

SEVENTH INTERNATIONAL CONFERENCE  
Foundations of Systems Biology in Engineering

# FOSBE 2018

Hilton Chicago/Oak Brook Hills Resort  
Chicago, Illinois

August 5-8, 2018

**CONFERENCE CHAIR:** Juergen Hahn, Rensselaer Polytechnic Institute

**INVITED SPEAKERS:** Loveleena Bansal (GlaxoSmithKline), Marc Birtwistle (Mount Sinai Medical Center), Ali Cinar (Illinois Institute of Technology), Stephanie Culler (Genomatica), Yann Dufour (Michigan State Univ.), Hana El-Samad (Univ. of California-San Francisco), Matthias Heinemann (Univ. of Groningen), Chris Henry (Argonne National Laboratory), Steffen Klamt (Max Planck Institute Madgeburg), Josh Leonard (Northwestern Univ.), Krishna Mahadevan (Univ. of Toronto), Bernhard Palsson (Univ. of California-San Diego), Nathan Price (Institute for Systems Biology–Seattle), Chris Rao (Univ. of Illinois at Urbana-Champaign), Jennifer Reed (Univ. of Wisconsin – Madison), Casim Sarkar (Univ. of Minnesota), Uwe Sauer (ETH–Zurich), Jue Wang (Ginkgo Bioworks), Hans Westerhoff (Univ. of Amsterdam and Univ. of Manchester), Huimin Zhao (Univ. of Illinois at Urbana-Champaign)

## INVITED AND CONTRIBUTED PAPERS KEY DATES

Paper Submission Deadline: **February 3, 2018**

Paper Reviews Returned: **May 19, 2018**

Final Paper Submissions: **June 16, 2018**

## SESSIONS / THEMES

- Modeling of Complex Biological Systems
- Industrial Applications of Systems and Synthetic Biology
- Multi-scale and Multi-omics Experimentation, Data Integration, and Modelling
- Network Inference and Modeling
- Synthetic Biology
- Next Generation Networks and Tools
- Systems Biology of Cellular Metabolism
- Systems and Synthetic Biology for Biotechnology
- Systems Medicine



For more information, visit

[www.fosbe.org](http://www.fosbe.org)



**CACHE**



**Foundations of Systems Biology in Engineering (FOSBE) Conference**  
Hilton Chicago/Oak Brook Hills Resort, Chicago, Illinois  
August 5-8, 2018

\*\*\*\*\* The paper submission deadline for FOSBE 2018 has been extended to **Friday, 02/23/2018**. This is a hard deadline and no further extensions will be made. \*\*\*\*\*

On behalf of the organizing committee, I am pleased to invite you to submit papers (full length papers or 2 page short papers) to the 7th International Conference on Foundations of Systems Biology in Engineering (FOSBE 2018), which will take place in Chicago, Illinois, August 5-8, 2018.

The field of systems biology has emerged as the bridge between reductionist molecular and cellular biology approaches and the systems-level understanding required to use this knowledge. Drawing upon the revolutionary advances from reductionist approaches in molecular and cellular biology, systems approaches focus on the relationships between the gene, protein, and metabolite responses that compose the individual and population responses at the whole organism level. The primary avenues in this search are (i) defining the causal connections between the plethora of transcriptional, protein, and metabolite players; (ii) linking these microscale networks to system response; and (iii) capturing the dynamics of the system in response to changes at lower scales.

The primary objectives of the FOSBE 2018 conference are 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.

Major conference topics are:

- Modeling of Complex Biological Systems
- Industrial Applications of Systems and Synthetic Biology
- Multi-scale and Multi-omics Experimentation, Data Integration, and Modelling
- Network Inference and Modeling
- Synthetic Biology
- Next Generation Networks and Tools
- Systems Biology of Cellular Metabolism
- Systems and Synthetic Biology for Biotechnology
- Systems Medicine

For detailed information about the 7<sup>th</sup> FOSBE, visit <http://www.fosbe.org>

Deadlines

Contributed full-length papers	23 February 2018
Short papers	23 February 2018
Acceptance notification	19 May 2018
Final contributions	16 June 2018

Best wishes,  
Juergen Hahn

## **Foundations of Systems Biology in Engineering (FOSBE) Conference Overview**

The reductionist approaches of molecular and cellular biology have produced revolutionary advances in our understanding of biological function and information processing. A landmark achievement was the sequencing of the human genome, which produced for the first time a complete set of genomic information for our species. However, our inability to relate molecular components to their systemic function has greatly diminished the potential impact of the Human Genome Project and analogous efforts for proteins and metabolites. 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 Seventh International Conference on Foundations of Systems Biology in Engineering (FOSBE 2018), sponsored by the CACHE Corporation, will address challenges and opportunities in systems biology research and education. FOSBE 2018 will continue the series of successful conferences previously held in Santa Barbara, CA (August, 2005), Stuttgart, Germany (September, 2007), Denver, CO (August 2009), Tsuruoka, Japan (October 2012), Boston (August 2015), and Magdeburg, Germany (October 2016). We believe that the FOSBE conference series fills an important void within system biology offerings, with considerably more emphasis on bioengineering approaches, interdisciplinary education, and industrial applications than larger and more established series such as the International Conference on Systems Biology (ICSB). The primary objectives of the FOSBE 2018 conference will be 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 translation to practice, and to identify new directions, opportunities, and challenges in systems biology. We anticipate strong attendance from academia, industry, and government.