“Bimodal Adaptation of a Chimeric Poxvirus to Human Cells”

Research

Dr. Brennan’s research career has focused on the evolution of host-virus interactions. As a veterinarian and a molecular virologist, Dr. Brennan is deeply interested in understanding how viruses rapidly adapt to infect new species. He began his research career in veterinary school at Colorado State University studying non-domestic feline lentiviruses in Dr. Sue VandeWoude’s laboratory. He continued his work with lentiviruses at the University of Washington in Dr. Shiu-Lok Hu’s laboratory, where he discovered new isoforms of the host restriction factors TRIM5(α) and TRIMCyp in Old World monkeys. With Dr. Adam Geballe at the Fred Hutchinson Cancer Research Center, Dr. Brennan established an experimental evolution model of cross-species transmission, demonstrating that gene amplification can dramatically increase the species tropism of a poxvirus. Currently, he is an Assistant Project scientist in Dr. Rothenburg’s laboratory, investigating how this gene amplification can act as a “molecular foothold” to enable species-specific virus adaptation.

Publications

