



RESILIENCE
MARY POSS

I am a veterinary pathologist (DVM, The Ohio State University, 1984) with additional degrees in Zoology (BS, Duke University 1975), Biochemistry (MS, The University of New Hampshire, 1979), and experimental pathology (Ph.D., Colorado State University, 1990). My research focus is on virus adaptation to changing host environments. My current collaborators cover almost all disciplines, and learning to effectively communicate with all of them is much harder than learning German. Articles: Wittekindt, N., A. Padhi, S. Schuster, J. Qi, F. Zhao, L. Tomsho, L. Kasson, M. Packard, P. Cross, M. Poss (2010) "Nodeomics: meta-transcriptomic exploration of a vertebrate lymph node microbiome." *PLoS One* 5(10): e13432. doi:10.1371/journal.pone.0013432. Li, L., A. Padhi, S. Ranjeva, S. Donaldson, B. Warf, J. Mugamba, D. Johnson, Z. Opio, B. Jayarao, V. Kapur, M. Poss, S. Schiff (2011). "Association of Bacteria with Hydrocephalus in Ugandan Infants." *J Neurosurg Pediatrics* 7:73–87, 2011. – Address: Center for Infectious Disease Dynamics, Penn State University. E-mail: maryposs@gmail.com

A recap of my experiences at Wiko must start with a very heartfelt thank you to the wonderful staff. I don't know how you manage it, but you create such a comfortable, unencumbered environment that it is virtually impossible not to flourish in any scholarly pursuit. I suspect that the excellent wine also contributes to this.

My time at Wiko was way too short. Biologists, be forewarned. Leaving a lab for more than a month or two is difficult, but the opportunity to think, read, and discuss new concepts and perspectives with the outstanding Fellows at Wiko is well worth every minute. Although the rich experience of living at Wiko is a composite of many factors, we are all

there primarily for intellectual reasons. The time to reason bolstered with the resources to support scholarly endeavors and opportunity for both solitary and collegial debate is not a hallmark of any academic environment that I have experienced. It takes some adjustment to get used to the freedom this allows and transitioning back to the incessant demand of hour blocks of your time in academic institutions is painful. Because of responsibilities to both research and students, I split my stay into two months in the fall and one month in the spring. This ended up being a good strategy both for my efforts with the focus group and because after a rather grueling academic semester I had a second opportunity to be extremely appreciative of the unique environment at Wiko.

I participated in a focus group, organized by Janis Antonovics, on disease resistance. Our group spent long and often lively hours discussing such questions as: How does resistance to infection evolve? Why is there extensive heterogeneity in resistance to infection in some populations but not in others? I study these questions from a different perspective in my own research, which addresses the molecular mechanisms of virus adaptation to changing host environments. As the only member of this ecological- and evolutionary biology-oriented group with a clinical and molecular background, many of the concepts were not intuitive to me and I had no fundamental knowledge of the basic theory so familiar to the other group members. Some concepts are still hard for me to embrace but I definitely have a better grasp of the theory: a tribute to the patience of all members of the group. My research collaborations span multiple fields. I have found that a major impediment to productive interdisciplinary research in the sciences is the inability to effectively communicate ideas and to consider the value of other perspectives. I suspect that constantly being confronted with new concepts and ideas from discussions with Wiko Fellows had a profound influence on the clarity with which ideas flowed in our group discussions. Several manuscripts will emerge from this group but the less tangible consequences of bringing a broadened vision to complex problems in disease biology are the more significant but long-term outcomes.

I was fortunate to also be able to interface with the other focus group on Dilemmas of Medical Practice in Africa. I had worked in HIV research for many years with emphasis on AIDS in Africa, so I was cognizant of some of the important health issues faced by African countries. Recently I've become involved in another research project in Uganda on neonatal sepsis. My contributions to these projects are on a molecular level (identification of unknown pathogens or studying mechanisms of disease), which can overshadow important issues of public health and access to care in research efforts to "cure" or "fix" a

pressing infectious disease. This group presented a notably different array of problems and issues than are typically considered for medical aid in Africa. It was a wonderful opportunity to be able to discuss health care in a broader context with David Kyaddondo and Herbert Muyinda, who are from Uganda, and the rest of this group, all of whom have extensive experience in different African countries. The more comprehensive insight on health problems in developing countries that this group provided to me has made me think more critically about prioritizing the collaborative efforts being developed on neonatal sepsis.

Every one of the Wiko Fellows and their partners was a pleasure to get to know. Although we all interacted individually at meals and in small groups, the dynamics of the entire group were at their best at Tuesday colloquium. The talks on their own were enlightening and I thoroughly enjoyed immersing myself in the topics and the presentation style – often so different than in the sciences – each Tuesday. The questions and comments from Fellows and staff following the presentation were as informative as the main topic, primarily because they focused aspects of the topic to me through the lens of someone with a very different academic perspective. These discussion periods also brought out the personalities and convictions of many of the Fellows that weren't evident in smaller groups. Follow-up discussions at lunch were often energetic, and on occasion threads wove through receptions and meals for weeks. This was a collection of people that I would never have had the pleasure to get to know under other circumstance and I now feel like I have friends who I would very much enjoy visiting in many corners of the world.

It was not all work. What a delight to be in a bike-friendly city. Berlin is a beautiful city to explore by bicycle. Each route into the city offers passage through a unique community, and a wide selection of cafes, pubs, and second-hand bookstores. Riding through the Brandenburg Gate illuminated at night en route back to Wiko is a memorable experience. I was in Berlin in 1990 and still am awestruck by the changes that have occurred. A bicycle provides just the right pace to digest both old and new, to stop at memorials and just explore what is around the next corner. The ride to Potsdam is especially beautiful. Sanssouci Park is impressive and well worth the trip. One didn't need to go very far for relaxation and inspiration, though. The series of house concerts throughout the year were very special and a highlight for me.

You asked nothing of us other than to do what we love to do, produce scholarly works, and give you a summary of our experiences at Wiko for the yearbook. The only real

drawback of being at Wiko is that after a few weeks of acclimatization, it becomes too easy to take the rich environment for granted. You simply don't need anything (well, perhaps a translation of the settings on the washing machine). Many thanks for the opportunity to participate in the Wiko.