

58th Biomechanical Systems Symposium
January 19, 2026 @ LHall, The University of Osaka

15:10 Opening by Prof. Shinji Deguchi

Part 1 (15:15-16:35)

Chair: Takumi Saito

15:15-15:55 (40) **Dr. Kenji Nishizawa** 西澤 賢治 (Assistant Prof. @ Tohoku University)
“Mechanistic Insights into the Differences between Living and Non-living Systems, from Intracellular Dynamics to Tissue Mechanics”

15:55-16:35 (40) **Dr. Koichiro Maki** 牧 功一郎 (Associate Prof. @ Kyoto University)
“Mechanical Investigation on Chromatin Dynamics under High Pressure”

Part 2 (16:45 - 17:45)

Chair: Daiki Matsunaga

16:45-16:57 (12) **Dr. Daiki Matsunaga** 松永 大樹 (University of Osaka)
“Active Transport of Liposomes Driven by Encapsulated Microorganisms”

16:57-17:09 (12) **Dr. Takumi Saito** 斎藤 匠 (University of Osaka)
“Coiled-coil Intramolecular Sensors OPEN up Mechanisms of Mechanotransduction”

17:09-17:21 (12) **Dr. Cristina Bertocchi** (University of Osaka & Pontifical Catholic University of Chile)
“Decoding Molecular Mechanotransduction of Cell Adhesion Mechanries”

17:21-17:33 (12) **Dr. Ryoko Otomo** 大友 涼子 (Kansai Univ.)
“Fabrication of Microfluidic Device for Particle Separation using Deterministic Lateral Displacement Method: Experimental Observations of Particles Behavior through Triangular Pillars”

17:33-17:45 (12) **Dr. Sho Yokoyama** 横山 祥 (Osaka Institute of Technology)
“Engineering a 3D Skeletal Muscle Platform to Recapitulate Mechanical Stress and Microgravity”

Part 3 (17:55 - 18:50), 5 min x 7 speakers from University of Osaka

Chair: Cristina Bertocchi

- **Dr. Ellen Alves** (Wada Lab)
“Performance Assessment of Compressed Sensing Techniques in Phase Contrast MRI”
- **Yuika Ueda** 上田 唯花 (Deguchi Lab)
“Revealing Cellular Functional Fluctuations via Nonequilibrium Physics”
- **Zachary Nicolella**, Nozomi M. Watanabe, Yukihiro Okamoto, Hiroshi Umakoshi
“Resolving the Connection between Viscosity and Hydration in the Lipid Membrane”

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via Time Resolved Laurdan Spectroscopy Laurdan"

10min Q&A for 3 speakers

- **Zhang Colin** (Sakai Lab)
"Disentangled Generative AI for Closed-Loop Optimization of 3D Bioprinting Deposition Morphology"
- **Rosario Ibáñez** (Deguchi Lab)
"Interplay Between Stretch and Cell Density in Epithelial Homeostasis"
- **Intan Chairun Nisa** (Deguchi Lab)
"Stress Fiber-Dependent Trafficking Controls Senescence-Associated Secretion"
- **Eiji Matsumoto 松元 瑛司** (Deguchi Lab)
"Chemomechanical Model for Regulation of Anchoring and Dynamic Adhesion Modes in Cell-Matrix Systems"

10min Q&A for 4 speakers (till 18:50)

18:50 **Closing by Prof. Shinji Deguchi**

18:55 **Reception @ Foyer, ΣHall**

20:00 **Closing**