



8th Annual
LLNL/LPC Science and Engineering Seminar Series
Theory to Practice: How Science is Done



**Computational Systems Biology:
Simulating life from microbes to humans**

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Monday, April 9, 2018
6:00-7:15 pm
Building 2400, Room 2420

Free and open to the public

Abstract: Over the past two decades, revolutionary advances in high-throughput technologies and computational approaches have led to the inception of systems biology, which aims to transform microbiology from a science which focuses on one specific cellular process or pathway, to one that the biology of the system as a whole is examined. This transformation has resulted in a deluge of system-level information about the components of living organisms. Integration and interpretation of these data through computational modeling provide us with mechanistic insights about cells that can be used by synthetic biologists to manipulate the biochemical processes within select organisms in order to achieve desired outcomes. At Lawrence Livermore National Lab, we develop and use a variety of different modeling methods to simulate behavior of biological systems of interests, such as those involved in production of biofuels, and development of drugs.



Dr. Ali Navid is a computational systems biologist in the Biosciences and Biotechnology division of Lawrence Livermore National Laboratory (LLNL). Currently he is the computational modeling lead of LLNL's biofuel and bioenergy-related scientific focus area. His research interests include analysis of complex biological problems such as host-pathogen interactions, microbial communities, and drug metabolism using state of the art computational modeling. He received his B.S. in Chemistry from University of Maryland and his M.S. degree in inorganic physical chemistry from University of North Dakota. He obtained his Ph.D in theoretical physical chemistry from Indiana University. He then did post-doctoral research as National Institutes of Health (NIH) Ruth Kirschstein-NRSA Fellow at Smith-Kettlewell eye research institute, followed by a post-doctoral fellowship at LLNL. His research has resulted in 15 peer reviewed publications, 3 book chapters and many national and international conference presentations. He also has edited a book on methods of microbial systems biology.