Ackert Hall, Room 120
Wednesday, April 23, 2025
4:00 P.M.

Coffee and Cookies
Chalmers Hall, Room 168
3:45 P.M.

Biochemistry & Molecular Biophysics Seminar

Neuronal control of Respiratory Syncytial Virus infection in early life

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Respiratory syncytial virus (RSV) is the most common cause of bronchiolitis and viral pneumonia in infants and young children. The crosstalk between neurons and immune and non-immune cells in the lungs develops from an early stage of life. However, it is unknown whether such crosstalk regulates inflammation and antiviral immunity in early-life infection. From the embryonic stage onwards, sympathetic nerve fibers innervate the lungs and airways and secrete the neurotransmitter noradrenaline that binds with β-adrenergic receptors for bronchodilation. One of the major research efforts of the Baral Lab is to understand how neural signals regulate the immune cell function and lung defense during respiratory viral infection in early life. Our findings demonstrate the role of sympathetic neurons and the β2-adrenergic signaling axis in protecting neonates from viral expansion and immunopathology to promote antiviral defense against RSV. The mechanism identified can offer a novel host-based therapeutic modality for controlling RSV infection.