

Thursday, April 27, 2017

NEW TECHNOLOGIES AND TECHNIQUES: OTHER TECHNOLOGIES AND TECHNIQUES:
APPLICATION OF SINGLE-CELL, NANOPORE, AND OTHER TINY TECHNOLOGIES

4:15 p.m. Mesa Room

Chairs: Marina Walther-Antonio
Christopher Carr

- 4:15 p.m. Liu Y. * Jeraldo P. McDonough S. Wadsworth J. Jen J. Schulze-Makuch D. de Vera J.-P. Cockell C. Walther-Antonio M.
[*Detection, Manipulation, Isolation and Amplification of Single Microbial Cells in Optofluidic Platform for Whole Genome Sequencing of Very Low Biomass Samples*](#) [#3067]
Optofluidic platform used to obtain single cells exposed to space/simulated Mars conditions on ISS and ground to identify their genomic variation.
- 4:30 p.m. Burton A. S. * Castro-Wallace S. L. Chiu C. Y. John K. K. Stahl S. E. Rubins K. H. Dworkin J. P. Lupisella M. L. Smith D. J. Mason C. E.
[*Validation of Nanopore Sequencing Aboard the International Space Station and Potential Applications for Astrobiology*](#) [#3532]
We report on tests of the MinION nanopore DNA sequencer on the International Space Station, future plans, and astrobiology potential of nanopore sequencing.
- 4:45 p.m. Bywaters K. B. * Schmidt H. Vercoutere W. Deamer D. Hawkins A. R. Quinn R. C. Burton A. S. McKay C. P.
[*Development of Solid-State Nanopore Technology for Life Detection*](#) [#3437]
Solid-state nanopore technology has the potential to be a robust platform capable of recognizing biomarkers (charged linear polymers) in the search for life.
- 5:00 p.m. Bai A. * Zaikova E. Tighe S. W. Goerlitz D. S. Johnson S. S.
[*Nanopore Sequencing in the Antarctic Dry Valleys*](#) [#3590]
Using single-molecule nanopore DNA sequencing to interrogate the metagenomics of ancient microbial communities in the Dry Valleys, Antarctica.
- 5:15 p.m. Goordial J. M. * Altshuler I. Hindson K. Ronan R. Raymond-Bouchard I. Whyte LG.
[*In Situ Life and Nucleic Acid Biomarker Detection Using the MICRO Life Detection Platform on Mars Analogue Polygonal Permafrost Terrain in the Canadian High Arctic*](#) [#3622]
In situ life and nucleic acid biomarker detection on Mars analogue polygonal permafrost terrain in the Canadian high Arctic.
- 5:30 p.m. Bedrossian M. * Rider S. Nadeau J. L. Lindensmith C. A.
[*A Holographic Microscope for Motility and Taxis Detection*](#) [#3219]
We show a digital holographic microscope with sample chambers permitting studies of microbial taxis to nutrients, light, electric, and magnetic fields, and more.