

Wednesday, April 26, 2017

ORIGIN AND EVOLUTION OF LIFE: PREBIOTIC GEOCHEMISTRY:
ORIGIN OF LIFE: HYPOTHESIS II: FRESH WATER (POOLS ON LAND)

1:30 p.m. Arizona Ballroom A-C

Chairs: Bruce Damer
David Deamer

- 1:30 p.m. Deamer D. W. * Damer B. F.
[*Combinatorial Selection in the Prebiotic Environment*](#) [#3200]
An origin of life in fresh water hydrothermal fields in which wet-dry cycles drive polymerization and encapsulation of functional polymers.
- 1:45 p.m. Pearce B. K. D. * Pudritz R. E. Semenov D. A. Henning T. K.
[*Steps to the RNA World: Nucleobase Survival and Evolution in Warm Little Ponds*](#) [#3324]
We numerically model the survival and accumulation of nucleobases in warm little ponds on the early Earth.
- 2:00 p.m. Kim H. J. * Furukawa Y. Kakegawa T. Bitá A. Scorei R. Benner S. A.
[*Phosphorylation in the RNA First Model for Origin of Life. Lunenburgite and Other Exotic Minerals*](#) [#3178]
Regiospecific phosphorylation of ribo-nucleoside by lunenburgite which provide reactive phosphate in presence of calcium in wet-dry condition will be presented.
- 2:15 p.m. Liu J. * Morasch M. Braun D.
[*Strong Accumulation of DNA at a Heated Air-Water Interface*](#) [#3091]
DNA is accumulated >1000-fold near the contact line of an air-water interface in a temperature gradient, with implications for prebiotic polymerization.
- 2:30 p.m. Black R. A. * Gordon M. T. Cornell C. Keller S. L.
[*Interactions of Polymer Building Blocks with Fatty Acid Vesicles in Low Salt Support the Fresh-Water Origin Hypothesis*](#) [#3193]
We present evidence that certain prebiotic amino acids and dipeptides bind to and stabilize vesicles composed of a prebiotic fatty acid.
- 2:45 p.m. Joshi M. P. Vaidya K. Rajamani S. *
[*Stability of Amphiphilic Systems in Prebiotic Terrestrial Hydrothermal Fields and Its Implications for the Origin of Cellular Life*](#) [#3359]
Stability of fatty acid vesicles was evaluated in simulated prebiotic regimes and hot spring samples from fieldsites. Stability is niche and geochemistry dependent.
- 3:00 p.m. Mulkidjanian A. Y. *
[*Searching for a Consensus Scenario of Terrestrial Origin of Life*](#) [#3571]
The first cells could emerge at primordial anoxic geothermal fields, where the chemistry of the condensed vapor would resemble the chemistry of modern cells.
- 3:15 p.m. DEBATE
- 3:45 p.m. *Coffee Break*