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| Home University | FH Technikum Wien |
| Study program | Tissue Engineering and Regenerative Medicine |
| Host University | Duke University School of Medicine |
| Host laboratory | Tata lab, Department of Cell Biology |

Field Report

In the course of my master's program 'Tissue Engineering and Regenerative Medicine' I did a practical training semester at Duke University in North Carolina. I had been seeking for an institution performing biomedical research, preferentially in the field of establishing new methods according to the 3Rs (replacement, reduction and refinement of animal-based research). Therefore, reading about the particular focus of Dr. Tata's work, concerning lung organoids on chips, immediately aroused my interest. In my opinion, the 'lab-on-a-chip' technology is the next level in creating human-based methods for preclinical studies, as it provides a miniature system of human organs (the organoids), which can be used to gain sound scientific results in much shorter time. Moreover, I think we are just at the beginning of understanding the vast opportunities offered by this system. Therefore, I appreciated the opportunity to gain experience in working with this thrilling new technology, and was delighted to become part of Dr. Tata's research team at Duke University.

The project was conducted at the Department of Cell Biology, which is headed by Dr. Brigid Hogan. Her laboratory is working on lung development and pathologies as well. Therefore, Dr. Tata's laboratory and Dr. Hogan's laboratory are collaborating in many projects, and holding meetings together every week. The presenters in these meetings are the employees of those laboratories, and are rotating every week. The 'Lab meeting' is held in order to allow the researchers to present their own findings, and to obtain new ideas through stimulating discussions. During the other meeting, named 'Journal club', a recent paper is presented, whereby the topic was relatively free to choose. I participated in both of these meetings and presented two papers at the 'Journal club', and my own data at the end of the internship. Critical questions and varying views were very helpful to determine the scientific value of a specific paper, and to establish important conditions and the framework for our own projects. Apart from these meetings, collaboration also existed in conducting the practical work. For instance, certain equipment, reagents, and sometimes even cells were shared between the laboratories. Moreover, every researcher specialized in a particular area, which was very helpful when related questions arose. I profited from these different expertises of my colleagues, from both laboratories, who were very friendly and patient in explaining and discussing certain matters. I was very impressed by the extensive knowledge of many of my colleagues, and grateful for their support. Regarding the practical work, I initially learned most of the techniques from our lab technician, who introduced me to every method that was new

to me. Therefore, I am especially thankful for her help. In addition to collegial cooperation, it was also fun to spend time with my colleagues. Once the whole department went to the coast for a so-called retreat weekend, during which many of my colleagues presented their findings. However, apart from the scientific program, there were also many leisure activities, such as quizzes and a lab Olympiad, which were very entertaining. Especially playing the different games of the Olympiad together with my Tata lab colleagues was much fun, and certainly improved our cohesion as a team.

I am confident that I have acquired some new scientific skills as well as personal qualities during my stay in the US. Apart from gaining theoretical knowledge and laboratory experience in many areas, I was introduced to working as part of a research team, while at the same time being responsible for planning, organizing and reporting my own laboratory work. In addition, my language skills have improved considerably, especially regarding everyday language. Overall, I am sure that this experience will be advantageous for my prospective work as a researcher, even if I stay in Austria.

I can only recommend everyone to use this opportunity and spend a semester abroad. It will not only give you insights in working in an international environment, but also broaden your horizon by cultural exchange. I have really learned a lot from my stay in the US, not only about America, but also about living in many other countries, through conversations with people from China, Taiwan, Japan, India, Poland, Germany, Mexico, Colombia and many more. If you have the chance, a semester abroad is the perfect opportunity to improve your English, get to know people from other countries and learn a lot about different cultures. Moreover, it is relatively easy to obtain a visa as a student, which is not always the case if you would want to stay for a longer time. And of course, apply for the Marshall Plan Scholarship if you are planning to go to the US, as it will cover essentially all costs of your stay! Depending on the state, you can also use your European driver's license to rent a car, which is particularly useful in more rural areas. Without a car it is rather difficult to visit different places. I would recommend to plan at least 2-3 weeks during your stay to travel and get some impressions of the country. If possible, try to arrange for some vacation in the middle of your internship, so that you have time to prepare everything in advance, but avoid the stressful time in the end when you are close to submitting your thesis. Last but not least, it is a good idea to join some sports club, or other leisure activity organization. This is very helpful in getting to know people outside of your working place, and allows you to find friends easily, especially in the beginning when you don't know anyone. Duke University, for instance, offers a large variety of activities, such as martial arts, basketball, climbing, swimming, dancing, and many more.