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Travel Report

SPARK Biomedical Innovation and Entrepreneurship Training Course

Course:

The purpose of this course was to train students to develop skills in design thinking, brainstorming, product development, and commercialization for unmet medical needs. It was also important to become more creative, innovative, and savvy in translational research in the biomedical sciences. The course was taught through a series of lectures from professionals in different fields, group work, and presentations.

Participants:

The program consisted of a very diverse group of students from SPARK programs all over the world. There were participating students from Japan, US, Australia, Zimbabwe, Finland, France, Germany, Korea, Taiwan, Israel, and the Netherlands. This diverse group led to some very clever and unique solutions for some of the world's medical needs.

Activities:

The course consisted of 34 students and researchers from a variety of countries. On the first day we were divided into 9 groups of 3 to 4 students. We began with a small game to get us in the mood for brainstorming. The game was simple. Each member of the group writes down two ideas of any existing on object, each on its on post it notes. These notes are then folded and mixed together. Once everyone has written down their objects. The notes are mixed up and blindly paired together. From there, the notes are unfolded, and the two objects are

read. The group is then required to think of a new product that combines the two existing ones and pitch it to the class within 10 minutes. This was a great way to have some fun brainstorming and also get everyone in the brain set for pitching ideas.

The rest of the days followed in a similar structure. The morning would be spent listening to a guest lecturer about a variety of different and practical topics. These topics ranged from intellectual property and patent law to fund raising and venture capitalism. After a short break for lunch, the teams then spent the afternoon working on their own particular idea for a product.

Project Development:

The program was divided into two main parts. The first entire week was spent on defining a problem and proposing a solution. The second week was spent on refining the solution with details, developing a business plan, and pitching the idea. The hardest part of this program was the first week. Many people are tempted to just start brainstorming solutions or products and then trying to find a market or a problem it can help. This is the worst way to do things. You are left with products and ideas that have no benefit to society and ultimately no market to make money from. My group spent a lot of time thinking of different problems in the medical field. We spent a day thinking about problems doctors may face in the hospital. We spent two days thinking about medical needs in developing countries. Brainstorming can sound like a trivial activity, but the success of a group can be determined directly from the problem they choose. It's not even enough to just pick a problem. It is about how you pick it. You have to define your problem in such a way that you can provide a solution. You also want to define it

enough that you have a very specific target audience in mind. You can't simply pick "cancer" as your problem as there are hundreds of variations to the disease and even more variety when it comes to the people affected by it. When coming up with solutions you have to know how far to take it. You can spend hours on a single solution and then realize the side effects are too great to ignore. Many solutions also sound great in theory, but when you realize that some people refuse to take their medications or the fact that you can't just donate your solution out of the kindness of your heart (you need money to make a difference) things get even more complicated.

This program is also unique in that we were encouraged to pick topics outside of our field of expertise. It would be very easy for a student who has spent years researching a particular topic to simply continue his thesis idea, but that is not where great ideas come from. I personally have a background in mechanical engineering. My groups idea revolved around drug and antibody conjugation. This was very tough for me as I spent a lot of time reteaching myself biology and chemistry. However, this was a great chance for me to get out of my comfort zone and learn an entirely new field. Ultimately, I believe our product was much better than if I had chosen to stay inside my strict engineering mindset.

Insights:

This was an amazing opportunity and I am very excited that I was able to participate in the program. I learned so much from this and feel that it is very applicable in my program, Empowerment Informatics, here at the University of Tsukuba. I fully intend to use the knowledge I have gained regarding problem identification and pitching in my future research.