

Biomedical and Health Informatics Lecture Series

**Tuesday, April 29, 2008
12:00 - 12:50 p.m., Room RR-134**

Peter Myler, Ph.D.

Research Professor, Pathobiology
Research Professor, Biomedical and Health Informatics
Adjunct Research Professor, Department of Global Health
University of Washington
Member, Seattle Biomedical Research Institute

“Informatics Challenges for the Seattle Structural Genomics Center for Infectious Disease”

The SSGCID's primary mission is to determine the structure of 75-100 protein targets from NIAID [Category A-C agents](#), as well as [emerging and re-emerging infectious disease organisms](#), each year for a period of five years. This mission will be accomplished by employing a [high-throughput gene-to-structure pipeline](#) involving a multi-pronged serial escalation approach to protein expression in bacterial, wheat-germ cell-free translation, baculovirus and mammalian systems followed by structure solution using X-ray crystallography and NMR spectroscopy. Proactive engagement of the infectious disease research and drug therapy communities in the target selection process will help ensure that the resulting protein structures provide a blueprint for structure-based drug design of new therapeutics to combat infectious diseases. We will discuss the informatics challenges in this project, including Target Selection, Data and Process tracking, Project coordination, data dissemination and community outreach.

The Myler laboratory is devoted to the discovery of novel drug and vaccine strategies against global infectious disease. Our work focuses on using molecular, genomic and bioinformatic approaches to study gene expression in protozoan pathogens and using high-throughput techniques to elucidate the structure of bacterial and viral proteins. Current projects include comparison of the trypanosomatid genomes, experimental analysis of protein-coding gene transcription in *Leishmania*, analysis of changes in gene expression during *Leishmania* differentiation, and structural genomics of infectious organisms.