

Friday, April 28, 2017

**ORIGIN AND EVOLUTION OF LIFE: EVOLUTION/GENETICS:
CURRENT SUPERLATIVES AND CONTENDERS FOR “EXTREME” LIFE ON EARTH**

1:30 p.m. Arizona Ballroom E-G

**Chairs: Charles Cockell
John Rummel**

- 1:30 p.m. Leuko S. * Lamers G. Sebastian M. Sjöström S. Seiler A. Moeller R. Mancinelli R. Rettberg P.
[Halophilic Archaea as Prime Candidates for Astrobiological Research](#) [#3270]
We will present novel data about the resistance of halophilic archaea against outer space relevant stress conditions.
- 1:45 p.m. Rettberg P. * Bohmeier M. Rabbow E. Perras A. Schwendner P. Moissl-Eichinger C. Cockell C. Pukall R. Vannier P. Marteinson V. Monaghan E. Ehrenfreund P. Garcia-Descalzo L. Gomez F. Malki M. Amils R.
[Yersinia Intermedia MASE-LG-1, a Facultative Anaerobic Microbe from a Mars Analogue Environment Survives Diverse Individual and Combined Simulated Martian Stresses](#) [#3078]
Systematic anaerobic sampling of Mars analogue sites resulted in the isolation of a Yersinia strain, highly resistant against the martian environmental conditions.
- 2:00 p.m. Sun H. J. * McKay C. P. Georgiou C. D. Daly M.
[Why Desert Bacteria are Radiation Resistant?](#) [#3737]
In response to elevated photochemical oxidation, desert bacteria synthesize protective antioxidants and hence are radiation resistant.
- 2:15 p.m. Tirumalai M. R. * Stepanov V. Wünsche A. Montazari S. Gonzalez R. O. Martin K. Venkateswaran K. Fox G. E.
[Radiation Resistance - What Can We Learn From Endospore formers From Cleanroom Facilities?](#) [#3749]
Comparative genomics to understand radiation and peroxide stress resistance of the endospores of certain Bacillus species isolated from cleanroom facilities.
- 2:30 p.m. Lamprecht-Grandio M. Cortesao M. Benguigui M. Mirete S. Gonzalez-Pastor J. E. *
[Novel Ultraviolet Resistance Genes Revealed by Functional Metagenomics](#) [#3746]
UV radiation is harmful to life. Novel genes for UV-resistance in microorganisms highly exposed to UV radiation have been found by functional metagenomics.
- 2:45 p.m. Thweatt J. L. * Bryant D. A.
[Studies on Bacteriochlorophyll e Biosynthesis in Brown-Colored Green Sulfur Bacteria and Implications for Understanding the Lower Light Limits of Phototrophy](#) [#3180]
We characterize bacteriochlorophyll e biosynthesis in brown-colored green sulfur bacteria, which live in the lowest light intensities of any known phototroph.
- 3:00 p.m. Corkrey R. * McMeekin T. A. Bowman J. P. Olley J. Ratkowsky D. Macdonald C. Ross T.
[The Maximum Growth Rate for Life on Earth](#) [#3010]
We show that life on Earth has a minimum generation time of 5.16 minutes which occurs at 45.8C. We provide a non-biochemical diagnostic for non-Earth life.
- 3:15 p.m. Grettenberger C. L. * Wall K. Krusor M. Jungblut A. D. Mackey T. Sumner D. Y.
[Controllers of Microbial Community Composition in the Ice-Covered Lakes of the McMurdo Dry Valleys, Antarctica](#) [#3330]
Environmental conditions and dispersal limitation control of microbial community composition in the ice-covered lakes of the McMurdo Dry Valleys, Antarctica.

3:30 p.m. Holden J. F. * Kashyap S. Stewart L. C. Algar C. K. Sklute E. C. Dyar M. D.
[Reactive Transport Modeling and Detection of Thermophiles in the Subseafloor](#) [#3396]
We (reactive transport) model the impact of thermophilic methanogens in the seafloor, and examine growth/mineral products of hyperthermophilic iron reducers.

3:45 p.m. CONFERENCE ADJOURNS