1ST STATUS SYMPOSIUM

LIFE? – A FRESH SCIENTIFIC APPROACH TO THE BASIC PRINCIPLES OF LIFE

Xplanatorium
HERRENHAUSEN

DECEMBER 10-11, 2019

PROGRAM
TUESDAY, DEC 10

8:30 A.M. REGISTRATION & COFFEE

9:30 A.M. WELCOME & INTRODUCTION

PAVEL DUTOW
Volkswagen Foundation, Hannover, Germany

9:45 A.M. KEYNOTE 1

Replication and Evolution in the RNA World

PAUL G. HIGGS
McMaster University, Hamilton, Canada

10:45 A.M. SESSION 1
PREBIOTIC CHEMISTRY & ORIGINS OF LIFE I

Molecular Life

CLEMENS RICHERT
University of Stuttgart, Germany

Sweet Life: Carbohydrate Formation in the Absence of Biosynthesis

PETER RICHARD SCHREINER
University of Gießen, Germany

11:25 A.M. COFFEE BREAK

12:00 P.M. SESSION 2
PREBIOTIC CHEMISTRY & ORIGINS OF LIFE II

The Prebiotic Origin of RNA Building Blocks on Early Earth

THOMAS CARELL
University of Munich, Germany

Towards De-novo Evolution of Protocells with Functional Genomes

Moritz Kreysing
Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

Prebiotic Synthesis on the Rocks

Dieter Braun
University of Munich, Germany

1:00 p.m. LUNCH BREAK

2:20 p.m. SESSION 3
BIOLOGY I

To the Edge of Life, and Back Again: Unlocking the Secrets of Dormancy to Preserve Human Life

Simon Alberti
Technical University Dresden, Germany

We are Many – In Search of Principles that Enable Multicellular Life

Jochen Rink
Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

The Fourth Dimension: Integration of Time to Shape Cooperativity and Survival in the Biosphere

Martha Merrow
University of Munich, Germany

Strategies for Life. How Spontaneous Behavior Emerges from Brain-Wide Neural Network Dynamics

Ruben Portugues
Max Planck Institute of Neurobiology, Martinsried, Germany

3:40 P.M. COFFEE BREAK

4:10 P.M. SESSION 4
BIOLOGY II

Probing the Prokaryote to Eukaryote Transition through Synthetic Evolution

Sven Gould
University of Düsseldorf, Germany

The E. coli Clade Needed Only a Single Horizontal DNA Transfer for each Detectable Metabolic Innovation, while Simpler Metabolic Systems Would Require Dozens of Transfers

Martin Lercher
University of Düsseldorf, Germany

Genome SCRaMbLEing: An Experimental Approach to Understand Life's Organization at a Molecular Level

Lars Steinmetz
EMBL European Molecular Biology Laboratory,
Heidelberg, Germany

The Spark of Life: Initiation of Transcription in Embryos and Recapitulating such in Synthetic Nuclei

Nadine Vastenhouw
Max Planck Institute of Molecular Cell Biology and Genetics,
Dresden, Germany

5:30 P.M. POSTER SESSION

7:00 P.M. CONFERENCE DINNER

WEDNESDAY, DEC 11

9:30 A.M. SESSION 5
BIOCHEMISTRY & BIOPHYSICS

How did Proteins Emerge and Continue to Evolve?

Birte Höcker
University of Bayreuth, Germany

Self-Organization of Cell Shape – An Essential Prerequisite for Complex Cellular Life

Lars Renner
Leibniz Institute of Polymer Research Dresden, Germany

A Scientific Approach Towards Understanding the Formation of Robust Turing Patterns in Developmental Biology

Mark Isalan
University of Melbourne, Australia

Life – The Art of Noise?

Matthias Weiss
University of Bayreuth, Germany

10:50 A.M. COFFEE BREAK

11:20 A.M. KEYNOTE 2

The Excitement of Discovery: From Protein Complex Structures to Synthetic Viral Nanosystems to Minimal Biology.

Imre Berger
Max Planck Bristol Centre for Minimal Biology,
University of Bristol, UK

12:20 P.M. LUNCH BREAK

1:30 P.M. SESSION 6
SYNTHETIC BIOLOGY

Forming Living Shells by Active Matter – Towards Contractile Minimal Cell Compartments

ANDREAS JANSHOFF
University of Göttingen, Germany

"Eternal Cell" – Life? Without Replication

JOHANNES KABISCH
Technical University Darmstadt, Germany

BRILIANCE – Bringing Inorganic Carbon to Life with Artificial CO_2-Fixation in a Minimal Cell

KAREN CHAN
Max Planck Institute for Terrestrial Microbiology, Marburg, Germany

Design Principles of Living Membranes

ROBERT ERNST
Saarland University Medical Center, Homburg, Germany

2:50 P.M. CLOSING REMARKS

3:00 P.M. END OF CONFERENCE