Group on Women in Medicine and Science Luncheon Seminar

September 19, 2012 • 12:00-1:00 p.m. in L-5095

Lynn Puddington, Ph.D.
Guest Speaker

"Optimizing Immune and Neurological Outcomes of Maternal-Transmitted Cytomegalovirus Infection"

Lynn Puddington, Ph.D., received her B.S. from Iowa State University at Ames, Iowa in 1978, her Ph.D. from Bowman Gray School of Medicine of Wake Forest University in 1984 and did her Post-Doctoral Fellow from The Salk Institute for Biological Studies of San Diego, CA from 1984 to 1986. Dr. Puddington was a visiting scientist for Cardiovascular Disease Research from 1986 to 1988 and then a Research Scientist from 1988 to 1991 for the Department of Cell Biology of The Upjohn Company in Kalamazoo, MI. She then joined the University of Connecticut Health Center, Farmington, CT in 1992. Beginning as a Research Associate from 1992 to 1993 and then an Assistant Professor from 1993 to 2000 for the Department of Medicine, Division of Rheumatic Diseases. Presently, Dr. Puddington is an Associate Professor for the Department of Medicine, Division of Immunology, University of Connecticut Health Center.

Her lab's research is focused on studying how the mother-child relationship can influence the early life origins of immune-mediated inflammatory diseases. They are identifying maternal factors that prevent (or enhance) the pathogenesis of allergic disease in the lung and gastrointestinal tract. They have designed and established reliable mouse models to address complex biological questions relating immune outcomes in offspring born to or nursed by allergic mothers. Their emphasis in studies using these models is to quantify the severity of symptoms pertinent to immune mechanisms that occur in humans. The goal is to evaluate immune parameters in adult offspring based on events originating during the intimate mother-offspring relationship in utero or during breastfeeding. While working on these projects, they realized that the fundamental mechanisms by which for offspring absorb maternal IgA or IgE during breastfeeding are not well understood. The data suggests that uptake of these antibodies is dependent on the neonatal Fc receptor for IgG (FcRn) expressed by intestinal epithelial cells, an idea inconsistent with its known binding specificity. They are currently in the throes of an exploratory project investigating this apparent dichotomy. Lastly, Dr. Puddington recently embarked on a new project designed to determine whether mother-child transmission of cytomegalovirus (CMV) in breast milk can generate sufficient anti-viral immunity in neonates to prevent the protracted viral shedding typical for infected children. She would like to optimize immune control of CMV in neonates as a means to prevent horizontal transmission to immune compromised individuals at risk for the detrimental effects of viral infection. More importantly, are able to demonstrate that maternal transmission of reactivated virus in breast milk (from immune mothers) can elicit anti-viral immunity in neonates sufficient to reduce viral load in the brain, significant neurological sequelae could be eliminated.

– A discussion to follow on balancing a successful academic work-life career. –