

A Special Relationship

CCR and the NIH Oxford-Cambridge Scholars Program strengthen scientific training across the Atlantic.

Since Sir Winston Churchill first used the phrase in a speech in 1946, “the special relationship” between the United States and the United Kingdom has characterized the close cooperation and exchange between these two nations. In 2001, the NIH, which had only recently opened its doors to doctoral training programs, formed a partnership with Oxford and Cambridge Universities in order to create a doctoral program that capitalized on the strengths of both scientific cultures. The program would model the U.K.’s fast track to degree completion, while providing students with immersion in the collaborative, multidisciplinary, global research that characterizes modern science.

Fast forward 14 years, and more than 150 students have enrolled in the NIH Oxford-Cambridge Scholars Program (OxCam), 28 of whom joined CCR laboratories. An additional 30 European students, including four at CCR, have come through the Wellcome Trust, which has worked with the program to involve students from around the world and universities throughout the U.K. and Ireland.

Francis Mussai, M.D., D.Phil., an early recruit to OxCam, entered the program after a clinical fellowship at Johns Hopkins University. “I left the U.K. to gain a unique training experience, a different life experience, and broader research and clinical exposure,” said Mussai.

Through OxCam, he had the opportunity to work first with Ira Pastan, M.D., Co-Chief of CCR’s Laboratory of Molecular Biology, and then with Prof. Vincenzo Cerundolo, Head of the MRC Human Immunology Unit in Oxford, on two almost unrelated projects,

but for their intersection in cancer and immunology. With Pastan, he worked on antibody-conjugated toxins to treat childhood cancers and with Cerundolo, he studied the immunosuppressive microenvironment in acute myeloid leukemia.

“Both projects turned out to be a real foundation for my career,” said Mussai who is now Clinical Senior Lecturer in Pediatric Oncology at the University of Birmingham. Mussai is the U.K. lead investigator on a phase 2 clinical trial that builds on some of his work at NCI and is setting up clinical trials in Birmingham based on a concept developed from his D.Phil.

In contrast, Ambika Bumb, Ph.D., heard about OxCam through her (then) recently awarded Marshall Scholarship, a prestigious scholarship that brings 40 students from the U.S. to the U.K. to focus on any field of study. “I hadn’t finalized which university I would attend or which area I would focus on, but when I heard about OxCam, I got very excited,” said Bumb, who is now Founder and C.E.O. of Bikanta, a

nanotechnology startup in the San Francisco Bay Area.

Bumb worked with four different PIs—Martin Brechbiel, Ph.D., and Peter Choyke, M.D., in CCR and Prof. Peter Dobson and Prof. Lars Fugger in Oxford—to create a nanoparticle for multimodal imaging of disease. “Now a lot more labs are engaged in interdisciplinary work,” said Bumb. “But at the time, and just starting as a graduate student, it was a rare opportunity to work directly under four diverse labs and learn about all these fields. You have to be a certain kind of student who is willing to lead your project and sometimes even manage your PIs, but if you like that kind of challenge, it is incredible.”

With a project involving four PIs, Bumb may have been an exception, but current Wellcome Trust student, Coralie Viollet, agrees that time-management and people skills are critical for success in the program. “You have at least two PIs, they have their own agendas and from their perspectives, you are only around for two years. You can’t push them to meet your deadlines,” said Viollet.



(Photo: Courtesy of F. Mussai)

Francis Mussai, M.D., D.Phil.

(Photo: Courtesy of A. Bumb)



Ambika Bumb, Ph.D.

"There's so much that you cannot learn any other way than taking your research across the Atlantic. I had to take my samples, ship them on dry ice and keep my fingers crossed that they would come out on the other side intact."

Viollet came to the Wellcome Trust program from an engineering degree in France. As part of a six-month internship requirement, she joined the laboratory of Jiannis Ragoussis, Ph.D., in Oxford, where she subsequently hoped she might remain for her D.Phil. "I applied for the Wellcome Trust fellowship, but Jiannis and I knew that the process was very competitive. As compared to the OxCam program application, the Wellcome Trust requires a much more detailed research proposal up front, almost a year before you start your Ph.D.!" said Viollet.

Her research, working with Ragoussis (now at the University of McGill in Canada), Robert Yarchoan, M.D., Chief of CCR's HIV and AIDS Malignancy Branch, and Prof. Francesco Pezzella at Oxford, focuses on microRNA expression in cells infected with the oncovirus, KSHV. She and her three PIs had their first co-authored paper accepted for publication in April 2015.

"I honestly feel like I've learned a lot more than the average Ph.D. student because of the exposure to so many more techniques, mindsets,

people, and ways of doing research," said Viollet. She has helped others apply to the program and thinks she has a pretty good sense of who is going to make it. "Ultimately, it's how motivated you are in taking your project forward and pitching it."

A somewhat peripatetic lifestyle may be the downside to participating in a transatlantic doctoral program. "It's not always easy, especially socially. Just when you feel like you know your way around, your colleagues, and so on, soon after, you have to pack your things and go."

OxCam has organized several events to create closer ties among the students. "There was a lot of desire to create a community of these scholars," said Bumb. "My class was 14 people, split between Oxford,

Cambridge, and the NIH. There was a yearly colloquium, during which your PIs could also meet each other. There were also outings, including an Outward Bound experience, in which we spent 3-4 days in the wilderness together."

And, Viollet lives with her fellow students on the NIH campus in buildings that formerly housed the NIH Director and the U.S. Surgeon General. "We all happen to be in the same year, and the social support has been invaluable."

"My class is very tightly knit," said Bumb. "We stay in touch and visit each other frequently. Some of us have even ended up collaborating scientifically. They are still the people I consider my best friends."

CCR's OxCam graduates are working all over the world, in research, medicine, and industry. Bumb went on to two postdoctoral fellowships at the NIH before starting her own company. Viollet has plans to ultimately work in the pharmaceutical industry after completing her degree. Mussai completed clinical training before establishing a research group in Birmingham. He is a practicing physician in addition to a scientist.

"This is no cookie-cutter program," said Bumb. "The experience, and the outcome, are highly individualized."

(Photo: A. Harris, NIH)



Coralie Viollet