The last two decades have witnessed the emergence and acceleration of a new paradigm in mathematical biology, which employs advanced methods in computational algebra and discrete mathematics toward modeling biological systems. The conference on Algebraic and Combinatorial Approaches in Systems Biology (ACSB) has as a core objective, to establish itself as a national forum for the presentation, discussion, and integration of current work in the field.

The ACSB 2015 will focus on diverse aspects of modeling of molecular networks, in particular gene regulatory networks, with an emphasis on discrete modeling approaches. In addition to models of molecular networks, it will explore questions such as the relationship between network structure and their dynamics. Integration of these topics into the educational curriculum will be discussed as well.

Invited speakers:

- Réka Albert (Pennsylvania State University)
- Hélène Barcelo (Mathematical Sciences Research Institute)
- Abdul Jarrah (American University of Sharjah)
- Shernita Lee (University of North Carolina Chapel Hill)
- Raina Robeva (Sweet Briar College)
- Karen Schlauch (University of Nevada, Reno)
- Brandy Stigler (Southern Methodist University)
- Michael Stillman (Cornell University)
- Bernd Sturmfels (University of California, Berkeley)