue non-conventional ideas

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I decided to pursue a scientific career during university days and I was fascinated by the field of cell signalling that I started to learn about in Year 2 at National University of Singapore (NUS). I started PhD studies in 1995 at the Institute of Molecular & Cell Biology under A*STAR and was also a visiting student at New York University (NYU) Medical Center. I then pursued a post-doctoral fellowship at Mount Sinai Hospital in Toronto, affiliated to University of Toronto (UT).

I chose to work at these places because Professor Joseph Schlessinger and Professor Tony Pawson, my mentors at NYU & UT, respectively, are pioneers and gurus in cell signalling. I have always been very inspired by these two mentors, they both also started biotech companies to commercialize the intellectual property developed in their laboratories. Professor Schlessinger started three companies over the past 25 years, including SUGEN, Plexxikon and Kolltan, resulting in the targeted anti-cancer drugs Sutent and Zelboraf currently in market.

I tremendously enjoyed my work and spent 90 percent of working hours in the lab, so each day was about 12-14 hrs in the lab, weekends would be about 4-8 hrs, and that went for a period of about 10 years. I have always been very grateful that as a young person then with such huge commitment in the pursuit of my passion in science, my parents were so supportive and my siblings stepping up to fulfill my family duties while I was away from home. I did very well and published 11 papers as a student and six as a post-doctoral fellow, all in the area of cell signaling in cancer, becoming very versatile in genetic and protein mechanisms in initiation and progress of the disease.

I came back to Singapore in 2004 and joined Institute of Molecular & Cell Biology (A*STAR) as an assistant professor in research, and concurrently as a lecturer at the NUS. I still maintain this teaching role, I give lectures on tumour biology to Year 4 life science students. I had my first experience of setting up a new lab and supervising a research team. My own lab continued on cell signaling in Cancer, covering the area on metastasis, ie. spreading of cancer and filed my first patent from

that work.

During 2007, I felt a strong urge to do applied research than basic research, as the way technologies develop was very rapid and powerful in enabling development of drugs, diagnostics and medical devices, and I had done about 13 years of basic research by then. At that time, I chanced upon a recruitment advertisement by Eli Lilly for an experienced person in cell signaling in cancer for drug discovery and development. The job description read like it was talking about me. I applied and then went to the US again to work at the headquarters of Eli Lilly at Indianapolis. Being able to apply my background in cancer research in drug discovery and development was really exciting; I learnt a lot about the pharmaceutical R&D and about business at Lilly headquarters. I was one of the scientists to initiate drug target identification and validation in epigentics enzymes, at that time a new cancer program in Lilly.

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I then came back to help set up the Eli Lilly site in Singapore in 2008, as they decided to expand R&D into Asia. This was again a tremendous experience, I got to set up a new lab with a few other initial employees of the new site, this time a much bigger lab. I developed the local R&D program, we hired about 50 people and established a lot of partnerships with local research institutions. However, in 2010, Lilly made the business decision to shift the Singapore operations to Shanghai, to enhance access to China market.

I decided at that time to set up a contract research company, as the major trend moving forward for pharma companies was outsourcing of R&D to achieve cost-effectiveness and tap into diverse talents. So that is how Acumen Research Labs was started in early 2010. Acumen provides contract research services in early pre-clinical phases of projects that are customized, which is quite unique in the CRO industry (most CROs are specialized). So my mentors who are both academic cum Biotechnology industrialists have tremendous influence on my career track.

I think it's in evolving the business model from being purely a contract research company to include also our own R&D for developing diagnostics. We see the companies around that are specialty contract research organizations (CROs) and do not do their own research, or technology development company that focus on developing products based on proprietary IP. We started as a contract research company as that involved less capital upfront. Along the way, business volume fluctuates depending on amount of spending on R&D outsourcing by pharma companies.

In China and India, many CROs get into fierce price competitions because of this. I did not start with technology development company as huge investments would be needed (we are talking about tens of millions of dollars upfront for even a small startup) and still many such companies at some point became cash-strapped.
So I took a hybrid model from the second year onwards till today. Revenues from the service component, together with grants help to fund our internal R&D, that we plan to commercialize through licensing or product development & sales.

I have been fortunate to have access to many opportunities to learn and do things, I am very glad that I can be a scientist, professor and entrepreneur all in one career; this is possible through starting Acumen Research Labs. It's not an easy path but so far, we are 3 years old, very progressive & has 6 employees (3 PhD, 2 MSc, 1 BSc). I would say switching to the pharmaceutical industry in 2007 instead of staying in academic research. I am a very active person and need a more multi-faceted career by that time when I was about 35 years old. So combining all the experiences gained equipped me with the key competencies and the network of contacts to start a company.

There are challenges from time to time, of course. The most recent major one would be the first contract for Acumen. This was a biomarker project from a company in Poland. It was a 1-year project and was very a important one to help the company get started. We have completed it end of last year with all the milestones delivered on time and within budget but it was very challenging the whole process given the language barrier and significant difference in business culture; I took a lot of effort to understand the Polish culture and build relations with a very large number of Polish people. Some of the Polish people do not speak much English so we needed translators and I actually learnt to speak conversational Polish online. It took about 1 year to negoatiate and finally sign the contract, and I went to Poland 3 times for that. Then it was another year to complete the project & I went to Poland quarterly for project meetings, in addition to the regular communications by phone and emails. In total I went to Poland 7 times in 2 years.

My Dad, who passed away in the midst of my busiest period setting up Acumen. He had a relapse of stroke. He was an entrepreneur himself and built a successful company; he started a construction company soon after my youngest brother was born as his salary was just barely enough for the family with 4 children. I saw as a child how hard he worked, many times I did not get to see him the whole week until the weekend. When he succeeded, he still worked hard and had always been a very

generous boss to his staff and a very well-respected person in the industry. His courage, resilience, leadership by example and generosity are values his children constantly see since young. To be successful sustainably, we need to have the coupled values of humility and audacity, listening and leadership, respect and integrity, accountability and generosity.

I cook for the family, read broadly online & meet friends over meals. I also do some community work eg. I set up a Science Camp for children from families with income below socio-economic norm, in partneship with charitable organizations. We enable these children opportunity to learn Science through experiments & educational trips during a 2-day day camp during school vacations. A career in STEM (Science, Technology, Engineering & Math) is not easy to begin with, whether for men or women, because first it requires very intense training for a prolonged period of time (most people complete formal training between 30-35 years old). Secondly, whether academic or industry, it tends to be highly competitive, academics need to publish & secure grants, industrialists need to develop technologies & sell products. But one really needs to maintain a balance, sometimes hard but it is important, because at the end of the day, our life is not sustainable only on scientific pursuits or business.

Our life also includes family, friends, community & personal space that we must cultivate with quality time & efforts too. One thing I learn is to set priorities set & plan accordingly, and be flexible about the plans when we need to be; seek the necessary understanding and support from people around us; and accept that we cannot have everything all at the same time. Our professional-personal life balance has daily as well as long-term components.

If you feel the calling, do step forward; because this is a highly complex & dynamic industry traditionally led by men, but I think in almost all aspects of the business there are some natural talents innate to women that complement those of men for greater success. Acumen is still a young company and I still need to spend a lot of time on it; in these 1-2 years, I will be expanding the team to help grow the company so that it will sustainably create value through innovative products that improve lives, excellent R&D services that advance innovation, commercial success, and meaningful careers for employees. I will also continue with the lecturing role, I truly think we learn from teaching others as much as from being taught.

(As told to Amrita Tejasvi)