Tuesday, April 25, 2017
ORIGIN AND EVOLUTION OF LIFE: THEORY/FUNDAMENTAL QUESTIONS: LAWS OF LIFE I
1:30 p.m. Arizona Ballroom E-G

Chair: **Sara Walker**
Stuart Bartlett
Douglas Vakoch

1:30 p.m. Pohorille A. *
The Origin and Early Evolution of Information Transfer in Biological Systems **[#3255]**
At the earliest stages of life, linear, genomic information transfer might have been preceded by a simpler, nonlinear information transfer system.

2:00 p.m. Steele A. *
A Prion-Like Protein Mediated Origin of Life — Polymers Not in Isolation **[#3613]**
I outline the properties of prion-like proteins that may have played a key role in the origin of life and the genetic code.

2:15 p.m. Kim H. * Davies P. Walker S.-I.
Information, Control, and Evolution of Cellular Networks **[#3559]**
We quantify characteristics of the informational structure of biological networks and study its influence on the control kernel of biological functions.

2:30 p.m. Branscomb E. W. * Russell M. J.
Does Life Use Energy? **[#3003]**
Contrary to general belief, and as Boltzmann himself understood, life is not powered by the consumption of energy, ‘free’ or otherwise.

2:45 p.m. Bartlett S. J. *
Energy Conversions in the Biological World: Efficiencies, Abundances and Limits **[#3348]**
This work presents an overview of the various energy conversions that life performs and compares the efficiencies and source abundances for those processes.

3:00 p.m. Popa R. * Cimpoiasu V. M.
Energy Fluctuations Drove the Selection of Information Variants and the Organization of Prebiotic Networks **[#3096]**
We simulated organization and selection of information in prebiotic networks. We pose that life has emerged in environments with variable energy availability.

3:15 p.m. Intoy B. F. M. * Wynveen A. Halley J. W.
Effects of Spatial Diffusion on a Model for Prebiotic Evolution **[#3301]**
We report the results of simulations of a Kauffman-like model on a spatial lattice, considering systems out of equilibrium to be lifelike.

3:30 p.m. Mathis C. * Walker S. I.
The Emergence of Dynamic Order in Autocatalytic Sets **[#3432]**
We used tools from statistical inference to characterize the organization of a toy chemical system.

3:45 p.m. *Coffee Break*