

## **Experience at the Translational Research Bootcamp 2024 SPARK Taiwan**

### **Adeline Castro Ramos- PhD student Medical science program.**

SPARK, through the bootcamp course, emphasized the essential topics of education and mentorship needed to advance research discoveries from the laboratory to clinical application.

The bootcamp featured several speakers who are senior advisors from Stanford University, all of whom have extensive experience in translational research and biomedical startups. These sessions, led by highly experienced professionals, provided participants with a comprehensive understanding of translational research and the skills necessary to navigate the intersection of science and entrepreneurship.

The covered subjects included the Target Product Profile (TPP), which serves as a strategic instrument to direct the development of a medical product in order to achieve specific desired attributes. The workshop also addressed the forms of funding, such as angel funding and venture capital (VC), and provided insights into the advantages and stakeholders associated with these funding options. Additionally, case examples of both successful and unsuccessful enterprises were presented.

An important concept was derisking a proposal. This means that from the very beginning, from the bench, one must keep the final goal in mind. If the development process is not planned correctly, it can lead to inefficiencies, high costs, and a high chance of failure. The right start leads to the right end.

The regulatory structure for biomedical equipment was also addressed. The development process, as well as the regulatory processes such as the US FDA Premarket Notification 510(k), enable commercialization in the US market.

Throughout the 3-day program, in addition to the lectures, three important tasks were organized: group interaction, exchange, and project presentation. Teams were assigned a task of presenting an elevator pitch of their proposal, based on the model discussed in the lectures. The model needed to be focus on resolving a medical issue through a product-oriented approach and required teams to include a competitive idea together with a business framework. The work process began with an intense brainstorming session about possible solutions to unmet medical needs. This initial phase involved characterizing our idea or product and assessing its feasibility in terms of indications, administration and adverse effects. During the course of three days, each team thoroughly analyzed and clarified every aspect relating to their proposed concept.

The final product presented by my group was XPLININ, a tool for regenerative medicine. We suggest that the enhancement of decompressive surgery in spinal cord injury could potentially be advantageous with the utilization of our product: XPLININ, which consists of soluble factors produced from MSC combine in 3D structure. After presenting our idea, my group received an award and acknowledgment from the panel of advisors, winning the pitch, which was highly gratifying.

Besides group interaction, SPARK provided a space for professional exchange and collaboration. This environment was ideal for meeting new people and fostering future connections and collaborations.

A significant personal achievement from the bootcamp was the understanding of the concept of derisking a proposal, which is especially useful in basic research. Derisking strategies involve creating a clear plan with specific clinical context goals and milestones.

In my case, my current project focus on the factors secreted by stem cells, been my interest to characterize these factors for use in surgical settings. Therefore, to achieve the goal of translating bench research to clinical settings, my proposal must focus on this objective throughout its development. This key concept will help to enhance my current work significantly.

The ideal candidates for this program are those eager to learn, whether they are academics or entrepreneurs. Both groups can greatly benefit from the bootcamp. SPARK Global and SPARK Taiwan successfully coordinated a high-quality bootcamp tailored for professionals with a keen interest in startups. The program provided excellent guidance and support for the entrepreneurial process, hence enhancing the probability of success for participants' ventures. In addition, it was advantageous for academics aiming to acquire knowledge in the area of translational research to reevaluate and improve their own projects. All individuals involved in science share the goal of making a positive impact on society. This objective is supported and facilitated through SPARK.

I am grateful to the University of Tsukuba, SPARK Global, and SPARK Taiwan for this opportunity, which has motivated me to become more involved in this field and to gain deeper understanding.

**Adeline Castro Ramos**