TRMD 7820 Malaria

Professor: Don Krogstad

Credits: 2

Semester(s) Offered: Spring

Course Description:

This is an advanced course which provides a rigorous approach to the basic and applied issues related to malaria. Areas covered in detail include malaria epidemiology and control strategies, parasite-vector relationships, vector control, cell biology, and biochemistry of the parasite red cell interaction, drug action and resistance mechanisms, parasite genetics and cell biology, and the immunologic aspects of malaria, including asexual and sexual stage candidate vaccine antigens. At the conclusion of the semester, students are expected to critically review current strategies and suggest and defend appropriate alternatives.
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Learning Objectives:

Students will gain a broad perspective on malaria as a disease, ranging from description and analysis of the life cycle, to cell biology (ligands and receptors involved in parasite entry into the red cell and adherence to capillary endothelial cells), parasite biochemistry (as the basis of drug action and development), the host immune response (beginning with an understanding of humoral and cellular responses to the parasite and concluding with an update on vaccine development), animal models (because of the information they provide that cannot be obtained ethically from studies in human subjects), genetics and gene expression (in the parasite, the human host and the mosquito vector) and concluding with a current analysis of unsolved problems in malaria control, elimination and research (based on the student presentations).