

Dean's Colloquium
Dr. Indu Sharma
Associate Professor in Department of Biological Sciences



When: Wednesday April 19, 2023

Where: Turner 129

Times 3:30-3:50 pm and 5 minutes for Q&A

Title: Research and teaching as complementary spheres expanding student experience and enhancing faculty research

Abstract: Part I- Research: Members of the phylum bacteroidetes play a major role in the degradation of HMW DOM (High Molecular Weight Dissolved Organic Matter). *Cyclobacterium marinum*, a non-model marine heterotrophic bacteria, a bacteroidetes isolated from the Atlantic ocean near benthic water (~265 meters). The annotated whole genome (6.15Mb) revealed a large number of polysaccharide utilization loci (PUL), hydrolases, and transporters. The major question we are asking is “how the expression of numerous transporter systems are controlled by various sensory and regulatory systems in response to different Carbon-sources?” To address this question, we are utilizing global transcriptomic and proteomics approach. This research is ongoing and funded by National Science Foundation.

Part II- Teaching: The teaching and mentoring model developed in Dr. Sharma's research laboratory was being extended to her teaching curriculum. For this Dr. Sharma and team developed extended the Course-based Undergraduate Research Experience (eCURE) program in biology. It unifies three independent courses to provide students with research experience across three consecutive semesters. Thus providing students with the necessary laboratory skills for success in higher education or to join the work force.

Bio: Dr. Sharma received her Ph.D. in Biotechnology and Parasitology from All India Institute of Medical Sciences in 2002, and joined Hampton University in 2009. Dr. Indu Sharma Associate professor in the Biological Sciences department is a well-recognized researcher in the malaria and microbiology fields. Her research focuses on marine microbes and their ecophysiology. For this she utilizes high throughput methods such as genomics, transcriptomic, and proteomics in combination with traditional microbiological methods to understand the role of microbes in the environment, and ecophysiology. She actively seeks opportunities to enhance the biological curriculum. She coined the term extended Course-based Undergraduate Research program (eCURE). She worked with her colleagues and secured funding to implement eCURE in the biology curriculum. Her laboratory is funded by grants from National Science Foundation and private foundation. Her research and teaching style has brought in excess of \$2M to Hampton University.