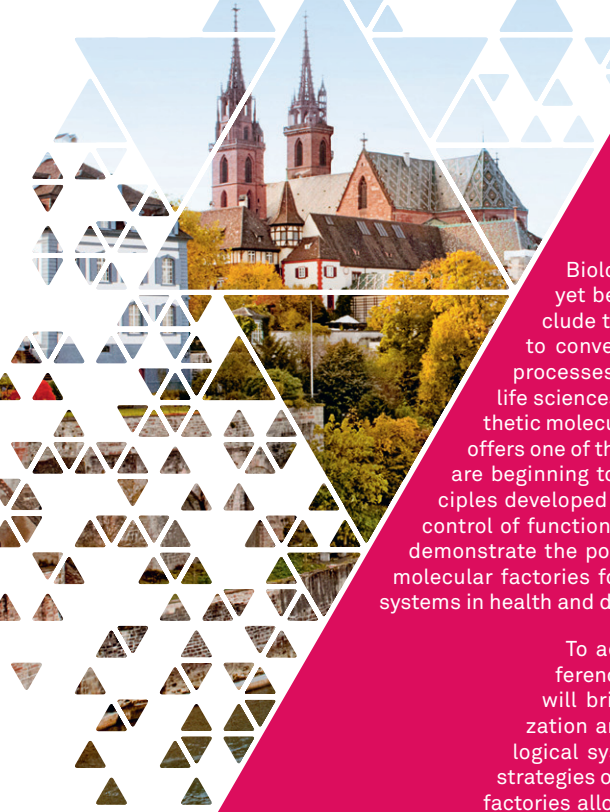
ICMSE 2017

International Conference Molecular Systems Engineering



2017 Basel: International Conference on Molecular Systems Engineering

Biological systems display properties that cannot yet be matched by synthetic approaches. These include the ability to adapt functionality, to regenerate, to convert energy and to control complex molecular processes. Implementing the insights and advances in life sciences into the structural and design options of synthetic molecular systems is a major scientific challenge and offers one of the greatest economic potentials of our time. We are beginning to understand the molecular engineering principles developed by nature and to use these in the design and control of functional biological systems. First exciting attempts demonstrate the possibility of using functional modules to build molecular factories for industrial production or to control cellular systems in health and disease.

To address this challenge, the International Conference on Molecular Systems Engineering (ICMSE) will bring together world leaders in the characterization and engineering of complex chemical and biological systems. The conference will highlight exciting strategies of assembling synthetic systems into molecular factories allowing the chemical modification and transport of molecular compounds, nanoreactors that convert energy and functional modules that work in complementary fashion to convey reactants along spatially designed reaction sequences. However, the conference will also highlight how these engineering approaches can be used for the development of cellular and medical diagnostics, for therapeutics, and for the control of cellular systems in health and disease. As these exciting examples highlight the beginning of molecular systems engineering they show a unique potential to address existing and future global challenges.

Presenting Partner Basel basel.ch

Hosted by NCCR Molecular Systems Engineering

What to expect?

The first International Conference on Molecular Systems Engineering (ICMSE) will take place at the University of Basel from 27 to 29 August 2017.

350 participants are expected and confirmed speakers include:

Stefan W. Hell
Max-Planck-Institute for Biophysical Chemistry, Göttingen, Nobel Prize in Chemistry 2014

Ben L. Feringa
University of Groningen, Nobel Prize in Chemistry 2016

Frances H. Arnold
California Institute of Technology, Pasadena

Lee Cronin
University of Glasgow

Hagan Bayley
University of Oxford

David Tirrell
California Institute of Technology, Pasadena

Bert Meijer
Eindhoven University of Technology

Andreas Plueckthun
University of Zurich

Joachim Spatz
Max-Planck-Institute for Medical Research, Stuttgart

Erik Winfree
California Institute of Technology, Pasadena

Krzysztof Palczewski
Case Western Reserve University, Cleveland

and many more to come.

Prior to the ICMSE, a pre-conference for students and postdocs will be held.

More about ICMSE:
nccr-mse.ch > Events > ICMSE

Register now online.