

# Johns Hopkins University

## Department of Biology Seminar Series

Thursdays, 4:00pm

For more information go to: <https://bio.jhu.edu/events>

Zoom link: <https://zoom.us/j/97925356454?pwd=bjNuTlYldU9BcXcrRFdleis2TVNadz09>

Mudd Room 100 - October 27th, 2022



Gira Bhabha

NYU School of Medicine

Skirball Institute

Department of Cell Biology

Host: Tatjana Treck

### “How microsporidia pathogens deploy harpoons to infect host cells”

Microsporidia are tiny, single-celled parasites similar to fungi that infect a wide range of animal species, from worms and honey bees to humans. In humans, these opportunistic pathogens can cause life-threatening infections in immunocompromised individuals. To initiate an infection, microsporidia harness a specialized harpoon-like invasion apparatus called the polar tube (PT) to gain entry into host cells. The PT is tightly coiled within the transmissible extracellular spore, and is about 20 times the length of the spore. Once triggered, the PT is rapidly ejected, within milliseconds, and is thought to penetrate the host cell, acting as a conduit for the transfer of infectious cargo into the host, to initiate infection. We combine optical microscopy, structural biology and structural cell biology to decipher the the 3-dimensional organization, dynamics, and mechanism of how this harpoon-like invasion apparatus works. Your thoughts from any perspective - host, parasite, physics, biology, mechanism, or other - are very welcome!