

The Atacama Desert: A Crossroads between Astrobiology and Cancer Research

International Speakers



John D. Coates-University of California, Berkeley.

John D. Coates is a Professor of Microbiology at University of California, Berkeley. He obtained an Honors B.Sc. in Biotechnology in 1986 from Dublin City University, Ireland and his Ph.D. in Microbiology in 1991 from University College Galway, Ireland. His major area of interest is geomicrobiology applied to environmental problems. Specific interests include diverse forms of anaerobic microbial metabolism such as microbial perchlorate reduction, microbial iron oxidation and reduction, and microbial humic substances redox cycles. He has won several awards for research and mentorship including the 1998 Oak Ridge Ralph E. Powe Young Faculty Enhancement Award, the 2001 DOD SERDP Program Project of the Year award, and the 2002 Southern Illinois University College of Science Researcher of the Year Award.



Paul Davies-Arizona State University.

Paul Davies is Director of BEYOND Center, Director of the Center for the Convergence of Physical Science and Cancer Biology, co-Director of Cosmology initiative and Regents' Professor at ASU. Paul Davies is a theoretical physicist, cosmologist, astrobiologist and best-selling author. His research ranges from the origin of the universe to the origin of life, and includes the properties of black holes, the nature of time and quantum field theory. He is the recipient of numerous awards, including the 1995 Templeton Prize, the 2002 Michael Faraday Prize from the Royal Society and the 2011 Robinson prize in Cosmology.



Pauline Davies-Arizona State University.

Pauline Davies is a radio science journalist with an extensive international career in broadcasting and documentary creation or production. She spent 12 years with the British Broadcasting Corporation (BBC), including seven with the World Service in London, where her programs reached audiences of tens of millions worldwide. Among her highly acclaimed special features were a twelve-part series on human origins, "The Million Year March of Humanity", and the award-winning ten-part series, "Who'd Have Thought It?" about serendipitous discoveries. As professor of practice, Pauline is continuing to make news and documentary items from across the sciences for public broadcasters worldwide. Pauline directs the Outreach and Education and Training components of a major physics and cancer initiative sponsored by the National Cancer Foundation.



Christopher P. McKay-NASA Ames Research Center.

Chris McKay is a planetary scientist at NASA Ames Research Center, studying planetary atmospheres, astrobiology, and terraforming. McKay received his PhD in astrogeophysics from the University of Colorado in 1982 and his bachelor's degree from Florida Atlantic University. McKay has done extensive research on planetary atmospheres, particularly the atmospheres of Titan and Mars, and on the origin and evolution of life. He is a co-investigator on the Huygens probe, the Mars Phoenix lander, and the Mars Science Laboratory. He has also performed field research on extremophiles, in such locations as Death Valley, the Atacama Desert, Axel Heiberg Island, and ice-covered lakes in Antarctica.



Dirk Schulze-Makuch-Washington State University.

Dirk Schulze-Makuch's research interests focus on the interaction of microbes with their natural geological environment in an aqueous medium. In particular, he is interested in the presence of liquid-rich environments on other planets and moons inside and outside of our Solar System and how these environments can serve as a potential habitat for microbial life. Examples include investigations of the habitability of the near-surface environment of Mars, the Martian subsurface, the Gliese 581 system, water-rich clouds on Venus, and ammonia-water puddles and hydrocarbon lakes on the surface of Saturn's moon Titan. He is also interested in the origin of cancer, which may be linked to bacterial behavior and quorum sensing of microbes within biofilms, which – under stress conditions – decouple from the collective.



Jacek Wierzchos-Spanish National Research Council.

Jacek Wierzchos is a Senior Scientist at the Institute of Natural Resources of the Spanish Research Council. He obtained a B.Sc. in Chemistry and his Ph.D. in Chemical Sciences at the Polish Academy of Sciences. Jacek has worked at the Institute of Agrophysics of the Polish Academy of Sciences, and was technical director of the Electron Microscopy Service at the University of Lleida, Spain. Jacek is expert on Electron Microscopy and co-author of a pioneer method to study extant or extinct microorganisms inside rocks. In 1996 he was invited by NASA to study possible traces of life in the Martian meteorite ALH84001. Currently his major area of interest is the study of life and biomarkers in lithic substrates of extremely dry environments, as analogues to possible life on Mars. Jacek recently discovered a novel photosynthetic niche in the dry core of the Atacama Desert, and has published over 100 scientific papers in international journals.