



IMMERSION
ANDRÉ SCHNEIDER

I am a Professor of Biochemistry and former Director of the Department of Chemistry, Biochemistry, and Pharmaceutical Sciences at the University of Bern, in Switzerland. I studied biology and did my Ph.D. investigating the cytoskeleton of the parasitic protozoan *Trypanosoma brucei* both at the Institute of General Microbiology of the University of Bern. I then moved to the Biozentrum in Basel to do a postdoc on mitochondrial protein import in yeast. In a second postdoc at the University of California, San Francisco (UCSF), I combined the expertise on *T. brucei* I gained during my PhD with the insights into mitochondrial biology I obtained at the Biozentrum and helped to pioneer the field of mitochondrial tRNA import, using *T. brucei* as a model system. After returning to Switzerland, I became an independent researcher at the Biozentrum and then moved to the Department of Biology at the University of Fribourg, Switzerland, where I became a Group Leader and subsequently an Associate Professor. My work at the University of Bern focuses on both the ontogeny and the phylogeny of mitochondria, using *T. brucei* as an experimental system with the ultimate goal of shedding light on the origin of complex cells. During my career I have published more than 130 peer-reviewed research papers, but unlike my colleagues in the humanities and social sciences, I have no idea what it means to write a book. – Address: Department of Chemistry, Biochemistry and Pharmaceutical Sciences, University of Bern, Freiestrasse 3, 3012 Bern, Switzerland. E-mail: andre.schneider@unibe.ch.

“You will be a Fellow at the Wissenschaftskolleg zu Berlin next year.” “But you need a lab to do your research. What are you going to do there?” That was the valid question my colleagues asked me after I told them that I had been accepted as a Wiko Fellow. When

I tried to explain that each Fellow would spend an entire academic year working on a research project of their own choice and that the only mandatory duties of Wiko Fellows would be to eat together every day in Wiko's own restaurant and to attend the Tuesday Colloquium, they looked at me with a questioning look and didn't really understand. I have to admit that I could not blame them, because even though I had read a lot about the institution, I couldn't really grasp what it would mean to be a Wiko Fellow. Also, I thought that there must be some hidden catch that I would only learn about when I was there.

To understand the reaction of my colleagues, one has to know that Wiko is a prestigious institution in the humanities and social sciences, but hardly known in the natural sciences. Thus, as a biochemist, I learned about the existence of Wiko only in late 2018 in a conversation with a former Fellow, a Canadian evolutionary biologist. At the time I spoke with him, he was still very much under the influence of his Wiko stay, which he described as life-changing. This prompted me to do some research on the institution, and I found the motto "Gain time to think" very appealing. The molecular life sciences are very fast-paced and competitive and I often felt that we should give "time to think" higher priority. I was also intrigued by the interdisciplinary nature of Wiko, and the opportunity to spend an entire academic year in Berlin seemed attractive. After contacting former Fellows, I learned about the application process, which seemed quite mysterious to me at the time, and almost a year later (also thanks to Covid) I was officially invited to apply for a fellowship, which I gratefully did. Finally, I submitted my application, including my research proposal, and was accepted as a Fellow after a few rounds of evaluation.

Let me tell you about my research project. My original plan was to write an authoritative review on how the cellular machineries that transport proteins across biological membranes evolved – a question that is highly relevant for understanding the origin of complex cells that all plants and animals, including ourselves, are composed of. In the first two months after my arrival in Berlin, however, I realized that this was far too ambitious. Much time had passed since I had submitted my research proposal, and a number of reviews on the same topic had been published by others. I also learned that remotely supervising my research group at the University of Bern would take more time than I had anticipated. After a while, however, the motto "Gain time to think" kicked in and I knew which project I wanted to pursue. I decided to write a review on the unusual mitochondrial genome segregation system of trypanosomes, the microorganism my research group works with. I had been interested in this topic for a long time, but due to lack of time I hadn't been able to follow up on this idea. Being a Wiko Fellow, time was now available.

This meant a lot of reading, much of which I did during my bike trips to the nearby beer garden in the middle of the Grunewald. The next step was to provide a concise description of the structure and function of the mitochondrial DNA segregation systems of trypanosomes. Moreover, and this was the main challenge, I had to make clear in the review that the seemingly unique DNA segregation system of trypanosomes is relevant for a deeper understanding of the most basic features shared by all genome segregation systems, including those of yeast and humans. The final manuscript contains a number of elaborate figures that took me a long time to compose and draw. During this process, I became interested in how to convey complex visual information in the simplest way possible. The many discussions I had with the other scientists, but also with the art historians in our cohort, proved to be very inspiring for this endeavor. The manuscript is currently being peer-reviewed for publication in a biochemistry journal, and I'm eagerly awaiting the reviewers' comments.

The most striking thing about Wiko, but also the most difficult to explain, is what happened to me (and I suspect to most of the other Fellows) as a result of being so deeply immersed for so long in a group of experts spanning the full range of academic disciplines. I had experienced a similar feeling at scientific meetings, but in those cases it was always in my own field and lasted only a few days. The immersion experienced at Wiko has a different quality; it is like living in an intellectual paradise. (This is not a very original statement, as a look at previous Wiko Yearbooks reveals that "paradise" is the most frequently used noun to describe Wiko). There are the classic academic events: the Tuesday Colloquium and others like the Three Cultures Forum. But for me, the most important element in fostering this immersion were the more than 200 meals I shared with other Fellows in the Wiko restaurant. Besides the excellent food and wine, in the case of the dinners, I had so many intense and highly inspiring discussions that were essentially always outside my comfort zone, because I was the only biochemist in our cohort. It is worth mentioning that based on statistical probability I would have expected that there would be at least one arrogant asshole among so many academics. But I think everybody in our cohort agrees that this was not the case; there was a lot of respect between all Fellows and partners. Everybody was very nice, approachable and open, even to critical discussions. (Disclaimer: I am aware of the alternative explanation, namely that I was the asshole and nobody told me.) – I learned so much at those dinners. I had no idea that art historians are trained in visual analysis in a way that scientists are not. So they may see things in microscopic images that scientists miss. I realized that I knew very little about

how historians work, and my vexing question about whether there were general patterns in history that repeated themselves was answered quite differently depending on which historian I spoke with. There was a time when I felt very foolish because I was the only one at the table (mind you, it was a big table) who had never heard of “Critical Theory.” Disclaimer: I still don’t know much about it, but I learned that the capital letters are very important. Another question that has been frequently discussed is the extent to which a researcher’s social and ideological background influences the interpretation of results in different research disciplines. It was clear to me that this is an issue in the humanities and social sciences. I was surprised, however, that although this is almost never an issue in my field of biochemistry, it is not necessarily the same for evolutionary biology and the study of animal behavior. Before my Wiko stay I would have associated the term “sottobosco” with an Italian dish, similar to “ossobuco,” a fantastic version of which was served in the Wiko restaurant. Now I know it means still life painting depicting the forest floor and that many artists in the 17th century used it to reflect on the archaic scientific theory of spontaneous generation. Considering the ever-growing and seemingly self-reproducing dustballs under our beds in the Villa Walther, this theory might have been abandoned too early. – A recurring theme in our discussions was ChatGPT and to what extent it will be a transformative technology. The reason was that artificial intelligence is highly relevant to all academic disciplines and that we all need to find ways to deal with it.

Did I like everything here in Berlin? No, not really. I could have done without the Berlin winter, when it is cold, uniformly dark grey during the day, and the sun already sets at four. That was tough at times and I will definitely appreciate the much better winter weather we have at home. Also the much-sung “Berliner Luft” is, at least from a chemical point of view (sorry I’m a bio-chemist) quite bad, the official air quality index is often insufficient and rarely really good. That is to be expected in such a large city as Berlin, but living in the very green Grunewald quarter, only ten minutes away from the large Grunewald forest, set in the middle of many lakes, one often forgets that.

Now my stay at Wiko is almost over. Tomorrow is the big party. Here are some final thoughts. When I came to Wiko, I didn’t know anything about medieval literature. After a year here, I still know nothing about it. But I fully understand the enthusiasm of the person who spoke about it in his colloquium. The same was true of almost all the colloquia. This is perhaps not surprising, since essentially all Fellows are interested in the same basic questions: Who are we? Where do we come from, and where are we going? The difference is in the aspects of these questions to which each scholar chooses to devote his

or her professional life. – When I came here, I had a lot of preconceptions about the humanities and social sciences. Has that changed? The answer is a resounding “yes” in many cases. But there are some exceptions. Apparently, trying to find repeating patterns or general principles is a no-go for some historians. I still have a hard time understanding this. In my research, I am also studying a very specific process in an exotic organism, but the motivation for doing so is the hope of uncovering general principles that apply to all organisms.

Can I now explain to my colleagues in Bern what Wiko is all about? I’m not really sure. – Not long ago, while procrastinating on a manuscript, I began to reflect on the many discussions we had about artificial intelligence, so I asked ChatGPT to tell me a joke about Wiko. The answer was: Why did Wiko organize a comedy night? Because even the most serious scientists need a little “Witz-senschaft” to lighten the mood! I found that joke hilarious, which clearly says more about me than it does about the joke. – But the friendship, wisdom, and inspiration I was able to experience at Wiko was definitely not artificial. – Wiko is one of those things that you have to experience firsthand to know what it is all about. And no, there is no hidden catch!