DEPARTMENT OF BIOLOGY | UNIVERSITY of WASHINGTON

Biology Seminar

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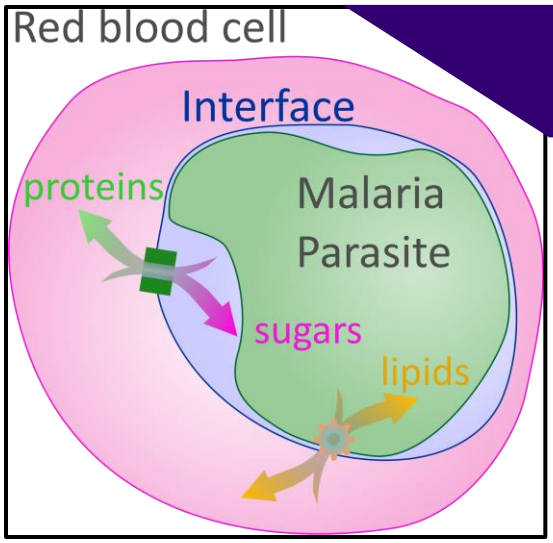
The Malaria Parasite – Red Blood Cell Interface: Transport to Survive in an Organelle-free Host Cell



Tuesday, April 13, 2021
12:00 PM GMT-7

To survive in its organelle-free host cell, the malaria parasite installs transport pathways for proteins, nutrients and lipids. All transport from and to the host cytoplasm takes place across the parasitophorous vacuole, the parasite's interface with the red blood cell. I aim to understand the mechanisms that allow the interface to function to reveal drug targets, make the parasite more accessible to treatment and scientific research, and aid realizing the parasites potential to re-engineer red blood cells for biomedical applications. Investigating how proteins, nutrients and lipids are transported across the host-parasite interface, I found that the pore of the *Plasmodium* translocon of exported proteins (EXP2) serves a second function as nutrient permeable channel. Further, I introduce the concept of micron-sized membrane contact sites bridging the host and parasite cytoplasm for transport of lipidic substances via the parasite's homolog of the Nieman-Pick C1 protein. By uncovering the structure-function relationship at the host-parasite interface, my work opens research avenues to understand how the parasite connects to and controls its host cell.

Seminar Speaker Host: Alex Paredez