

From Catalonia to Wädenswil ... – and back



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Die spanische Mikrobiologie-Bachelorstudentin Mireia Marcé Escursell kam für ein Gastsemester ans IUNR. Sie brachte nicht nur eine theoretische und praktische Lernerfahrung im Ausland mit nach Hause, sondern auch wissenschaftliche Resultate, die sie selber an einem internationalen Kongress in ihrem Heimatland vorstellen durfte. Ihre Geschichte erzählt sie eigenhändig im IUNR intern. (F. Rezzonico, Betreuer)

Three years ago, when started my Bachelor in Microbiology at the Autonomous University of Barcelona (UAB) I already knew that I wanted to spend a semester abroad. So when the time came, I started to look for a university that would emphasize practical training over theoretical input. For this reason, I ended up choosing the IUNR and the ZHAW.

At the beginning, I suffered from a type of jetlag due to the fact that there are some differences in living habits between Switzerland and Spain. For example, the canteen at the IUNR is open from 11:30 to 13:00, thus closing at just the time when someone in my country barely starts thinking about going for lunch. Also, having four-hour classes on the same subject was a new experience for me, so I had to learn to stay focused on one topic for a prolonged period of time.

During my visiting semester, I attended five different modules. I particularly enjoyed two of these, namely Environmental analysis (EA) and Molecular Biological Analysis and Application (MBAA), as they allowed me to readily apply the theoretical knowledge I had learned in practical skills. The latter course, for example, was organized in such a way that practical experiments

closely related to the current topic were performed in the lab during or immediately after each lecture, a fact that greatly enhanced the learning effect. I could thus consolidate my knowledge in molecular biology while learning new techniques, which was exactly what I had hoped to obtain from my period of study at the IUNR. Small classes were also a factor that allowed me to take full advantage of the lectures and practical courses: our group comprised just seven people, which was a totally different situation compared to my home university where all lectures are attended at least by sixty students.

The MBAA module served also as the ideal stepping stone for my semester assignment 2 (SA2), which I carried out on a topic proposed to me by the Environmental Genomics and Systems Biology (EGSB) research team. This allowed me to work on a practical project of my own within the team's current research topics, as well as to gain further experience in microbiology. The aim of this study was to understand why only a certain type of streptomycin resistant bacteria is present in field populations of *Erwinia amylovora* (the causative agent of fire blight in apple trees) after they have been exposed to this antibiotic in the orchards, whereas many other different variants are possible under laboratory conditions. The experiments performed during my SA2 indicated that, even though the level of resistance among the different variants was comparable, of all the DNA mutations leading to streptomycin resistance, only one could effectively grow as well as the



A single mutation in its DNA sequence can make fire blight bacterium *Erwinia amylovora* resistant to high levels of the antibiotic streptomycin.



Mireia Marcé Escursell at the 1st International Symposium on Fire Blight of Rosaceous Plants in Girona (Spain) where she presented the results of her work at the IUNR.

Photo: Fabio Rezzonico

wild type under conditions simulating the flower environment. The results obtained were so interesting that my supervisors (Dr. Fabio Rezzonico and Dr. Theo Smits) proposed that I present my data at the 1st International Symposium on Fire Blight of Rosaceous Plants that was to be held from 5th July to 8th July in Girona (Spain), just few kilometers away from my hometown. Presenting my results in front of an audience of top specialists in the field was a really exciting and enriching experience for me. I had the opportunity to meet and talk with renowned scientists and to have an active role in an international scientific conference. Besides my supervisors, I have to thank Yvonne Christ (International Coordinator at the IUNR), who sponsored the registration fee, for giving me this incredible opportunity.

Switzerland never failed to surprise me during these five months: the well-maintained streets, the breath-taking green views and the awesome landscapes were totally astonishing. Life here has been a really cool experience. I was able to meet lot of Swiss people from the different language areas and experience their ways of life and traditions. Moreover, I shared a flat with five students from four different countries (the Czech Republic, Egypt, Germany and Hungary), who also taught me something about their cultures and allowed me to further broaden my horizons. I really enjoyed my time in Switzerland and at the IUNR: I've met lot of incredible people whom I will never forget, and I have learned and enjoyed my time here more than I could ever have imagined. I would really recommend this experience to other

students all over the world – coming to the IUNR was definitely the right decision!

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