

Systems Biology Research Symposium Oral Presentation Session

Grand Ballroom
Tuesday, June 5th
7:00-8:30pm

New Understanding of Group A *Streptococcus* Pathogenesis Provided by Integrated Systems Biology Studies

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Genome-wide analysis of microbial pathogens and molecular pathogenesis processes has become an area of considerable activity in the last 10 years. These studies have been made possible by several advances, including completion of the human genome sequence, publication of genome sequences for many human pathogens, development of microarray technology and high-throughput proteomics, and maturation of bioinformatics. Despite these advances, relatively little effort has been expended in the bacterial pathogenesis arena to develop and use integrated research platforms in a systems biology approach to enhance our understanding of disease processes. We have exploited an integrated genome-wide research platform to gain new knowledge about how the human bacterial pathogen group A *Streptococcus* causes disease. Results of these studies have provided many new avenues for basic pathogenesis research and translational research focused on development of an efficacious human vaccine and novel therapeutics. New data stemming from use of an integrated systems biology approach to provide new data about group A *Streptococcus* pathogenesis will be presented.