

Organizer: Laura Barge & Bethany Theiling

Tuesday November 8

7:00pm – 10:00pm: Informal social gathering (Oimachi area)

Wednesday November 9

9:00 - 9:30 am: Coffee and Cookies

9:30 - 10:00am: Welcome and introduction (Laurie Barge and Bethany Theiling)

10:00 - 11:45am: Planetary Perspectives

10:00 - 10:30am: De-coupled electron and heat transfer at deep-sea hydrothermal vents (Ryuhei Nakamura)

10:30 - 11:00am: Stable Isotope Investigations of Hydrothermal Vents and Implications for Life's Origin (Bethany Theiling)

11:00 - 11:15am Break

11:15 - 11:45am: Reducing Power on Hydrothermal Vent Minerals as a Driving Force for Early Anabolic Pathways (Masahiro Yamamoto)

11:45 - 1:45pm : Lunch

1:45 - 4:15pm: Early Membranes and Electron Flow

1:45 - 2:15pm: Considering the Movements of Electrons and Protons in Relationship to Energy Conservation at Life's Emergence (Shawn McGlynn)

2:15 - 2:45pm: Electrochemical Investigation of Membrane-Organic Interactions. An Origins Perspective (Terry Kee)

2:45 - 3:00pm: Break

3:00 - 3:30pm: Open Questions on Early Membranes, pH Gradients, and Carbon Fixation at Alkaline Vents (Victor Sojo)

3:30 - 4:00pm: Ancient Carbon Fixation Pathway: A Missing Link from Electrochemical Reactions to Extant Metabolism? (Masafumi Kameya)

4:00 - 5:30pm: Discussion / working groups

Thursday November 10 (ELSI-1102 ELSI Hall)

9:00 - 9:30 am: Coffee and cookies

9:30 - 10:30am: Keynote – Fuels and Oxidants at the Emergence of Life (Michael Russell)

10:30 - 12:15pm: Geological Membranes and Electrochemistry

10:30 - 11:00am: An Origin of Life Reactor to Simulate Alkaline Hydrothermal Vents (Barry Herschy)

11:00 -11:15am: Break

11:15 - 11:45am: Simulating Geochemical Gradients in Hydrothermal Systems: From Chemical Gardens to Electrochemistry (Laurie Barge)

11:45 – 12:15pm: Polymerization of Biomolecules Using Deep-Sea Water-Liquid CO₂ Reactor (Kosuke Fujishima)

12:15 - 2:00pm: Lunch

1:45 – 5:00: Experimental Approaches

1:45 - 2:15pm: Electrochemically Generated Rocks to Study the Electrochemistry at the Origin of Life (Gabriel LeBlanc)

2:15 - 2:45pm: Role of Surfaces in Origin of Life Investigations: Ambient, Liquid, and EC Microscopy (Erin Iski)

2:45 - 3:00pm: Break

3:00 - 3:30pm: Non-enzymatic, Geochemically-Plausible CO₂ Fixation is Possible
in the Geo-electrochemical Systems (Norio Kitadai)

3:30 - 5:30pm: Discussion / white paper breakout groups

6:00 - 8:00pm: Banquet

Friday November 11

9:00 - 9:30am: Coffee and cookies

9:30 - 11:30am: White paper presentations and concluding remarks

11:30 - 12:50pm : Lunch

12:50pm: Gather for JAMSTEC tour

1:00pm: Depart for JAMSTEC tour by chartered bus

2:30 - 4:00pm (or till 4:30pm): JAMSTEC tour

4:30pm: Return to Shinagawa via public transportation