Molecular Origins of Life

11 and 12 October 2018
International Conference organized by Prof. Dr. Dieter Braun

Thursday, 11 October 2018

Session A

08:30 - 8:55  Job Boekhoven (TU Munich)
Self-selection of dissipative assemblies from primitive chemical reaction networks

8:55 - 9:20  Irene Chen (UC Santa Barbara)
Fitness landscapes of RNA

9:20 - 9:45  Dora Tang (MPI for Cellular Molecular Biology and Genetics)
Synthetic cellular models for probing the origin of life

9:45 - 10:05  Discussion

10:05 - 10:35  Coffee break

Session B

10:35 - 11:00  Clemens Richert (University of Stuttgart)
Enzyme-free replication of genetic sequences

11:00 - 11:25  Phil Holliger (MRC Laboratory of Molecular Biology)
Replicating RNA with RNA

11:25 - 11:50  Niles Lehman (Portland State University)
Scrambling to build the RNA world

11:50 - 12:10  Discussion

12:10 - 13:30  Lunch break

Session C

Emergence of organized geochemical systems in the early earth
13:55 - 14:20 Christof Mast (LMU Munich)
Physical non-equilibria as driving force and habitat for the origin of life

14:20 - 14:45 André Estevez-Torres (ESPCI Paris & Sorbonne Université)
Synthesis of spatio-temporal structures with DNA molecular programs

14:45 - 15:05 Discussion

15:05 - 15:35 Coffee break with poster session

15:35 - 16:35 Poster session

**Session D**

16:35 - 17:00 Andrei Lupas (MPI for Developmental Biology)
Ribosomal proteins as documents of the transition from unstructured polypeptides to folded proteins

17:00 - 17:25 Sijbren Otto (University of Groningen)
Can we synthesize life in the lab? How chemistry may become biology

17:25 - 17:50 Laurie Barge (California Institute of Technology)
Simulating prebiotic chemistry in hydrothermal systems on early earth and ocean worlds

17:50 - 18:10 Discussion

18:10 End

Friday, 12 October 2018

**Session E**

08:30 - 8:55 Dimitar Sasselov (Harvard University)
Stellar uv light and the origins of life

8:55 - 9:20 Cornelia Meinert (Université Nice Sophia Antipolis)
The asymmetry of life

9:20 - 9:45 Stephen Mojzsis (University of Colorado)
Onset of late accretion to the inner solar system – consequences for the first habitats

9:45 - 10:05 Discussion

10:05 - 10:35 Coffee break

**Session F**

10:35 - 11:00 Matt Powner (University College London)
On the divergent synthesis of purine and pyrimidine nucleosides
11:00 - 11:25  **Saidul Islam** (University College London)
Prebiotic selection and assembly of proteinogenic peptides and ribonucleotides

11:25 - 11:50  **Thomas Carell** (LMU Munich)
The prebiotic origin of RNA building blocks on early earth

11:50 - 12:10  Discussion

12:10 - 13:40  Lunch break

**Session G**

13:40 - 14:05  **Matthew Pasek** (University of South Florida)
Disequilibrium polyphosphate formation from phosphorus redox

14:05 - 14:30  **Sheref Mansy** (University of Trento)
The emergence of iron-sulfur catalysts

14:30 - 14:55  **Shawn McGlynn** (ELSI of Tokyo Institute of Technology)
How much can we learn about ancient cells from sequence analysis?

14:55 - 15:15  Discussion

15:15 - 15:45  coffee break

**Session H**

15:45 - 16:10  **Robert Pascal** (Princeton University)
How chemical kinetics can become a driving force for life self-organization

16:10 - 16:35  **Moritz Kreysing** (MPI of Molecular Cell Biology and Genetics)
Ribozyme reactions in the presence of uncharged and charged co-polymers

16:35 - 17:00  **Frank Postberg** (University of Heidelberg)
The subsurface ocean of Enceladus: a habitable place in our solar system

17:00 - 17:20  Discussion

17:20  **Closing of the Conference**

**Venue:**
Literaturhaus München
Salvatorplatz 1
80333 München