

**GEORGE MASON UNIVERSITY
COLLEGE OF SCIENCE
BIOLOGY DEPARTMENT SEMINAR
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“Dissecting the hookworm infective process”

Hookworms are important parasites of humans and animals, infecting over 750 million people worldwide. In heavy infections they cause anemia and impair physical and cognitive development, and are particularly problematic in children, the elderly and pregnant women. A better understanding of the molecular biology of hookworm infection is required for the development of rational controls strategies and new drugs. The infective third stage larva (L3) is developmentally arrested until it enters a permissive host, when it receives a host-specific signal that initiates developmental pathways and progression to the adult stage. The obligate requirement for a vertebrate host makes studying the infective process of hookworms difficult. Fortunately, the L3 is analogous to the dauer stage of free-living nematodes such as *C. elegans*, and recovery from dauer has been used as a model for the resumption of development that occurs during infection. Using an in vitro assay, our lab has described and characterized an “activated” larval state in response to host like conditions. We have demonstrated the presence of conserved signaling pathways controlling activation, as well as conserved molecular components, between hookworms and *C. elegans*. I will discuss these advances and the role of activation in the life history of hookworms and similar parasitic nematodes.

TUESDAY November 3, 2015

3:00-4:15 PM

HUB 1,2