Molecular Frontiers Symposium and Youth Forum

Exploring the boundaries: the science of the extremes

Date: May 28–29, 2013
Venue: The Beijer Hall, The Royal Swedish Academy of Sciences
Lilla Frescativägen 4A, Stockholm, Sweden

Chairs: Professor Bengt Nordén
Lorie Karnath MBA, Ph.D. (hon)

Organization: Associate Professor Dina Petranovic, CEO Global Molecular Frontiers Foundation

Tuesday May 28 2013

09:00 Opening address
Prof. Barbara Cannon
President of the Royal Swedish Academy of Sciences

Welcome note
Prof. Bengt Nordén
Chairman of the Molecular Frontiers Foundation

09:15 Explorations of space and planets
Dr. Laurie Leshin:
Dean of Science; Professor of Earth and Environmental Sciences, Rensselaer Polytechnic Institute, USA

10:00 Operational perspective of space biomedical effects
Dr. Leroy Chiao
Former NASA Astronaut and International Space Station Commander, USA

10:45 Break (fika)

11:00 Explorations of extreme ocean environments of planet earth
Prof. Alfred Scott McLaren
Captain U.S. Navy (Ret.), President of the American Polar Society; President Emeritus of the Explorers Club, Director and Senior Pilot, Sub Aviator Systems LLC, USA

11:45 Lunch break (Lunch on your own)

13:30 The Universe
Nobel Laureate Prof. Gerard ’t Hooft
Professor at Utrecht University, the Netherlands

14:15 Study of other planets and their environments
Dr. Russell Hemley
Director, Geophysical Laboratory, Carnegie Institution of Washington, USA
15:00  Break (Fika)
15:15  Prebiotic molecules in young solar systems
Dr. Jes Jørgensen
Associate Professor Niels Bohr Institute and Centre for Star and Planet Formation, University of Copenhagen, Denmark
16:00  General discussion
Moderator Prof. Magdalena Eriksson
Youth Forum and announcement of the Molecular Frontiers Inquiry Prizes (MFIP)
Dr. Andreas Mershin
18:00  End of day

Wednesday May 29 2013

09:00  Extremophiles and the search for life in the universe
Prof. Dr. Lynn Rothschild
Chief Scientist, Synthetic Biology, NASA Ames Research Center, Adjunct Professor at Brown University, consulting Professor at Stanford University, USA
09:45  Unanswered questions in deep carbon research
Prof. Dr. Robert Hazen
Carbon at Extremes; Senior Staff Scientist, Carnegie Institution, Geophysical Laboratory; Robinson Professor of Earth Sciences, George Mason University; and Executive Director, Deep Carbon Observatory, USA
10:30  Break (fika)
11:00  Hyperthermophiles in the History of Life
Prof. Dr. Karl Stetter
Professor Emeritus, University of Regensburg, Germany
11:45  Surviving sustainably on planet earth
Prof. Dr. Nina Fedoroff
Distinguished Professor at King Abdullah University of Science and Technology (KAUST), Saudi Arabia, Evan Pugh Professor of Pennsylvania State University, USA
12:30  Lunch (Lunch on your own)
13:45  Panel discussion
The mysteries of extreme environments of Earth and beyond. Open questions: what should we explore (where, why and how) and what do we expect to find? And if we find something or someone, what then?
Moderator: Lorie Karnath MBA, Ph.D (hon)
Discussion panel
All speakers
15:45  Conclusions and closure (Prof. Bengt Nordén)