

SPARK Sydney 2019

What is this course all about?

It is a two-week long training course which aims to 1) educate participants from all over the world on what are essential to be able to bring biomedical research discoveries to the market, 2) provide workshops to encourage constructing fast, creative, and innovative solutions, as a team, to unmet medical needs and/or to improve QOL of the target market, and 3) show a sneak peak of the lengthy and complex process of drug or medical device development from curating ideas to getting funded to the marketplace, and 4) connect participants to the right people, both mentors and colleagues. This is parallel to the mission of SPARK global which is to boost the impact and accelerate the inventions from the academia for the good of patients across the world.

What was the program schedule like?

The first week was mostly lectures, workshops, and group discussions. The first day was about design thinking, learning about your team through effective communication and active participation, and a lecture about Intellectual property and protecting your invention/idea. The SPARK approach was taught to us on the second day challenging the participants to start with the end in mind. The lectures on the third day were about medical device development and regulatory science. On the fourth day, more business-centered lectures such as how VCs work and how to attract funding. The talk on the fifth day was given by the founder Prof. Daria Mochly-Rosen who shared her personal story of how she started her company, her struggles during drug development, and finally benefiting patients. Group discussions were conducted in the afternoon as well to accomplish our main task for the week is which to identify a biomedical need that we are passionate about and as well as a solution as a group. The expected output was a written report about the project/product the participants had been brainstorming about all week. This report was very similar to a first draft of a business proposal.

The second week was all about advancing the entrepreneurial skills of the participants. The final output was a 13-min pitch. Each group had to come up with a logo and company name, introduce the team and the role of each member, describe the problem to be tackled, present the solution and its value proposition, Proof of concept, milestones, predicted results, and validation methods. The pitch also had to mention the IP, how the medical device or drug is to be produced, marketing strategy, an estimate of how much it would cost to produce the product and how much it could be sold for, and the competitors. Finally, the pitch should also include the estimated time when the product will enter the market, the ROI for investors, what the company is offering for how much, and to emphasize why anyone should invest in the company.

SPARK puts emphasis on connecting and collaborating with other scientists across the world. There were two networking events that were held. The night before the final pitch, the participants were invited to the 5th Annual SPARK Global Meeting which was a gathering of mentors and SPARKees from all over the globe. On the last day, the participants had the opportunity to watch

live pitches for Accelerating Australia Showcase and talk with other academics, medical doctors, as well as, people from the industry who are interested in start-ups or are running start-ups themselves.

Who were the participants?

SPARK accelerates discoveries from university laboratories to the bedside by training world citizens. The participants, representing six different continents, included articulate and pro-active graduate students, medical doctors, engineers, and industry, and university staff coming from diverse fields of expertise. That also meant a vast number of cultural backgrounds and personalities which made the whole experience better and more challenging at the same time.

What have I learned?

The two weeks I spent in Sydney had a bigger impact on me than I could have ever imagined. For starters, before this training, I thought not publishing as soon as you can is withholding information to the people who could use it most: the patients. Moreover, higher education has drilled it in my head that it is imperative to enlighten the scientific community by publishing, presenting your results, and writing grants as soon and as much as you can. After talking to Professors who have helped patients with their inventions, I learned a very important lesson: **“Patent first, publish later”**. Not protecting your research discoveries and other intellectual properties before publishing will ruin your chance of that idea to be financed by investors and not one patient would benefit. VCs and other investors prefer products that are patented because without protection, there is no exclusivity; you would not have the right to stop others from exploiting your invention for their own gain. If there is anything that needs to change in the academia, it's the mindset that publishing immediately is the moral way you can help people worldwide. There needs to be awareness of what it means when you publish your discovery without protecting your IP.

The projects each group came up with had to be something outside of their expertise. This leveled the playing ground and made the different projects even more interesting. On top of that, we, the participants, were grouped randomly. This translated to some teams having amazing group dynamics while the rest had more differences than others. The diversity did not only lie on fields of expertise and cultural background but also, the motivation why the participants were there in the first place. Understandably, some had projects from their research groups that they want to promote, and a few were there to get inspiration on what projects what they want to work on in the future. Others were there to enjoy the process of coming up ideas and developing their entrepreneurial skills and a couple were there for purely networking. The combination of having to work with people who we just met and brainstorming ideas we are not experts on made the first week both frustrating and stimulating. Overall, different opinions and perspectives helped the teams improved their drug or medical device.

There are many unmet needs in the biomedical field, but which one are we, as a group, all have genuine interest in was a real challenge. The report we submitted at the end of the first week helped us as team, have a better idea how big or small of a problem we are trying to solve and really

pin down what we are trying to solve. It also helped in confirming if our project was feasible or not and what other things we can integrate in our prototype.

The second week was meant to be focused on putting together and practicing on how to pitch our product. That said, a lot of the teams, including ours, were redesigning/reevaluating the ideas we came up with the week before. My team decided to create a medical device to alleviate stress during eye check-ups for infants. More specifically, we created a restraining device, specifically for premature babies, 0 to 1 year old. The pitch practices on the second week in front of our mentors and colleagues really helped us refine our pitch and our presentation skills. Since the mentors have experiences on how to run a real start-up, we were given constructive feedbacks that drastically improved the way we deliver our pitches and to reconsider if what we have is the best solution we can come up with. Also, over the course of two weeks, the mentors have repeatedly mentioned that when pitching to VCs and firms and they don't like what you are presenting to them and it really helps if you have a back-up plan, drug or prototype. And even if they do, it is better to have back-up plans if the first project did not pan out.

The first half of the last day was for the final pitch. That morning, one of the professors asked that we move a copy of our presentation to the main laptop to be used by all groups. I told him we were able to project our slides from the laptop we were going to use and that we have tested it twice, but he insisted we have a back-up file. Since every time we used a non-mac laptop, we either lose some images or there are changes in colors, we decided to use our own laptop but when we got on stage, the slides would not project continuously. We had to learn it the hard way which is to always have a back-up file or plan. Everyone was very patient with us and we will forever grateful to them. Despite the technical difficulty, I think our team was able to handle the situation the best way we can. After the pitching event, two ophthalmologists wanted to help us realize our project and even offered their expertise. They also said that they can connect us with other optometrists and ophthalmologists. Being approached by future collaborators and advisors is a good representative of what SPARK can do. To sum it up, I had a great experience thanks to the other participants and of course, the mentors, and organizers that made this training possible. I would recommend this course to anyone who is interested in biomedical start-ups.

Final pitch: Trying to figure out how to stop screen from glitching (left); Presenting Biomedical problem (right)



With SPARK Global Founder: Prof. Daria Mochly-Rosen (center)

