

Thursday, July 20, 2017

**THE INTERPLAY OF THE DIFFERENT SUBSYSTEMS FOR THE ORIGIN OF LIFE:
FATTY ACIDS OR OTHER COMPARTMENT-FORMING SYSTEMS/AMINO ACIDS/NUCLEOTIDES
11:00 a.m. Price Center Theatre**

Chair: Greg Springsteen

- 11:00 a.m. Joshi M. P. Rajamani S. *
[*Stability of Amphiphilic Systems in Terrestrial Hydrothermal Fields and its Implications for the Origin of Cellular Life*](#) [#4149]
Characterization of the stability of prebiotically relevant amphiphiles in hot spring samples collected from high altitude locations of Ladakh region in India; an Astrobiologically relevant site for studying life under extreme conditions.
- 11:20 a.m. Black R. A. * Gordon M. T. Cornell C. Ramsay A. Keller S. L.
[*Polymer Building Blocks and Dipeptides Stabilize Fatty Acid Vesicles*](#) [#4128]
How did the biological polymers, RNA and protein, became associated with a membrane? We present evidence that the building blocks of the polymers bind to fatty acid bilayers, and that this binding increases the formation and stability of membranes.
- 11:40 a.m. Tsuji G. Fujii S. Sunami T. Yomo T. *
[*Sustainable Proliferation of Liposomes Compatible with Inner RNA Replication*](#) [#4040]
We demonstrate the concurrent incorporation of nutrients and membranes into RNA-containing liposomes. The proliferation of liposomes, RNA replication, and distribution of the replicated RNA to daughter liposomes were observed compatibly by 10 cycles.
- 12:00 p.m. Fraccia T. P. Smith G. P. Todisco M. Zanchetta G. Clark N. A. Bellini T.
[*Liquid Crystal Self-Assembly of Short RNA/DNA Oligomers as Autocatalytic Pathway for Ribozymes Formation*](#) [#4065]
The collective behavior of short DNA/RNA oligomers and mononucleotides suggests a pathway by which linear self-assembly and spontaneous liquid crystal ordering might have enhanced the prebiotic formation of long and potentially active RNA polymers.
- 12:20 p.m. *Lunch*