

Thirty Years of Complex Thinking:

A Celebration of Stuart Kauffman's Contributions to the Field of Complex Systems

The Santa Fe Institute

| | Wednesday August 21, 2019 | | Thursday, August 22, 2019 | |
|--------------|---|--|--|--|
| | Catch bus to SFI (Front Entrance) | Day 1 | Catch bus to SFI (Front Entrance)2 | Day 2 |
| 7:45am | Catch bus to SFI (Front Entrance) | Day 1 | Catch bus to SFI (Front Entrance)2 | Day 2 |
| 8:00-8:30 | <i>Continental Breakfast</i> | | <i>Continental Breakfast</i> | |
| 8:30-8:45 | Leon Glass & David Krakauer | Introduction | Keynote Economics: Brian Arthur (8:30 - 9:15) | Combinatorial Evolution |
| 8:45-9:30 | Origins of Life: Keynote Roberto Serra | Modelling Protocells | Tim Kohler (9:15 - 9:30) | Tangled Banks: Population, Technology, and Inequality in the Quaternary |
| 9:30-9:45 | Wim Hordijk | A History of Autocatalytic Sets | Roger Koppl | The Role of Human Intelligence in Human Progress |
| 9:45-10:00 | Joana Xavier | Autocatalytic networks in ancient bacterial and archaeal metabolism | Teppo Felin | Mind-Stuff and the Economy |
| 10:00-10:15 | Gonen Ashkenasy | Emergence of Function in Primitive Replication Networks Out of Equilibrium | Naresh Singh | Economics for the SDGs: The Role of Kauffman's Economic Webs |
| 10:15-10:30 | David Deamer | A Recipe for Life's Beginning: Self-assembly, cycles, and kinetic traps | The Adjacent Possible 2: Lee Smolin | Precedence in an Approach to Quantum Foundations |
| 10:30-11:00 | <i>Break</i> | | <i>Break</i> | |
| 11:00-11:15 | Doron Lancet | Origin of Life in Lipid Networks: Standing on the shoulders of a giant | Walter Fontana | The Adjacent Possible |
| 11:15-11:30 | Gábor Vattay | The Clock of Chemical Evolution | Caryn Devins Strickland | Stare Decisis and Novelty |
| 11:30-11:45 | Addy Pross | The Origin of Life: How or Why? | Colin Hill | What is Life? |
| 11:45-12:00 | The Adjacent Possible 1: Steven Strogatz | Mathematizing the Adjacent Possible | Richard Melmon | Entrepreneurship: Probing the Ecosphere's Adjacent Possible |
| 12:00-1:00 | <i>Lunch</i> | | <i>Lunch</i> | |
| 1:00- 1:15 | Vittorio Loreto | The Experience of the New for Humans and Machines | Keynote: Practical Complexity Lee Hood (1:00-1:45) | Big Data, Wellness & Disease |
| 1:15-2:00 | Genetic Regulatory Nets Keynote: Sui Huang | From Waddington Landscapes to Kauffman Nets to Single-Cell FNA-Seq: 50 Years of the Cell Attractor | Barry Selick (1:45-2:00) | Overcoming the Valley of Death in Biomedical Research |
| 2:00-2:15 | Sara Walker | Criticality, Information and Life | Bennett Levitan | Would you take a drug that could kill you? |
| 2:15-2:30 | Joshua Socolar | Boolean Network Modeling of Genetic Regulatory Networks | Stephen Guerin | Capturing Realtime Earth: Crowd-sourced imagery & shared agent-based models |
| 2:30-2:45 | Stefan Bornholdt | Ensembles of Boolean Networks & the Evolution of Gene Regulation | Sasha Outkin | Nasdaq Market Modeling & Complex Systems Prediction |
| 2:45-3:00 | Leon Glass | Evolution and Robustness in Gene Networks | Michael W. Brown | A Tale of Phase Transition in Random Graphs & Wall Street Warbling |
| 3:00-3:30 | <i>Break</i> | | <i>Break</i> | |
| 3:30-3:45 | Co-evolution & Landscapes: Stefan Thurner | A Combinatorial-Co-evolutionary-Critical view on Evolution | Biological & Social Evolution: Geoffrey West | Towards a Quantitative Theory of Growth, Aging and Death; Simplicity & Unity in the Complexity of Life |
| 3:45-4:00 | Brian Beckage | Modeling the Development and Collapse of Complex Societies | Olli Yli-Harja | Systems Biology W/Stu & Private Thoughts on Occam's Razor |
| 4:00 - 4:15 | Michael Epperson | Dipolar Duality: Actuality & Potentiality in Quantum Mechanics | Maximino Aldana | Modeling the Role of the Microbiome in Evolution |
| 4:15 - 4:30 | Mael Montevil (w/Giuseppe Longo) | No Entailing Laws but Enablement in the Evolution of the Biosphere | Kepa Ruiz Mirazo | Working at the Edge of Science and Philosophy: Better ways to Advance the Frontiers of Knowledge? |
| 4:30 -4:45 | George Johnson | Writing a Book with Stu | Lee Cronin | Spontaneous Abiogenic Networks of self-replicating inorganic salts driven by Molecular Information |
| 5:15pm | Catch bus back to HSF | | Catch bus back to HSF | |
| 6:30 -8:30 | <i>Dinner (Hotel Santa Fe), Amaya Dining Rm</i> | | <i>6:30 Party (Dinner w/spouses, Jazz, Razz & Dancing) - 11:00</i> | |
| 8:30 - 11:00 | <i>Self-Organizing Discussions (as desired) Amaya Dining Rm (til 10:00)</i> | | <i>Hotel Santa Fe, Kiva A/B/C</i> | <i>Rich; Linda; Leon; Colin; Stu</i> |