

**BIOINFORMATICS 2017 Fall SEMINAR SERIES**

Hosted by: Department of Computer and Information Sciences,
Department of Electrical and Computer Engineering &
Center for Bioinformatics and Computational Biology
<http://bioinformatics.udel.edu/Seminars/Current>

MONDAY, November 27, 2017**3:30pm****DBI Room 102****Summer experience at Cold Spring Harbor Laboratory*****Saleh Tamim******Ph.D. Student, Engineering, University of Delaware*****ABSTRACT:**

CSHL is an international renowned institute with scientists working on a diverse research areas. In addition to research, as part of an educational component, CSHL offers a wide variety of courses throughout the year. This summer I had an opportunity to attend a course (Frontiers and Techniques in Plant Science) which is very much related to my research. In my talk, I plan to share the experience I had at CSHL.

**Design of a prokaryote-specific peptide array for analysis
of bacterial kinomes*****Giovanni Pagano******Masters Student, Computational and Systems Biology, University of Delaware*****ABSTRACT:**

While genomics can provide useful information about the changes underlying a cellular response to stimuli, a proteomics approach can give insight into the period immediately before phenotypic changes occur. Changes in protein activity are controlled by post-translational modifications, including phosphorylation by enzymes known as kinases. One method for quantifying kinase activity employs peptide arrays, which contain a series of peptides that mimic kinase target sites. By comparing relative levels of phosphorylation between two samples, significant differences in phosphorylation can be identified, as well as what types of signaling pathways may be involved. Species-specific peptide arrays have been previously used to study eukaryotic targets, but limited work has been done for prokaryotic organisms. This seminar presentation will outline methods for developing and testing a first-generation prokaryotic peptide array for use with *Salmonella typhimurium* and *Escherichia coli*. The talk will also outline some of the challenges in designing the array and how they were addressed, along with the development of a pipeline for automating the design process. Finally, potential applications for bacterial-specific peptide arrays will be briefly discussed, including the study of host-pathogen interactions or of kinase targets for drugs.