Eberly Distinguished Lectureship in Immunology

Akiko Iwasaki, PhD, Waldemar Von Zedtwitz Professor of Immunobiology and of Molecular, Cellular, and Developmental Biology, Yale University School of Medicine, will present “Antiviral Immune Responses at Mucosal Surfaces” as the final talk of the 2016 Eberly Distinguished Lectureship in Immunology series. The talk will be at noon on Thursday, October 20, in Lecture Room 6, Scaife Hall.

Iwasaki seeks to further understand the mechanisms of immune defenses against viruses at mucosal surfaces. Her early research established the crucial role of dendritic cells in recognizing viral invaders and identified cellular mechanisms and receptors responsible for viral recognition in the genital mucosa. Iwasaki and colleagues have identified several key mechanisms by which innate immune signaling responds to viral infection. She has worked to resolve the paradox that vaccines against herpes simplex virus induce conspicuous T cell responses in secondary lymphoid organs but fail to protect against infection; they fail because the virus-specific T cells that the vaccines generate do not migrate into the genital mucosa, where they are needed for protection.

This finding led Iwasaki to develop the “prime-and-pull” vaccine strategy, in which standard vaccination is combined with injection of a chemokine to attract primed T cells into the vaginal mucosa. Primed T cells then differentiate into resident memory T cells locally to provide long-lasting protection against infection. The technique could protect against pathogens, including HIV, that enter the host via mucosal surfaces. Additionally, she is currently investigating immune responses to respiratory viruses like influenza and how outcomes are affected by seasonal temperature and age of the host.

Iwasaki received her PhD from the University of Toronto in 1998 and completed postdoctoral training at the National Institutes of Health before joining Yale University in 2000. She has received numerous honors for her research, including the Burroughs Wellcome Fund Career Award in Biomedical Sciences (2000), the Wyeth Lederle Young Investigator Award from the Infectious Diseases Society of America (2003), the Ethel Donaghue Women’s Health Program Investigator Award (2003), and the Burroughs Wellcome Fund Investigator in Pathogenesis in Infectious Diseases award (2005). In 2011, she received the AAI-BD Biosciences Investigator Award of the American Association of Immunologists and, in 2012, the Eli Lilly and Company-Elanco Research Award from the American Society for Microbiology. She has been a Howard Hughes Medical Institute investigator since 2014.