FLYING CAT
ELISA DOMÍNGUEZ-HÜTTINGER

Elisa Domínguez-Hüttinger is an Austrian-Mexican systems biologist specialized in constructing and analysing mathematical models of complex diseases. She was born in Mexico City and educated at the National Autonomous University of Mexico (Bachelor in Biology, 2004–2008) and the Imperial College London (MRes in Systems and Synthetic Biology, 2009–2010; PhD in Bioengineering 2011–2015). She then embarked on a short but diverse postdoctoral journey that took her to Japan (RIKEN-Yokohama in 2015 and the University of Osaka in 2019) and back to her home university in Mexico, where she is now an associate professor. Elisa has a strong interest in understanding slow pathophysiological processes that affect epithelial tissues including the epidermis (e.g., atopic dermatitis), the airway epithelium (e.g., infection by Streptococcus pneumoniae), and the mammary tissue (e.g., cancer). Using mathematical modelling, her research group contributes to understanding, diagnosing, preventing, and reverting these complex diseases. Elisa has published one textbook and 12 peer-reviewed research papers, two of which were finished at Wiko. – Address: Departamento de Biología Molecular y Biotecnología, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Ciudad Universitaria, 04510, México, México. E-mail: elisa.dominguez@iibiomedicas.unam.mx.

My strong connection to Wiko started when, still in Mexico, I received an e-mail from Vera Pfeffer titled: "Flying cat." As the name suggests, it was about the travel arrangements for my research stay companion, my cat Malte, who travelled with me to the wonderful Grunewald from Mexico City. As soon as that e-mail hit my mailbox, I felt that this is getting serious and that Wiko truly meets our needs and necessities. I was right; from

the very day of our arrival until the last day, Malte, Iñaki (who joined us later), and I felt totally welcomed and at home and could enjoy every minute of our stay.

I arrived at Wiko at a very special point in both my professional career and my personal life. In September 2021, when I started my College for Life Sciences fellowship at Wiko, I had been less than a year at my current (dream) job in Mexico City as a very newly appointed associate professor in the Departamento de Biología Molecular y Biotecnología, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México (UNAM). Given that I started my appointment at UNAM during the pandemic, I hadn't had the chance to have any in-person conversations with my peers and colleagues. Hence, I had to navigate this new world of leading a research group by myself. It was a very big jump in my career to become lab head, and, although excited, I felt anxious and at times lonely. Being at Wiko really helped me to put things into perspective, to plan my career, to get over the impostor syndrome, and to finally submit the first papers of my own lab (see references). For all this, talking with my colleagues at Wiko was incredibly helpful. First, my more-experienced (aka tenured) Co-Fellows were kind enough to give me career advice and patiently listened to my complaints about the hurdles (and of course joys) of having to graduate students. Second, my College for Life Sciences peers, who were at the same career stage as me, really made me feel part of a group and that we are not alone on this path. Finally, but equally importantly, the advice, networking, and companionship of Dr Jana Petri, our College for Life Sciences Coordinator, were of great help.

On a personal note, I was at the same time going through my first big loss: my father had just passed away a couple of months before I arrived at Wiko. In fact, he still learned the news of the offer of the College for Life Sciences fellowship and was happy and proud for me and advised me to accept the offer (which was not easy in terms of the bureaucratic arrangements I had to make at my home university). Indeed, it was the last good news he heard from me about my academic career. My father was also an academic, and therefore he really understood how important it was for me to go to Wiko. Furthermore, he, like my mother, was a historian, and therefore I felt immediately at home in the (from my life-sciences perspective) slightly more social-sciences-oriented Wiko. Thus, while my stay in Berlin was shadowed by my personal grief, it also helped me to get closure. Coincidently, by the end of my stay, Jana Petri got us tickets for the Mozart Requiem at the Berlin Philharmonie – one of the strongest and most emotive experiences I had in my life.

I deeply enjoyed the interdisciplinary conversations with my Co-Fellows at Wiko. Regular scientific exchanges with my College for Life Sciences peers allowed me to deepen the scope and my understanding of my own research. Also, the conversations with colleagues from other disciplines were enjoyable and insightful beyond belief. To my surprise, one of the academic conversations I enjoyed most was with my Theology Co-Fellow during a Thursday dinner, made possible thanks to how disciplinary boundaries regularly vanish at Wiko and, maybe, the non-negligible amount of wine we consumed that night.

But it was not only during dinners that I enjoyed fantastic interdisciplinary conversations. Another one of the big highlights of my stay in Berlin happened regularly just after the Thursday dinners: the Wicked Wiko Runners Club. Friday mornings, no matter how much wine / how little sleep we had had the night before: we ran, to Grunewald, Drachenberg, Kiesgrube… Admittedly, under these circumstances it was not easy for me to keep up with the running distance, speed, and, of course, the ever smart and interesting conversations, all under Daniel Schönpflug's guidance. It was a challenging but extremely enjoyable experience I dearly miss.

Along the same line, I also deeply enjoyed our mini-biathlon series with my Co-Fellows Lars and Sophie – we started cycling to Krumme Lanke and swimming there in early September and did not stop until, already in October, we were running back in our swimsuits while the pedestrians were already walking in thick coats. I loved it!

Tuesday and Thursday Colloquia were also memorable experiences that re-ignited my love for seminars after these pandemic Zoom years. Hearing my colleagues talk with such passion about biology, the history of arts, politics, and philosophy was great, of course, but perhaps what I enjoyed most was preparing and giving my own seminar. Preparing my presentation for such an interdisciplinary group of people forced me think very deeply about my research. By putting into words and images why I chose my research question in the first place, I could see clearly again, decades after having chosen this career path, the reasons that motivated me to become a systems biologist in the first place. I felt again the fascination for biology and maths I had very early during my bachelor studies. It also allowed me to speculate more freely about possible future directions for my current research, which helped me to see more clearly the scope and limitations of my lab. Even today, I am still thinking about all the questions and feedback I got from my Co-Fellows.

The usefulness of this "Gain Time to Think" time became apparent very shortly after coming back to Mexico. The day I flew back to Mexico (with my cat, of course), I learned

that I had to submit a grant application within five days. Given that I had just given my Thursday Colloquium, and that all the discussions with my Wiko Co-Fellows were still very fresh in my head, I was able to write a successful grant application even in this short amount of time. My short time at Wiko really helped me take a big step in my career. Thanks!

During my 3-month stay at Wiko, I finished and submitted the papers (with acknowledgement to the College for Life Sciences fellowship):

1. Flores-Garza, E., et al. (2022). "Mathematical model of the immunopathological progression of tuberculosis." *Frontiers in Systems Biology* 2: 912974. doi:10.3389/fsysb.2022.912974.
2. Meave, J. A., et al. "Ecological modelling predicting dynamic trajectories of a protected plant community under contrasting conservation regimes: insights from data-based modelling" (under review).