



MMI 291 Seminar Series

Current Theme: Interdisciplinary Research

Winter Quarter 2020 – CRN 65452 Friday

Seminar – 12:10-1 p.m.



February 28

“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{alpha} 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

Species-Specific Host-Virus Interactions: Implications for Viral Host Range and Virulence. Rothenburg S, Brennan G. Trends Microbiol. 2020 January.

Experimental Evolution Identifies Vaccinia Virus Mutations in A24R and A35R That Antagonize the Protein Kinase R Pathway and Accompany Collapse of an Extragenic Gene Amplification. Brennan G Et al. Journal of Virology. 2015 October

Adaptive gene amplification as an intermediate step in the expansion of virus host range. Brennan G Et al. PLoS Pathogens. 2014 March.



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12:10 – 1 p.m.
GBSF 1005**

Medical Microbiology &
Immunology
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We hope to see you there!