

Thursday, April 27, 2017

**ORIGIN AND EVOLUTION OF LIFE: EVOLUTION/GENETICS:  
CELLULARITY, MULTICELLULARITY, AND ENDOSYMBIOSIS:  
MAJOR TRANSITIONS AND THEIR IMPACTS ON THE BIOSPHERE  
4:15 p.m. Arizona Ballroom E-G**

**Chairs: Aaron Goldman  
Mary Droser**

- 4:15 p.m. Evans S. D. \* Droser M. L. Gehling J. G.  
[Highly Regulated Growth in the Ediacara Macrofossil Dickinsonia Costata and Implications for the Early Evolution of Animals](#) [#3047]  
This study highlights the morphology, growth, and development of Dickinsonia costata, an abundant member of one of the earliest macroscopic communities.
- 4:30 p.m. Mitchell E. G. \* Kenchington C. G. Liu A. G. Harris S. J. Wilby P. R. Butterfield N. J.  
[Testing Niche Versus Neutral Models of Ediacaran Community Assembly](#) [#3077]  
Ediacaran ecology was investigated using spatial analyses, finding a dominance of neutral processes in contrast to niche-dominated modern sessile communities.
- 4:45 p.m. Adam Z. R. \*  
[New Views of the Complex Eukaryote Tappania Plana from the 1.4 Ga Belt Supergroup, United States](#) [#3281]  
Exceptionally well preserved populations of Tappania yield a uniquely resolved view of the underlying biology of one of Earth's oldest unambiguous eukaryotes.
- 5:00 p.m. Fujishima K. Greenberg D. Kuruma Y. Mizuuchi R. Rothschild L. J. Ditzler M. A.  
[Can Peptide-RNA Coevolution Provide Unique Opportunities for Evolutionary Innovation?](#) [#3361]  
We have established an in vitro evolution system with random RNA and peptides to characterize the early interaction and co-evolution of the two biopolymers.
- 5:15 p.m. Shalaeva D. N. Dibrova D. V. Klimchuk O. I. Galperin M. Y. Mulkidjanian A. Y. \*  
[Evolution of Cellularity: Role of the Sodium/Potassium Homeostasis in the Emergence of Ion-Tight Cell Membranes, Membrane Bioenergetics, and G-Protein Coupled Receptors](#) [#3586]  
Several key cell systems may have developed from the system of potassium/sodium homeostasis.
- 5:30 p.m. Rosenzweig R. F. \* Yang D. D. Schwartz K. Sherlock G. Kinnersley M. Schmidt K. Rashkov P. Gudelj I.  
[Emergence of Complexity in Clonal Populations Evolving Under Constant Resource Limitation](#) [#3462]  
A single bacterial clone can evolve into a population teeming with many. Using theory and experiment, we show how complexity emerges in simple lab environments.