

Program

Oct.16 (Fri.) 9:00~12:00

Chair: Jevin West (Department of Biology, University of Washington)

9:00~9:05 Opening Address

Kazuo Nishimura (Institute of Economic Research, Kyoto University)

9:05~9:15 Introductory Remarks

Masatoshi Murase (Yukawa Institute for Theoretical Physics, Kyoto University)

Evolution as a double-edged sword

9:15~12:00 “Neural & Modeling Session”

9:15~9:30

Ichiro Tsuda (Hokkaido University & International Institute for Advanced Studies)

Evolution Through Maps

9:30~10:20

Dirk De Ridder (University Hospital Antwerp, Belgium)

A Darwinian Approach to Phantom Perceptions

10:20~10:40 Break

Chair: Kuniyoshi Ebina (Kobe University)

10:40~11:00

Kazuo Nishimura & Yoshikazu Tobinaga*

(Institute of Economic Research, Kyoto University, *Elegaphy)

Measurement of Individuality in the Thinking Patterns

11:00~11:20

Myoung Won Cho (Korea Institute for Advanced Study)

Theoretical approach to neural phenomena by using symmetry properties

11:20~12:00

Hideyuki Nakashima (Future University Hakodate)

Evolution-theoretic Approach to Synthetic Study of Intelligence

12:00~13:30 Lunch

Oct.16 (Fri.) 13:30~18:30

Chair: Nara Shigetoshi (Okayama University)

13:30~16:40 “Cellular & Theoretical Session I”

13:30~14:10

Kunihiko Kaneko (University of Tokyo Biology)

Macroscopic relationship among robustness, evolvability, and phenotypic fluctuations

14:10~14:50

Ka Yee Lee (The University of Chicago)

How Microbes Evolve to Dodge the Membrane Disruptive Actions of Antimicrobial Peptides

14:50~15:10 Break

Chair: Ichiro Tsuda (Hokkaido University & International Institute for Advanced Studies)

15:10~15:40

Yoshiomi Takagi

On the Origin of Sexual Reproduction — In Relation to Lifespan —

15:40~16:20

Yoh Iwasa (Department of Biology, Kyushu University)

Cancer as a mini-evolutionary process

16:20~16:40 Break

Chair: Ka Yee C. Lee (The University of Chicago)

16:40~18:30 “Cellular & Theoretical Session II”

16:40~17:20

Takashi Ikegami (The Graduate School of Arts and Sciences, University of Tokyo)

Homeodynamics, Shape and Motion dynamics in Self-Moving Oil Droplets

17:20~17:50

Hiroshi Kokubu (Department of Mathematics, Kyoto University)

A method for constructing databases of global dynamics of multi-parameter systems

17:50~18:30

Carl Bergstrom (Department of Biology, University of Washington)

The concept of information in evolutionary biology

18:30~21:00 Banquet (Hotel Restaurant at the 1-st Floor)

Greeting Address: Hyungtae Kook (Kyungwon University & APCTP)

Program

Oct.17 (Sat.) 9:00~12:00

Chair: Yoshiomi Takagi

9:00~12:00 “Molecular & Dynamical Session”

9:00~9:40

Massimo Di Giulio (Laboratory for Molecular Evolution, Institute of Genetics and Biophysics)

The origin of the tRNA molecule

9:40~10:20

Akio Kanai (Institute for Advanced Biosciences, Keio University)

System Biology of Archaeal RNAs and RNA-Binding Proteins

Junichi Sugahara (Institute for Advanced Biosciences, Keio University)

Disrupted tRNA gene diversity and possible evolutionary scenarios

10:20~10:40 Break

Chair Kunihiro Kaneko (University of Tokyo and ERATO Complex Systems Biology)

10:40~11:20

Katsumi Imada (Graduate School of Frontier Biosciences, Osaka University)

Structure of the bacterial flagellum and its evolutionary relation to other biological molecular machines

11:20~12:00

Mikhail A. Fedonkin (Institute of Geochemistry and Analytical Chemistry, Russian Academy of Sciences)

Physical aspects of early life evolution

12:00~12:20

Jevin West (Department of Biology, University of Washington)

Traversing Fitness Landscapes by Changing Environments

12:20~14:00 Lunch

Oct.17 (Sat.) 13:30~17:35

Chair: Carl Bergstrom (Department of Biology, University of Washington)

14:00~15:30 “Human & Cultural Session I”

14:00~14:30

Marta Ortega-Llebaria, Barbara Davis and Jie Yang

(University of Texas at Austin)

Emergent Complexity in Speech Acquisition:

Applications to Evolution of the Speech Capacity

14:30~15:00

Seung Kee Han (Department of Physics, Chungbuk National University)

Dynamic Evolution of the Human Knowledge System in a Textbook

15:00~15:30

Cynthia Trevisan (The California Maritime Academy, California State University)

The Descent of Science: How Quantum Mechanics is Shedding

Light on the Interaction of Light and Matter

15:30~15:50 Break

Chair: Hideyuki Nakashima (Future University Hakodate)

15:50~18:15 “Human & Cultural Session II”

15:50~16:20

Peter Davis (Telecognix Corporation)

Modeling Communicating Systems: Hybrid Man-machine Systems and their Evolution

16:20~16:50

Yukio-Pegio Gunji (Faculty of Science, Kobe University)

Life with indefinite boundary between micro- and macro-perspectives

16:50~17:30

Ryohei Nakatsu (Interactive & Digital Media Institute, National University of Singapore)

Communication and Its Future

17:30~18:10

Matthias Rauterberg (Technical University)

From genes to memes: Culture as an evolutionary arena.

18:10~18:15 Closing Address

Masatoshi Murase (Yukawa Institute for Theoretical Physics, Kyoto University)