

The Third International Conference on Foundations of Systems Biology in Engineering (FOSBE 2009)

The reductionist approaches of molecular and cellular biology have produced revolutionary advances in our understanding of biological function and information processing. However, our inability to relate molecular components to their systemic function has greatly diminished the potential impact these efforts. The relatively new field of systems biology has emerged to establish a bridge between molecular level information and systems level understanding. The novelty of systems biology lies in the emphasis on analyzing complexity in networked biological systems using integrative rather than reductionist approaches. By its very nature, systems biology is a highly interdisciplinary field that requires the effective integration of scientists and engineers with different technical backgrounds and the interdisciplinary training of students to meet the rapidly evolving needs of academia, industry, and government.

The Third International Conference on Foundations of Systems Biology in Engineering (FOSBE 2009) sponsored by the CACHE Corporation was held August 9-12, 2009 at the Inverness Hotel and Conference Center in Denver, Colorado, continuing the two-year cycle of the FOSBE series, with successful conferences previously held in Santa Barbara, California (August, 2005) and Stuttgart, Germany (September, 2007). The primary objectives of FOSBE 2009 were to provide an in-depth review and critical assessment of the current state-of-the-art, to discuss current and future needs of research, education and training, and to identify new directions, opportunities, and challenges in systems biology. Approximately 100 attendees gathered to hear 21 distinguished speakers in six sessions on alternative fuels, circadian systems, drug development, network modeling and analysis, synthetic biology and systems biology education. A special roundtable discussion on federally funded systems biology programs was attended by representatives from the Army Medical Command, the Army Research Office and the National Cancer Institute. A unique feature of FOSBE 2009 was a training workshop for graduate students, post-doctoral fellows, young professors and industrial researchers. The objective of the day long workshop was to provide tutorial introductions to several important areas of systems biology through one hour lectures given by eight leading systems biology researchers and practitioners. The meeting closed with the presentation of the first Systems Biology Founders Award to Prof. Doug Lauffenburger (MIT) to recognize his exceptional contributions to the systems biology field.

Further information about FOSBE 2009 is available on the conference website (www.fosbe.org).