

Origins of Life Chemistry Workshop

Earth-Life Science Institute, Tokyo Institute of Technology



Thursday 20 March 2014

Session 1: 9–12 AM

- 9:00–9:25 Aaron Englehart *Harvard University*
"Nucleic Acids with Mixed Backbones: Fatal or Beneficial for an RNA World?"
- 9:25–9:50 Yutetsu Kuruma *ELSI*
"Creation a Possible Living Organism that Might Exist in Early Earth Condition"
- 9:50–10:15 Christian Hentrich *Harvard University*
"Dynamic Behavior of Model Protocells Studied by Optofluidics"
- 10:15–10:40 Daishi Fujita *University of Tokyo*
"Arrayed Lipid Bilayer Chambers Allow Single Molecule Analysis of Membrane Transporter Activity"
- 10:40–11:05 Tony Jia *Harvard University*
"Cationic Peptides Decrease Reannealing Rates of Separated RNA Strands"
- 11:05–11:30 Jim Cleaves *ELSI*
"Comparison of Amino Acids Derived from Titan Tholins, Electric Discharge Reactions and Carbonaceous Chondrites"?
- 11:30–11:55 Noam Prywes *Harvard University*
"Mechanistic studies of Nonenzymatic Template-Directed RNA Polymerization"

Lunch 12–2 PM

Session 2: 2–5 PM

- 2:00–2:25 Brian Cafferty *Georgia Tech*
"Efficient Monomer Assembly and the Origin of RNA"
- 2:25–2:50 Norio Kitadai *ELSI*
"Thermodynamics of Amino Acid Synthesis and Polymerization"
- 2:50–3:15 Aaron Larsen *Harvard University*
"For Biopolymers: The Spooky Thermodynamic Effects of Nucleobase Modifications"
- 3:15–3:40 Alexis Gilbert *ELSI*
"Molecular fossils of early life on Earth"
- 3:40–4:05 Neha Kamat *Harvard University*
"Inducing RNA Localization to Protocell Membranes with Lipophilically-Modified Nucleotides"
- 4:05–4:30 Nobuto Takeuchi *University of Tokyo*
"On the Roles of Parasites in an RNA World: Evolution of Complexity in Model Replicator Systems"
- 4:30–4:55 Enver Izgu *Harvard University*
"Exploring the Dynamics of Non-Covalent Nucleotide Binding to SS-Nucleic Acid Templates Using NMR Spectroscopy"

Reception 5–6 PM