

Systems Biology Research Symposium Oral Presentation Session

Grand Ballroom
Tuesday, June 5th
7:00-8:30pm

Re-rooting the Tree of Life

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For over two thousand years mankind has struggled to make sense of the natural world and establish an ordered system whereby living organisms can be categorized. In the 18th Century Carl Linneaus published the *Systema Naturae* and in doing so established a classification system that endures to this day. With the publication of "On the Origin of Species" Charles Darwin firmly established the concept of common descent and established the simile of a "Tree of Life" to describe how all living organisms on Earth are related by way of common ancestry and evolution. In the 21st Century knowledge of genomes, particularly those of microorganisms, have caused us to rethink both our approaches to studying common descent of organisms as well the Linnaean hierarchy by which we group related taxa. Problems associated with lateral gene transfer, lack of fossils, and symbiosis have considerably challenged the traditional approach to these questions. What is now emerging is a new "Tree of Life" that encompasses Darwin's original concept of common ancestry viewed from the perspective of modern systematics.