Friday, July 21, 2017
EVOLUTION: COMPETITION, COOPERATIVITY, COMPLEXITY AND ECOLOGY
2:00 p.m. Price Center Theatre

Chair: Nick Hud

2:00 p.m. Lehman N. *
Molecular Cooperation: A Self-Less Origin of Life **[#4122]**
The role of molecular cooperation in the origins of life will be discussed. The distinction between reproduction and replication will be made, with a conclusion that the former preceded the latter, by recombination. The origins of life was self-less.

2:40 p.m. Furubayashi T. * Bansho Y. Motooka D. Nakamura S. Ichihashi N.
In Vitro "Evolutionary Arms-Races" Between Hosts and Parasites in an Artificial RNA Replication System **[#4081]**
We performed coevolution of artificial RNA self-replicators and parasitic replicators in microdroplets. We observed evolutionary arms-races with oscillating population dynamics and faster evolution of self-replicators caused by parasitic replicators.

3:00 p.m. Bansho Y. Furubayashi T. Ichihashi N. *
Host-Parasite Oscillation Dynamics and Evolution in a Compartmentalized RNA Replication System **[#4001]**
We have constructed an evolvable RNA-protein replication system. Here, we report that a parasitic RNA spontaneously appears in this system and shows oscillating population dynamics only when the system is compartmentalized.

3:20 p.m. Mizuuchi R. * Ichihashi N.
Darwinian Evolution of Mutualistic RNA Replicators with Different Genes **[#4077]**
We report a sustainable long-term replication and evolution of two distinct cooperative RNA replicators encoding different genes. One of the RNAs evolved to maintain or increase the cooperativity, despite selective advantage of selfish mutations.

3:40 p.m. *Coffee Break*