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Travel Report

SPARK Biomedical Innovation and Entrepreneurship Training Course

Course:

The course aims to introduce the process of developing biomedical product to students currently working on medical related themes, especially those from the academia. This product could be a drug, formulation, device or even mobile application used to improve the quality of life of patients and address an unmet medical need. Ultimately, it gives the students a glimpse of the long and complicated process of bringing concept or idea to the market.

Participants:

Students were from different SPARK programs across the globe. Participating countries were Japan, US, Germany, Australia, Taiwan, Korea, Norway, Israel, Mauritius, and Zambia. The students' backgrounds were also diverse, ranging from engineering, basic research, clinical practice, and manufacturing. This setup promoted an international and interdisciplinary atmosphere throughout the course.

Activities:

The course is designed to form groups among students (three to four members) and in the beginning we were tasked to come up of an idea to address an unmet medical need. This idea was improved throughout the two-week course period. In our daily schedule, we attended and discussed entrepreneurial lectures and medical discoveries case studies on the first half of the day then we spend the other half incorporating the things we have learned from the lectures to our project proposal. Personally, our teams project has been modified for at least five times before we have decided to stick on a single project. At the end of the first week we had a practice presentation of our proposal pitch to the instructors. They evaluated our progress and team dynamics. Also, they assessed what are the necessary expertise we would be needing. The second week activities were a bit different as each team experienced "personalized-learning". Every afternoon session is dedicated to project development under the guidance of various instructors available that day. This way we have received a multi-perspective guidance tailored specifically for our project. Although some of the advices of different individuals didn't completely match. We had the opportunity to assess the options based on what could be more feasible, what have the mentors previously experienced, or what could be an efficient strategy. This part is an exciting way to learn since we are forced to dig deeper into the issue and find ways to justify our choices during the final presentation.

Project Development:

Our group focused on wearable technology to support patients with Asperger's. We named our technology EmotiSync. We considered the current boom in sensor technology and machine learning to come up with a system to address this prevailing issue in mental health. The two-week period is like a condensed version of a real project development.

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Throughout the course we were given advices on what are the potential collaborators or investors are looking for in your presentation/ written proposals. In this aspect, even I have written a lot of proposals and participated in various competitions, I have learned valuable techniques in improving my presentation and writing skills. It is a good thing that each member has identified their strengths and what can we offer into the table. I focused on developing the technical specifications (hardware) and financial aspect of our project since I have some experience in preparing these things and through the two-week course my knowledge about this business aspect were dramatically improved. I also learned some software development (mobile apps) through the course while collaborating with my groupmate for the app development. After all the preparations all the seven teams were given a 20-minute pitch about their output and every instructor judged each project (as a potential investor). Each team will be scored based on the content, profitability, feasibility and inventiveness of the project. And from these metrics they will evaluate our pitch if it is worth investing. After all the presentation we got the 2nd prize and the 2nd prize for people's choice award.

Insights:

The whole course experience might be one of the most stressful experience I had but it is also refreshing in a way. Stressful because most of the time I work on my own, and I usually succeed that way. But this time, you must satisfy not only the instructors but also your team members with different background, motivation, priorities, etc. You will be thinking of way how will they listen to your ideas and go to your direction. The internal conflict could sometimes be intense that we sometimes end in heated arguments. The good thing is that we can ask the opinions from experts available in the classroom. This experience reflects what happens in real-world project development. This scenario was only made possible through the SPARK course because it is designed to combine various students from different background and location under the supervision of world-class experts in translational medicine as well as industry leaders. For two weeks, these different people all worked in a single room - it was like the microcosm translational medicine.

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In terms of team dynamics, I learned more about thinking carefully what you could bring to the table. We were only given two weeks and researching for the sake of argument could be a waste of time if you have tight deadlines. Sometimes, you need to trust your members and focus on how you can help the team. Through this course, I honed specific skills which I think I am already good at. It sparked continuous learning and that's a good thing for our start-up activity back in Japan.

I also noticed that based from the output of other groups, most of us worked on a project related to some device and diagnostics. I felt it is a lot easier to imagine pitching something tangible. I am thinking that this is one underlying limitation of graduate students. Most of the time, students work on a very specific topic and exposed to limited disciplines. Unless you are working in a long-time drug project you got from your seniors, I feel it hard to come up with a drug related theme, and probably most of us felt the same way based from our output. That's why I felt this experience refreshing. I think graduate students could address this limitation by networking and working with people outside our disciplines. We could also use our spare time learning about the latest trends and discoveries on healthcare. I realized that if you are a graduate student working on medical related themes, then translational medicine should be your hobby. We need to invest time, effort, and in my case money to learn more about how the system works.

Personally, I have tried my best to extract everything I could learn from the experience. As a delegate of SPARK Japan, I would like to share this experience to my fellow students and researcher in Japan. I think we could organize something like this course that would SPARK some innovation among researchers here. SPARK course in Berlin have generously provided some material and references we could start with activities like journal presentation or group study session. This activity is ideal to those who wants to bring their projects to the market and learn more about the steps and milestones they needed to achieve. As a student engaging into start-up activities, this experience had solidified my understanding on how medical devices should be developed and what are the funding options available. Some of my team mates and classmates during this program was handling or part of their own SPARK-supported projects and I feel motivated to also take part of this journey and have a SPARK project of my own soon. I also learned that SPARK project gets a high success rate and I understand that this is due to its training and the pool of available experts willing to support the crucial early stages of project development.