

1 日目 (11 月 14 日 (火)) / Day 1 (Nov. 14 Tue.)

9:00~11:30

I 会場 (国際会議室 (3 号館 3F)) / Room I (International Conference Room (Bldg. 3, 3F))

1YI 日本生物物理学会若手奨励賞選考会

Early Research in Biophysics Award Candidate Presentations

オーガナイザー：男女共同参画・若手支援委員会

Organizer: Promotion of Gender Equality and Young Researchers Committee

Biophysical Society of Japan (BSJ) grants “Early Career Award in Biophysics” and “Early Career Presentation Award” to young BSJ members for their excellent presentations that show great potential to contribute to the progress of biophysics. In this 19th year, we received 41 highly qualified applications. After the first round of competitive screening based on submitted documents, the following ten applicants were selected as candidates for Early Career Award in Biophysics. In this symposium, each speaker will give a 10-minute presentation followed by a 3-minute discussion as the second round of screening. Up to five awardees of the Early Career Award in Biophysics will be selected. The best presenter will also be awarded IUPAB award from International Union of Pure and Applied Biophysics. The Early Career Presentation Award will be given to the rest of the excellent invited speakers. We welcome all the BSJ members to attend this symposium to foresee the future of biophysics in Japan through the speakers and their research.

09:00 Sakura Takada 1Pos182

1YI0900 動的な静止構造：人工細胞内に創られたチューリングパターン

Creation of Turing pattern in artificial cells by PAR system-like mutual inhibition network

○高田 咲良¹, 義永 那津人^{2,3}, 土居 信英¹, 藤原 慶¹ (¹慶應大・理工, ²東北大・AIMR, ³産総研・MathAM-OIL)

Sakura Takada¹, Natsuhiko Yoshinaga^{2,3}, Nobuhide Doi¹, Kei Fujiwara¹ (¹*Dept. Biosci. and Info., Keio Univ.*, ²*AIMR, Tohoku Univ.*, ³*MathAM-OIL, AIST*)

09:15 Hironori Takeda 1Pos030

1YI0915 ミトコンドリアにおけるタンパク質膜挿入の構造基盤

Structural basis of the protein membrane insertion by the mitochondrial protein assembly gate

○竹田 弘法 (神戸大・科学イノベ)

Hironori Takeda (*Grad. Sch. Sci. Tech. Inno., Kobe Univ.*)

09:30 Takashi Kanadome 3Pos247

1YI0930 クラスター型プロトカドヘリンの同種親和性相互作用を可視化する蛍光指示薬の開発

Development of fluorescent indicators for visualizing homophilic interaction of clustered protocadherin

○京 卓志^{1,2}, 星野 七海³, 永井 健治², 八木 健³, 松田 知己² (¹JST さきがけ, ²阪大・産研, ³阪大・院生命機能)

Takashi Kanadome^{1,2}, Nanami Hoshino³, Takeharu Nagai², Takeshi Yagi³, Tomoki Matsuda² (¹*PRESTO, JST*, ²*SANKEN, Osaka Univ.*, ³*FBS, Osaka Univ.*)

09:45 Benjamin Clifton 3Pos019

1YI0945 Ultrahigh-affinity transport proteins from ubiquitous marine bacteria: structure, function, and environmental significance

Benjamin Clifton¹, Uria Alcolombri², Colin Jackson³, Paola Laurino¹ (¹*Protein Eng. Evol. Unit, Okinawa Inst. Sci. Tech. (OIST)*, ²*Inst. Environ. Eng., ETH Zurich*, ³*Research School of Chem., Aust. Nat. Univ. (ANU)*)

- 10:00 Ryohei Kobayashi 3Pos093
 1Y11000 ミトコンドリア型 ATP 合成酵素の阻害因子 IF_1 が示す回転方向依存的な制御機構: 1 分子操作実験と分子動力学シミュレーション
 Direction-dependent regulation of IF_1 in the mitochondrial ATP synthase by single-molecule manipulation and molecular dynamics simulation
 ○小林 稜平, 岡崎 圭一 (分子研)
Ryohei Kobayashi, Kei-ichi Okazaki (*Inst. for Mol. Sci.*)
- 10:15 Shiori Iida 1Pos073
 1Y11015 クロマチンの高次構造はクロマチンの局所的な動きとクロマチンのかたさを制御する
 Higher order structure of chromatin regulates local chromatin motion and chromatin stiffness
 ○飯田 史織^{1,2}, 田中 真仁³, 田村 佐知子¹, 鐘巻 将人^{2,4}, 島本 勇太^{2,3}, 前島 一博^{1,2} (¹ 遺伝研・ゲノムダイナミクス, ² 総研大・遺伝学, ³ 遺伝研・物理細胞生物学, ⁴ 遺伝研・分子細胞工学)
Shiori Iida^{1,2}, Masahito Tanaka³, Sachiko Tamura¹, Masato Kanemaki^{2,4}, Yuta Shimamoto^{2,3}, Kazuhiro Maeshima^{1,2} (¹*Genome Dynamics Lab., Natl. Inst. of Genetics*, ²*Graduate Institute for Advanced Studies, SOKENDAI*, ³*Physics and Cell Biology Lab., Natl. Inst. of Genetics*, ⁴*Molecular Cell Engineering Lab., Natl. Inst. of Genetics*)
- 10:30 Minoru Kurisu 2Pos170
 1Y11030 自己生産する細胞のコンセプトを人工系で単純に再設計する: モデル実験系で繋ぐ物質と生命
 Reproduction of a synthetic minimal cell: An experimental approach connecting matter and cell
 ○栗栖 実¹, Walde Peter², 今井 正幸¹ (¹ 東北大・院理・物理, ²ETH・材料)
Minoru Kurisu¹, Peter Walde², Masayuki Imai¹ (¹*Dept. Phys., Grad. Sch. Sci., Tohoku Univ.*, ²*Dept. Materials, ETH Zürich*)
- 10:45 Shingo Fukuda 2Pos233
 1Y11045 超低侵襲高速原子間力顕微鏡の開発
 Ultra-low-invasive high-speed atomic force microscopy for visualization of fragile molecular complexes
 ○福田 真悟, 安藤 敏夫 (金沢大学 ナノ生命科学研究所)
Shingo Fukuda, Toshio Ando (*WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University*)
- 11:00 Satoshi Omura 3Pos018
 1Y11100 小型 AsCas12f 酵素のクライオ電子顕微鏡を用いた構造解析およびその改変
 An AsCas12f-based compact genome editing tool derived by deep mutational scanning and structural analysis
Satoshi Omura¹, Tomohiro Hino², Ryoya Nakagawa¹, Tomoki Togashi³, Tsukasa Ohmori³, Atsushi Hoshino², Osamu Nureki¹ (¹*Department of Biological Sciences, Graduate School of Science, The University of Tokyo.*, ²*Department of Cardiovascular Medicine, Graduate School of Medical Science, Kyoto Prefectural University of Medicine.*, ³*Department of Biochemistry, Jichi Medical University School of Medicine.*)
- 11:15 Ryo Mizuuchi 2Pos159
 1Y11115 原始的な RNA 集団の調査から見つかった自己複製する最小の RNA
 Minimal RNA self-reproduction discovered from a random pool of oligomers
 ○水内 良^{1,2}, 市橋 伯一^{3,4,5} (¹ 早稲田・理工, ²JST・創発, ³ 東大・総合文化, ⁴ 東大・先進科学, ⁵ 東大・普遍性)
Ryo Mizuuchi^{1,2}, Norikazu Ichihashi^{3,4,5} (¹*Fac. Sci. Eng., Waseda Univ.*, ²*JST, FOREST*, ³*Grad. Sch. Arts and Sci., Univ. Tokyo*, ⁴*Komaba Inst. Sci., Univ. Tokyo*, ⁵*UBI, Univ. Tokyo*)