

The CACHE Systems Biology Task Force

Mike Henson

The Systems Biology Task Force was established by CACHE to develop educational materials for and to promote educational activities in systems biology with particular emphasis on engineering approaches and tools. Current members of the task force are Mike Henson (UMass, Chair), Frank Doyle (UCSB), Vassily Hatzimanikas (EPFL), Marianthi Ierapetritou (Rutgers), Claire Komives (San Jose State), Costas Maranas (Penn State), Tunde Ogunnaike (Delaware), Bob Parker (Pittsburgh), Linda Petzold (UCSB), Chen Su (Eli Lilly), and Dane Wittrup (MIT). Our recent activities have focused on the development of teaching modules for the core chemical engineering curriculum and the continuing development of the Foundations of Systems Biology in Engineering (FOSBE) conference series.

Last summer, Frank Doyle and Mike Henson offered an ASEE Summer School workshop on the incorporation of systems biology examples into the chemical engineering curriculum. The lecture notes are available to interested instructors. A team led by Frank Doyle will be preparing a NIH proposal on the development of diabetes teaching models for the chemical engineering curriculum. A series of four modules will be developed for the material and energy balance, kinetics and reaction engineering, process dynamics and control, and process and product design courses. We are currently planning the development of demonstration modules. Claire Komives has been leading the development of the Bioengineering Educational Materials Bank (BioEMB). She has been collecting, creating, and reviewing problems that can be incorporated into the material and energy balance course. The scale-up of the project to address all of the core undergraduate courses is currently underway. More information about the BioEMB can be obtained at the project website (www.bioEMB.net).

The Third International Conference on Foundations of Systems Biology in Engineering (FOSBE 2009) sponsored by CACHE will take place August 9-12, 2009 in Denver, CO at the Inverness Hotel and Conference Center. FOSBE 2009 will continue the two-year cycle of the FOSBE conference series, with successful conferences previously held in Santa Barbara, California (August, 2005) and Stuttgart, Germany (September, 2007). The primary objectives of the FOSBE 2009 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 to identify new directions, opportunities, and challenges in systems biology. We anticipate strong attendance from academia, industry, and government. Additional information is available on the conference website (www.fosbe.org).