Estrella Luna-Díez

Estrella Luna-Díez is an Associate Professor in Plant Pathology at the University of Birmingham, UK. She leads a research group which investigates plant immunity at the molecular, genetic, biochemical and epigenetic levels, with the ultimate aim of improving plant disease resistance.

Tell us about your background. How did you first become interested in plant science, and plant pathology in particular?

I studied a Bachelor of Engineering degree in Agronomy at the University Jaume I of Castellon in Spain, so I was exposed to every aspect of plant science from the very first stages of my higher education. During my MSc project at the Polytechnic University of Valencia, I focused on plant pathology and on studying the plant immune system. From there I moved to the UK to do my PhD at Lancaster University and Rothamsted Research, focussing on priming of defence in plants, so going deeper into plant responses to diseases.

What are you working on currently?

My lab at the University of Birmingham currently studies long-lasting priming of defence in different plant systems, from *Arabidopsis* to crops such as tomato and strawberry, to forest tree systems including oak and ash. We study the epigenetic mechanisms marking long-lasting priming and how these are affected by climate change conditions such as enhanced levels of atmospheric CO_2. A big part of my lab works on a project called MEMBRA (membra.info): Understanding Memory of UK Treescapes for Better Resilience and Adaptation, where we study trees' memories of biotic and abiotic stresses. This is a

large multidisciplinary project which also includes work with humanities research and with artists, which allows us to come out of our comfort zone and explore the wider implications of our research in molecular biology.

What does a typical day look like for you?

Before the pandemic I used to work from campus regularly, however I now work from home about 30% of the time. Normally my day involves doing the school run and then heading to campus for meetings with my group or with students. I teach in several modules and have undergraduate and postgraduate students that may need supervision in the lab. In the summer months we also do fieldwork, and in the very early mornings before the rush hour you can find me heading to the estates where we have our experiments.

What do you most enjoy about your work?

Definitely the social and networking component. I really enjoy meeting people, talking science, and developing ideas that can be tested in collaboration with wider disciplines.

> "In the future I want to focus more and more on these fascinating [forest] systems as they are an unexplored source of knowledge"

What do you find most challenging?

The most challenging thing for me is when a grant application is rejected. Rejection is the rule in academia and that is something that every scientist needs to know from the beginning, however it still hurts when a proposal that was so good in my head doesn't make it through. The idea that all those hypotheses won't be tested in the end is very challenging for me.

What are you hoping to work on in the future?

Since I moved to Birmingham over 4 years ago, I have been working with forest systems and I have really enjoyed it so far. In the future I want to focus more and more on these fascinating systems as they are an unexplored source of knowledge.

What advice would you give to aspiring scientists in this area?

To be open to collaborations in fields that are not that familiar to them. Not only can this open funding possibilities, it can also take their science to a whole new level.

Who are your scientific heroes?

Whereas I wish I could have met some pioneering female scientists such as Marie Curie or Rosalind Franklin, my real scientific heroes are current scientists that have mentored me and supported my career from the beginning: Prof Sarah Gurr and Prof. Brigitte Mauch-Mani.