## ポスター発表　Poster Presentations

1 日目（9 月 24 日（水））／Day 1（Sep. 24 Wed.）　13:00 ～ 15:00

### 01A. タンパク質：構造／01A. Protein: Structure

1Pos001 Mutation Effect of Terpene Cyclase CotB2 Revealed by Ambient Temperature Crystallography
**Atika Nur Rochmah**[1], Takaaki Fujiwara[1], Tomohiko Kuzuyama[2], Eriko Nango[1] ([1]*Grad. Sch. Sci., Univ Tohoku*, [2]*Grad. Sch. Agr. Life. Sci., Univ. Tokyo*)

1Pos002 クライオ電子顕微鏡を用いたヒトパネキシン 3 チャネルの脂質ナノディスク中での構造解析
Cryo-EM structure of human Pannexin-3 in lipid nanodiscs
**Shota Kawaguchi**[1], Shota Suzuki[2], Koki Nishikawa[3], Yoshinori Fujiyoshi[2], Atsunori Oshima[1,4] ([1]*Grad. Sch. PharmSci., Nagoya Univ.*, [2]*CeSPL, Inst. Integrated Research, Inst. Science Tokyo*, [3]*Tokyo Univ. Agri. and Tech.*, [4]*CeSPI, Nagoya Univ.*)

1Pos003 生細胞内での近接ラベリング法で検出された RAF 複合体の分子構成
Molecular composition of RAF kinase complexes in living cells revealed by proximity labeling
**Kenji Okamoto**, Yasushi Sako (*RIKEN PRI*)

1Pos004 Structural rearrangement of DNMT3B driven by histone modifications stimulates its DNA methylation activity
Cho Chao-Cheng[1], Chu Woei-Chyn[2], **Hanna S. Yuan**[1] ([1]*Academia Sinica*, [2]*National Yang Ming Chiao Tung University*)

1Pos005 Structural insight into the mechanism of amyloid fibril formation by hen egg-white lysozyme
**Haruka Kawabata**[1], Yan Li[2,3], Haruka Umezawa[1], Yuxi Lin[2], Naito Ishimoto[1], Yunseok Heo[2], Jae-Hyun Park[1,4], Jeremy R.H. Tame[1], Young-Ho Lee[2,5,6,7,8], Sam-Yong Park[1] ([1]*Graduate School of Medical Life Science, Yokohama City University*, [2]*Biopharmaceutical Research Center, Korea Basic Science Institute (KBSI)*, [3]*Research Institute of Biomedical and Health Science, Konkuk University*, [4]*Department of Molecular Cell Biology, Sungkyunkwan University*, [5]*Bio-Analytical Science, University of Science and Technology (UST)*, [6]*Graduate School of Analytical Science and Technology, Chungnam National University*, [7]*Department of Systems Biotechnology, Chung-Ang University (CAU)*, [8]*Frontier Research Institute for Interdisciplinary Sciences (FRIS)*)

1Pos006 集光アンテナ複合体であるフィコビリソームの高分解能構造解析に向けた取り組み
Approaches to high-resolution structural analysis of the phycobilisome, a photosynthetic light-harvesting antenna complex
**Yuya Fujita**[1,2], Soichiro Seki[2], Akihiro Kawamoto[1,2], Yuu Hirose[3], Genji Kurisu[1,2] ([1]*The University of Osaka, Grad. Sch. Engineering, Japan*, [2]*The University of Osaka, Institute for Protein Research (IPR), Japan*, [3]*Toyohashi University of Technology, Grad. Sch. Engineering, Applied chemistry and Life science, Japan*)

1Pos007 Co-crystal structure of a human 8-oxoguanine DNA glycosylase with photocaged substrate toward time-resolved crystallography
**Momoko Yumita**[1], Tomoki Imura[1], Yuhei Hosokawa[2], Kai-Chun Yang[2], Hsuan-Yu Shih[2], Manuel Maestre-Reyna[2], Junpei Yamamoto[1] ([1]*Graduate School of Engineering Science, Osaka University Department of Chemistry*, [2]*National Taiwan University*)

1Pos008 Structural basis for the mechanisms of complex assembly by the Influenza A virus nucleoprotein and importin
**Haruka Umezawa** (*Yokohama City Univ., Medical Life Science, Drug Design Lab.*)

1Pos009 巨大マルチドメインタンパク質の構造予測
Structure prediction of large multidomain proteins
**Ryota Kobayashi**[1], Suguru Fujita[1], Yoshitaka Moriwaki[2], Tohru Terada[1] ([1]*Grad. Sch. Agri. and Life Sci., Univ. Tokyo*, [2]*Med. Res. Lab., Inst. Integr. Res., Science Tokyo*)

1Pos010 Improved Resolution of *Enterococcus hirae* V-ATPase by cryo-EM: Structural Insights into the Full Complex
**Yuan-E Lee**[1], Raymond N. Burton-Smith[1,2], Akihiro Otomo[2,3], Kano Suzuki[4], Tsukasa Nakamura[5], Toshio Moriya[5], Takeshi Murata[4], Ryota Iino[2,3], Kazuyoshi Murata[1,2] ([1]*ExCELLS/NIPS, Okazaki*, [2]*SOKENDAI, Okazaki*, [3]*IMS, Okazaki*, [4]*Chiba University, Chiba*, [5]*KEK, Tsukuba*)

1Pos011 Crystal structure elucidation of *Rubricoccus marinus* halorhodopsin
**Naithok Khachuk Debbarma**[1], Takaaki Fujiwara[1,2], Eriko Nango[1,2] ([1]*Grad. Sch. Life Sci., Univ. Tohoku*, [2]*IMRAM .,Univ. Tohoku*)

## 01B. タンパク質：物性（安定性，折れたたみなど）／01B. Protein: Physical property

1Pos012 Kinetic Analysis of heparin-induced fibrillation of α-synuclein
**Takashi Ohgita**, Norihiro Namba, Nao Minami, Hiroyuki Saito (*Kyoto Pharm. Univ.*)

1Pos013 Rose Bengal を用いたタンパク質凝集プロセスの評価
Evaluation of Protein Aggregation Process Using Rose Bengal
**Gen Takebe**[1], Shigetoshi Okazaki[1], Heidi Ottevaere[2] ([1]*Hamamatsu Photonics K.K.*, [2]*Department of Applied Physics and Photonics, Vrije Universiteit Brussel*)

1Pos014 残基間距離と局所環境の相関によるアデニル酸キナーゼのアロステリックコミュニケーション経路の同定
Allosteric communication pathway within adenylate kinase elucidated by correlation between interresidue distances and local environments
**Shinichi Kurino**, Tomoki P. Terada (*Dept. Appl. Phys., Grad. Sch. Eng., Nagoya Univ.*)

1Pos015 VCD を用いたスパイクタンパク質フラグメントのアミロイド多形性および超分子キラリティの解析
Amyloid Polymorphism and Supramolecular Chirality in Spike Protein Fragment as Studied by Vibrational Circular Dichroism
**Shunsaku Nagai**[1], Hisako Sato[2], Izuru Kawamura[1] ([1]*Grad. Sch. Sci., Yokohama Natl Univ.*, [2]*Sch. Sci., Univ. Ehime*)

1Pos016 フッ素化アミノ酸を用いた膜貫通イオンチャネルの設計と特性評価
Design and characterization of transmembrane ion-channel peptide containing fluorinated amino acids
**Keiya Saito**[1], Daisuke Sato[2], Peng Zugui[3], Ai Niitsu[4], Ryuji Kawano[3], Izuru Kawamura[1] ([1]*Grad. Sch. Eng. Sci., Yokohama Natl. Univ.*, [2]*Inst. Sci. Eng., Ibaraki Univ.*, [3]*Inst. Eng., Tokyo Univ. of Agri. & Tech.*, [4]*Yokohama Inst., Riken*)

1Pos017 Gum Ghatti の乳化微粒子構造の解析
Structural Analysis of Emulsified Nanoparticles of Gum Ghatti
**Kento Yonezawa**[1,2], Sawa Fusamae[2], Yuya Iwao[2], Ryuki Iida[2], Shoma Igarashi[2], Naoya Sagawa[3], Keigo Kinoshita[3], Yoichi Yamazaki[2], Sachiko Toma[2], Hironari Kamikubo[1,2] ([1]*NAIST, CDG*, [2]*NAIST, M.S.*, [3]*San-Ei Gen F.F.I., inc.*)

1Pos018 エピガロカテキンガレートが LDL の物性に与える影響
Effect of the binding of epigallocatechin gallate to LDL on physical properties of LDLs
**Seiji Takeda**, Moeko Kitagawa, Naoya Ishihara, Takahisa Hiruma (*Faculty Parm. Sci. Hokkaido Univ. Sci.*)

1Pos019 シアノバクテリアの概日リズムを司る Kai 時計タンパク質の会合解離挙動
Association-dissociation behavior of Kai-clock proteins regulating cyanobacterial circadian rhythm
**Ken Morishima**, Ritsuki Sakamoto, Rintaro Inoue, Masaaki Sugiyama (*KURNS, Kyoto Univ.*)

## 01C. タンパク質：機能（反応機構，生物活性など）／01C. Protein: Function

1Pos020 Molecular Dynamics Study on the Taste-Recognition Mechanism of Human Taste Receptor Heterodimers
**Yu Yamamori**, Rikuri Morita, Yasuteru Shigeta, Ryuhei Harada (*center of computational science, University of Tsukuba*)

1Pos021 Structural and functional characterization of novel ice-binding protein isoforms discovered via genome and transcriptome analyses
**Tatsuya Arai[1,2]**, Kaho Uchizawa[2], Kosuke Maeda[2], Sakae Tsuda[1], Tomoyasu Aizawa[1,2] ([1]*Faculty of Advanced Life Science, Hokkaido University*, [2]*School of Science, Hokkaido University*)

1Pos022 Effect of phospholipid composition on binding behavior of α-synuclein to lipid membranes
**Norihiro Namba**, Shiori Ariyoshi, Honori Shiroshita, Takashi Ohgita, Hiroyuki Saito (*Kyoto Pharm. Univ.*)

1Pos023 KaiC のリン酸化率に依存した KaiC-KaiA 結合強度の変化
Phosphorylation-Level-Dependent Changes in KaiC–KaiA Binding Strength
**Arisa Nakao[1]**, Risako Aoyama[1], Yoichi Yamazaki[1], Shuji Akiyama[2,3], Kento Yonezawa[1,4], Hironari Kamikubo[1,4] ([1]*NAIST, MS*, [2]*CIMos, IMS, NINS*, [3]*SOKENDAI*, [4]*NAIST, CDG*)

1Pos024 Biochemical assay development for kinetic analysis of ATPase cycle of KaiC
**Yasuhiro Onoue[1]**, Yoshihiko Furuike[1,2], Shuji Akiyama[1,2] ([1]*Institute for Molecular Science, NINS*, [2]*The Graduate University for Advanced Studies (SOKENDAI)*)

1Pos025 トリプシン様蛋白質分解酵素のプロペプチド領域による酵素活性阻害機構
Mechanism of Enzyme Activity Inhibition by the Propeptide Region of a Trypsin-Like Protease
**Orika Ashida[1]**, Nana Sakata[1], Kairi Ogawa[1], Miki Matsuzaki[1], Mitsuhiro Miyazawa[2], Shigeru Shimamoto[1], Yuji Hidaka[1] ([1]*Grad. Sch. Sci. Eng., Univ. Kindai*, [2]*PrevenTec Inc.*)

1Pos026 メダカ由来プロスタグランジン結合蛋白質とリボフラビンの相互作用解析
Interaction analysis of medaka prostaglandin binding protein with riboflavin
**Kazuki Mitani[1]**, Koichi Uegaki[2], Shigeru Shimamoto[1] ([1]*Faculty of Science and Engineering, Kindai University*, [2]*Faculty of Agriculture, Kindai University*)

1Pos027 リポカリン型プロスタグランジン D 合成酵素の系統解析
Phylogenetic and Functional Analysis of Lipocalin-type Prostaglandin D Synthase
**Kodai Nakamoto**, Chinatsu Noma, Kei Iida, Shigeru Shimamoto (*Faculty of Science and Engineering, Kindai University*)

## 01D. タンパク質：計測・解析の方法論／01D. Protein: Measurement & Analysis

1Pos028 マルチドメインタンパク質のダイナミクスを特徴づける粗視化アプローチ
A coarse-grained approach to characterizing the dynamics of multi-domain proteins
**Chigusa Kobayashi[1]**, Yuji Sugita[1,2] ([1]*RIKEN R-CCS*, [2]*RIKEN PRI*)

1Pos029 リン酸結合タンパクを含む液滴チャンバーアレイにより高感度で検出する $F_1$-ATPase および PPase からの無機リン酸解離
Highly sensitive detection of phosphate released from $F_1$-ATPase and PPase using phosphate-binding protein in droplet chamber arrays
**Waren Imaoka[1]**, Tomohiro Aoyama[1], Yoshihiro Minagawa[2], Hiroshi Ueno[2], Nobukiyo Tanaka[1], Hiroyuki Noji[2], Tomoko Masaike[1] ([1]*Dept. Appl. Biol. Sci., Tokyo Univ. Sci.*, [2]*Dept. Appl. Chem., Univ. Tokyo*)

1Pos030 細胞内タンパク質結晶生成過程とその可視化
The process of intracellular protein crystal formation and its visualization
**Etsuko Tokunaga**, Yasufumi Umena (*NUSR, Univ. Nagoya*)

1Pos031 MD シミュレーションとニューラルネットワークを組み合わせたタンパク質の高速 AFM 画像解析
Analysis of HS-AFM images of proteins combining MD simulation and Neural Network
**Katsuki Sato**[1], Yui Kanaoka[2], Tomoya Tsukazaki[3], Takayuki Uchihashi[2], Takaharu Mori[1] ([1]*Tokyo University of Science*, [2]*Nagoya University*, [3]*Nara Institute of Science and Technology*)

1Pos032 デキストラン結合酵素グルカンスクラーゼはデキストラン–ポリエチレングリコール混合系での液滴形成を誘導する
Dextran-Binding Enzyme Glucansucrase Induces Droplet Formation in Dextran– Polyethylene Glycol Mixtures
**Mikage Iwakiri**, Hideyuki Komatsu (*Department of Bioscience and Bioinformatics, Faculty of Systems Engineering and Computer Science,, Kyushu Institute of Technology*)

1Pos033 ロボット機構学に基づくタンパク質の内部運動特性予測のための計算フレームワークの開発
Development of a Computational Framework for Predicting the Internal Motion Properties of Proteins Based on Robot Kinematics
**Keisuke Arikawa** (*Fcl. Eng., Kanagawa Inst. of Tech.*)

## 01E. タンパク質：タンパク質工学／進化工学／01E. Protein: Engineering

1Pos034 多様なカーゴ分子を媒介とした非ウイルス性タンパク質カプシドの試験管内形成と形態制御
In vitro assembly of a nonviral protein capsid and its morphological control mediated by versatile cargos
**Kenya Tajima**[1], Yusuke Sakai[2,3], Naohiro Terasaka[1] ([1]*Earth-Life Science Institution, Institute of Future Science, Institute of Science Tokyo*, [2]*RIKEN Center for Biosystems Dynamics Research*, [3]*Institute for Quantitative Biosciences, The University of Tokyo*)

1Pos035 Model screening of an epitope-tag peptide from a random library consisting of a reduced set of amino acids using PL display
**Shingo Ueno**, Fumi Toshioka, Takanori Ichiki (*iCONM, Kawasaki Inst. Industry. Promo.*)

1Pos036 分子進化によるウイルス模倣粒子の構造多様化と機能化
Functionalization and structural diversification of artificial nucleocapsids by laboratory evolution
**Naohiro Terasaka** (*Earth-Life Sci. Inst., Inst. Future Sci., Inst. Sci. Tokyo*)

1Pos037 細胞内タンパク質結晶エンジニアリングによる刺激応答固相転移
Engineering in-cell protein crystals for the stimuli-responsive solid-solid phase transitions
**Kosuke Kikuchi**[1], Misaki Nagama[1], Junko Tanaka[1], Haonan Kong[1], Satoshi Abe[2], Takafumi Ueno[1,3] ([1]*Sch. of Life Sci. and Tech., Science Tokyo*, [2]*Grad. Sch. of Life and Env. Sci., KPU*, [3]*IIR-ASMat, Science Tokyo*)

1Pos038 アクティブ・ラーニングによる ATP 合成酵素の阻害タンパク質 $IF_1$ の再設計
Redesign of the inhibitor protein $IF_1$ for ATP synthase via an active-learning framework
**Ryohei Kobayashi**[1,2], Constantin Guyot[2,3], Jun Ohnuki[2,3], Hiroyuki Noji[1,4], Kei-ichi Okazaki[2,3] ([1]*Dep. Appl. Chem., Grad. Sch. Eng., Univ. Tokyo*, [2]*Institute for Molecular Science*, [3]*SOKENDAI*, [4]*RIPH, Univ. Tokyo*)

## 01F. タンパク質：天然変性／01F. Protein: Intrinsic disorder

1Pos039 高速 AFM・生化学手法による E6AP/E6/p53 複合体の構造動態の統合的解析
Integrated analysis of structural dynamics of E6AP/E6/p53 complex by HS-AFM and biochemical methods
**Soma Yamamoto**[1,2], Holger Flechsig[3], Hiroki Konno[3] ([1]*Grad. Sch. of Nat. Sci. & Technol., Kanazawa Univ.*, [2]*WISE Program for Nano-Precision Medicine, Science, and Technology, Kanazawa Univ.*, [3]*WPI Nano Life Sci. Inst. (WPI-Nano LSI), Kanazawa Univ.*)

1Pos040 MAP7 は微小管結合を介して FUS の相分離を制御する：ALS 関連変異体との相互作用比較からの示唆
MAP7 Regulates FUS Condensate Formation via Microtubule Binding: Insights from ALS-Linked Mutant Interactome Analysis
**Kyota Yasuda**[1,5,7], Hyun-woo Rhee[4,7], Tomonobu Watanabe[1,2,3], Shin-ichi Tate[1,5,6,7] ([1]*Grad. Sch. Int. Sci. Life., Univ. Hiroshima*, [2]*Res. Int. Radiation. Bio. Med., Univ. Hiroshima*, [3]*BDR, RIKEN*, [4]*Chem., SNU*, [5]*RcMcD, Univ. Hiroshima*, [6]*MIMS, Univ. Meiji*, [7]*WPI-SKCM2*)

1Pos041 高速原子間力顕微鏡を用いたヒストンテール動態モニタリング
Histone tail dynamics monitoring using high-speed atomic force microscopy
**Ryota Imada**[1], Quynh Pham[2], Yusuke Miyanari[3], Shoko Sato[4], Hitoshi Kurumizaka[4], Mikihiro Shibata[3,5] ([1]*Grad. Sch. Math. & Phys., Kanazawa Univ.*, [2]*Grad. Sch. NanoLS., Kanazawa Univ.*, [3]*WPI-NanoLSI, Kanazawa Univ.*, [4]*Institute for Quantitative Biosciences, Tokyo Univ.*, [5]*InFiniti, Kanazawa Univ.*)

1Pos042 酵母プリオン Sup35 の液滴形成過程の高速 AFM 観察
High-speed AFM observation of the droplet formation process of yeast prion Sup35
**Aya Ogino**[1], Yumiko Ohhashi[2], Hideki Taguchi[2], Hiroki Konno[3] ([1]*Grad. Sch. of Nat. Sci. & Technol., Kanazawa Univ.*, [2]*Inst. of Integ. Res., Science Tokyo.*, [3]*WPI Nano Life Sci. Inst. (WPI-Nano LSI), Kanazawa Univ.*)

## 02. ヘムタンパク質／02. Heme proteins

1Pos043 単結晶およびシリカゲル中機能解析でヘモグロビンのアロステリック平衡を読み解く
Deciphering hemoglobin allosteric equilibria through functional analysis in single crystals and silica gels
**Naoya Shibayama** (*Div. Biophys., Jichi Med. Univ.*)

1Pos044 ウシ心筋シトクロム酸化酵素の核 DNA 由来サブユニットにより形成される疎水性チャネルの構造解析
Structural analysis of a hydrophobic channel formed by nuclear DNA-coded subunit of bovine heart cytochrome *c* oxidase
**Kazumasa Muramoto**, Kyoko Shinzawa-Itoh (*Grad. Sch. Sci., Univ. Hyogo*)

## 03. 膜タンパク質／03. Membrane proteins

1Pos045 海洋性ビブリオ菌におけるプロトン駆動べん毛モーターのストマチン様タンパク質 FliL と MotAB 固定子複合体の相互作用
Association of stomatin-like protein FliL and MotAB stator complex of proton-driven flagellar motor in marine *Vibrio*
**Michio Homma**[1,2], Kazuki Yokoyama[3], Norihiro Takekawa[4], Tatsurou Nishikino[5], Hajime Nakatani[1], Seiji Kojima[3] ([1]*Dep. Biomol. Eng., Grad. Sch. Eng., Nagoya Univ.*, [2]*Dep. of Physics, Grad. Sch. Sci., Nagoya Univ.*, [3]*Div. Biol. Sci., Grad. Sch. Sci., Nagoya Univ.*, [4]*Dep. Macromol. Sci., Grad. Sch. Sci., Osaka Univ.*, [5]*Dep. Life Sci. Appl. Chem., Nagoya Inst.Tech.*)

1Pos046 ATR-FTIR による環状ヌクレオチド依存性カリウムチャネル SthK のリガンド選択の分子機構研究
Investigation of molecular mechanisms of ligand selection in a cyclic nucleotide dependent potassium channel SthK by using ATR-FTIR
**Taisei Maeda**[1], Tatsuro Nishikino[1,2], Hiroki Ogasawara[3], Hiroto Fukuda[3], Yuji Furutani[1,2] ([1]*Graduate School of Engineering, Nagoya Institute of Technology*, [2]*Optobiotechnology Research Center*, [3]*Nagoya Institute of Technology*)

1Pos047 Visualization and analysis of P-glycoprotein dynamics by using HS-AFMVisualization and analysis of P-glycoprotein dynamics by using HS-AFM
**Yui Kanaoka**[1], Takeshi Murata[2], Takayuki Uchihashi[1,3] ([1]*Grad. Sch. Sci., Univ. Nagoya*, [2]*Grad. Sch. Sci., Univ. Chiba*, [3]*ExCELLS*)

1Pos048 異種タンパク質結合 OmpG ナノポアの開閉挙動観察
Observation of gating behavior of OmpG nanopore conjugating other protein
**Kazuha Endo**, Koki Kamiya (*Grad. Sch. Sci. & Tech., Gunma univ.*)

## 04. DNA・DNA 結合タンパク質／04. DNA & DNA binding proteins

1Pos049 近接した標的 DNA 配列のタンデムリピートに集積する Dof 転写因子の 1 分子観察
Single-molecule observation of Dof transcription factor accumulating to neighboring tandem repeats of target DNA sequences
**Hayato Yamashita**[1], Akihiro Tsuji[1], Hirotake Furihata[2], Zhangliang Zhu[2,3], Takuya Miyakawa[2,3], Masayuki Abe[1] ([1]*Grad. Sch. Eng. Sci., Univ. Osaka*, [2]*Grad. Sch. Agr. Sci., Univ. Tokyo*, [3]*Grad. Sch. Bio., Kyoto Univ.*)

1Pos050 UvrD ヘリカーゼの野生型と C 末端欠失変異体間の DNA を介した相互作用
DNA-mediated interaction between wild-type and C-terminal deletion mutants of UvrD helicase
**Hiroaki Yokota** (*Grad. Sch. New Photon. Indust.*)

1Pos051 液液相分離により形成するナノスケール凝縮体の蛍光寿命相関解析
Fluorescence lifetime correlation analysis on nanoscale liquid condensates formed through liquid-liquid phase separation
**Rene Toyama**, Miyuki Sakaguchi, Shoichi Yamaguchi, Takuhiro Otosu (*Grad. Sch. Sci. Eng., Saitama Univ.*)

## 05. RNA・RNA 結合タンパク質／05. RNA & RNA binding proteins

1Pos052 Folding of Frameshift-Stimulating RNA Pseudoknots Is Modulated by the Upstream Structures
**Jin-Der Wen** (*National Taiwan University*)

## 06. DNA/RNA ナノテクノロジー／06. DNA/RNA nanotechnology

1Pos053 自己複製を目指した成長する DNA 液滴の設計
Design of Growing DNA Droplets Toward Self-Replication
**Yusei Kudo**[1], Tomoya Maruyama[3], Masahiro Takinoue[1,2,3] ([1]*Sch. of Computer Science, Institute of Science Tokyo*, [2]*Sch. of Life Science and Technology, Institute of Science Tokyo*, [3]*Research Center for Autonomous Systems Materialogy (ASMat), Institute of Integrated Research, Institute of Science Tokyo*)

1Pos054 miRNA の濃度を認識する DNA 液滴コンピュータ構築を目指した化学反応シミュレーション
Chemical reaction simulation for development of DNA droplet computers which recognize concentration of miRNAs
**Chisa Kato**[1], Yuko Yoshida[1], Masahiro Takinoue[1,2,3] ([1]*Sch. Comp. Sci., Inst. Sci. Tokyo*, [2]*Sch. Life Sci. Tech., Inst. Sci. Tokyo*, [3]*ASMat, Inst. Sci. Tokyo*)

1Pos055 自動分注ロボットと機械学習を用いた DNA 論理回路の自動設計
Automated design of DNA logic circuits using automated pipetting robots and machine learning
**Yuko Yoshida**[1], Kanta Takagi[1], Masahiro Takinoue[1,2,3] ([1]*School of Computer Science, Institute of Science Tokyo*, [2]*School of Life Science and Technology, Institute of Science Tokyo*, [3]*Research Center for Autonomous Systems Materialogy (ASMat), Institute of Science Tokyo*)

1Pos056 DNA ナノミウラ折り：力学的に変形可能なナノ折り紙構造
DNA-Based Miura-ori: A Mechanically transformable Nano-Origami Architecture
**Daisuke Ishikawa**[1], Ibuki Kawamata[2], Masahiko Hara[3], Masashi Ikeuchi[1] ([1]*LBB, Science Tokyo*, [2]*Grad. Sch. Sci., Kyoto Univ.*, [3]*Sch. Mater. Chem. Technol., Tokyo Tech*)

## 07. 核酸：その他／07. Nucleic acid: Others

1Pos057 CRISPR Cas13a システムを用いた *Salmonella* RNA のデジタル検出
Digital Detection of *Salmonella* RNA with CRISPR Cas13a system
**Svitlana Kovalchuk**[1], Yoshihiro Minagawa[1], Hiroyuki Noji[1,2] ([1]*Graduate School of Engineering, The University of Tokyo*, [2]*Research Institute of Planetary Health (RIPH), The University of Tokyo*)

1Pos058 静電相互作用により誘起された不均一な DNA 溶液中の力の伝搬
Force propagation in heterogeneous DNA solution induced by electrostatic interactions
**Miku Nakao**[1], Saki Matsuyama[1], Akinori Miyamoto[2], Yoshihiro Murayama[1,2] ([1]*Dep. Biomedical Engineering., Grad. Sch. Engineering., Tokyo University of Agriculture and Technology*, [2]*Dep. Applied Physics., Grad. Sch. Engineering., Tokyo University of Agriculture and Technology*)

## 08. クロマチン・染色体／08. Chromatin & Chromosomes

1Pos059 分子動力学シミュレーションを用いたインターカレーションした DNA とヌクレオソームの構造ダイナミクス解析
The conformation and dynamics of intercalated DNA and nucleosome analyzed by molecular dynamics simulation
**Hisashi Ishida**[1], Hidetoshi Kono[1,2] ([1]*Inst. Quantum Life Sicence, QST*, [2]*cQUEST, Chiba Univ.*)

1Pos060 Unveiling the centromere/kinetochore structure in chicken DT40 cells using expansion microscopy and fluorescence correlation spectroscopy
**Yasuhiro Hirano**[1,2], Akira Kitamura[3], Toru Hirota[2], Tatsuo Fukagawa[1] ([1]*Graduate School of Frontier Biosciences, The University of Osaka*, [2]*Cancer Institute of JFCR*, [3]*Faculty of Advanced Life Science, Hokkaido University*)

1Pos061 凝縮体形成と共役した転写動態の粒子ベース反応動力学モデリング
Particle-based modeling of reactive dynamics of transcription coupled with condensate formation
**Daiki Sugata**, Shoji Takada (*Grad. Sch. Biol., Univ. Kyoto*)

## 09. 電子状態／09. Electronic

1Pos062 エネルギー準位統計によるペプチドの分類
Classification of peptides by energy level statistics
**Masanori Yamanaka** (*CST, Nihon Univ.*)

## 10. 水・水和／電解質／10. Water & Hydration & Electrolyte

1Pos063 物理学の知識を組み込んだ AI 創薬の開発
Development of drug discovery AI incorporating physics-based knowledge
**Yuuka Ogawa**[1], Tatsuki Kawauchi[2], Tomohiko Hayashi[2] ([1]*Faculty of Engineering, Niigata Univ.*, [2]*Grad. Sch. Sci. and Tech., Niigata Univ.*)

1Pos064 トレハロース水溶液を用いた AQP 過剰発現 CHO 細胞の凍結保存
Cryopreservation of AQP4-overexpressing CHO cells using trehalose aqueous solution
**Sumire Matsuo**[1], Masato Yasui[2], Youichiro Abe[2], Tsutomu Uchida[3] ([1]*Graduate school of engineering, Hokkaido University*, [2]*School of Medicine, Keio University*, [3]*Faculty of Engineering, Hokkaido University*)

## 12. 発生・分化／12. Development & Differentiation

1Pos065 人工ヒト胚モデルにおける細胞移動とパターン形成
Cell Migration and Pattern Formation in Engineered Human Embryo Models
**Kiyoshi Ohnuma**[1], Chihiro Takeuchi[1], Hazuki Tsuboi[1], Ryo Kojima[1], Tsuji Shota[1], Emilio Macias Estrada Raul[1], Hayashi Yohei[2], Miyu Mori[1] ([1]*Nagaoka University of Technology*, [2]*RIKEN*)

1Pos066 画像からの細胞間力の推定と多細胞形態形成
Image-based force inference of pairwise cell-cell interactions for multicellular morphogenesis
**Hiroshi Koyama**[1,2], Toshihiko Fujimori[1,2] ([1]*Div. Embryology, NIBB*, [2]*SOKENDAI (Graduate University for Advanced Studies)*)

## 13. 筋肉（筋蛋白質・収縮）／13. Muscle

1Pos067 ミオシン頭部の 1 分子実験と筋繊維実験の両方を再現する計算モデルの構築
Construction of a simulation model which reproduces both of the single molecule experiment of myosin head and the muscle fiber experiment
**Kenshiro Kaneko**, Tomoki P. Terada (*Dept. Appl. Phys., Grad. Sch. Eng., Nagoya Univ.*)

1Pos068 ファシンにより形成されたアクチン束の崩壊過程ダイナミクスのリアルタイム観察
Real-Time observation of the Disassembly of Fascin-Mediated Actin Bundles
**Masayuki Hoshida**[1,2], Takumi Toji[2], Tatsuya Iwata[3], Noriko Takeuchi[1], Hajime Honda[2], Ikuko Fujiwara[2] ([1]*School of Health Sciences, Kitasato University*, [2]*Materials Sci. & Bioeng., Nagaoka Univ. of Tech.*, [3]*Faculty of Pharmaceutical Sciences, Toho University*)

## 14. 分子モーター／14. Molecular motor

1Pos069 バクテリア鞭毛モーターにおける MotAB の駆動機構：理論モデルによるアプローチ
Exploring the Driving Mechanism of MotAB in the Bacterial Flagellar Motor via Theoretical Modeling
**Shintaroh Kubo**[1,2], Yasushi Okada[3], Shoji Takada[4] ([1]*Wako, RIKEN*, [2]*Dept. of Applied Chem., the Univ. of Tokyo*, [3]*Dept. of Med., the Univ. of Tokyo*, [4]*Grad. Sch. Sci., Kyoto Univ.*)

1Pos070 ADP-Pi ミオシン S1 と F-actin 間駆動力の物理原理について
On the physical principle of the driving force between myosin S1 with ADP-Pi and F-actin
**Makoto Suzuki** (*Tohoku University*)

1Pos071 キネシン 1 の協調的運動における情報ラチェット機構
Information ratchet mechanism for the coordinated unidirectional movement of kinesin-1
**Michio Tomishige**[1], Hiroshi Isojima[2], Kohei Matsuzaki[1] ([1]*Dept. Phys. Sci., Aoyama Gakuin Univ.*, [2]*Dept. Appl. Phys., Univ. Tokyo*)

1Pos072 動的水チャネルを介したべん毛モーターの回転運動の全原子分子動力学解析
All-atom molecular dynamics analysis of rotational motion of flagellar motor mediated by dynamic water channels
**Yukinari Kamiyama**, Takumi Matsumoto, Tsubasa Nakai, Mitsunori Takano (*Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*)

1Pos073 DNA 人工分子モーターの合理的性能向上
Rational performance improvement of DNA artificial molecular motor
**Takanori Harashima**[1,2], Akihiro Otomo[1,2], Ryota Iino[1,2] ([1]*Institute for Molecular Science*, [2]*Graduate Institute for Advanced Studies, SOKENDAI*)

1Pos074 Modulating potential alignment to enhance molecular motor speed
**Akihiro Fukuda**, Yohei Nakayama, Shoichi Toyabe (*Grad. Sch. Eng., Tohoku Univ.*)

1Pos075 Rhodamine-Phalloidin によって可視化されたアクチンフィラメントの構造多型性は，リン酸および ATP ＋ミオシン II によって抑制される
Structural polymorphism of actin filaments revealed by Rhodamine Phalloidin is suppressed by phosphate and ATP + myosin II
**Kenta Toshino**, Taro Q.P. Uyeda (*Dept. Pure. & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*)

1Pos076 最高速 AFM によって明らかになった回転子のない $F_1$-ATPase の化学-力学カップリング
Chemomechanical coupling in rotor-less $F_1$-ATPase revealed by high-speed atomic force microscopy
**Shingo Fukuda**[1], Akihiro Otomo[2,3], Ryota Iino[2,3], Toshio Ando[1] ([1]*WPI NanoLSI, Kanazawa Univ.*, [2]*Inst. for Mol. Sci., NINS*, [3]*SOKENDAI*)

1Pos077 テザーの改変によるキネシン-1 モータードメインの基本的運動機構の解明
Tether-dependent regulation reveals core motility mechanism of the kinesin-1 motor domain
**Rieko Sumiyoshi**[1], Masahiko Yamagishi[1,2], Junichiro Yajima[1,2,3] ([1]*Grad. Arts & Sci., Univ. Tokyo*, [2]*Komaba Inst. Sci., Univ. Tokyo*, [3]*RCCSB, UBI, Univ. Tokyo*)

1Pos078 C.elegans キネシン BMK-1 と有糸分裂キネシン Eg5 阻害剤の生化学的特性と相互作用
Biochemical Characterization and Interaction of *C.elegans* kinesin BMK-1 with Mitotic Kinesin Eg5 Inhibitors
**Fofou Yonta Tostani**, Shunsuke Kumagai, Nur Fatin Liyana Binti Salwadi, Shinsaku Maruta (*Grad.Sch., Soka Univ.Tokyo*)

1Pos079 KIF6 による鞭毛運動とエネルギー調節の分子メカニズム
KIF6's Role in Ciliary Motility and Energy Regulation
**Tsukasa Makino**[1], Chizuru Ito[2], Takeshi Masuda[3], Kazuho Ikeda[1], Daisuke Takao[1,4], Yasushi Okada[1,5], Kiyotaka Toshimori[2], Masahide Kikkawa[1] ([1]*Univ. Tokyo*, [2]*Chiba Univ.*, [3]*Keio Univ.*, [4]*Huazhong Agricultural Univ.*, [5]*RIKEN BDR*)

## 15A. 細胞生物学的課題：接着／15A. Cell biology: Adhesion

1Pos080 歯周病菌の線毛の先端蛋白質 FimD の X 線結晶構造解析
Structure of FimD, a tip protein of the pili of gum disease bacterium *Porphyromonas gingivalis*
**Norihiro Takekawa**, Yusuke Ando, Rei Kojima, Katsumi Imada (*Grad. Sch. Sci., Osaka Univ.*)

1Pos081 細胞形態切り替え材料による細胞周期の進行速度操作への試み
Modulating Cell Cycle Progression by Dynamic Control of Cell Shape Using Stimuli-Responsive Substrates
**Sayaka Masaike**, Satoru Kidoaki (*IMCE, Univ. Kyushu*)

## 15B. 細胞生物学的課題：運動／15B. Cell biology: Motility

1Pos082 巨大繊毛虫 *Spirostomum ambiguum* の細胞伸長に関わる表層微小管束間の滑り運動
Active sliding between microtubule ribbons extending from the ciliary basal bodies elongates the giant ciliate *Spirostomum ambiguum*
Kosuke Nakamura[1], Seiji Sonobe[1], **Kazuhiro Oiwa[1,2]** ([1]*Grad. Sch. Sci., Univ. Hyogo*, [2]*Adv. ICT Res. Inst., NICT, Kobe*)

1Pos083 時間情報を用いたアメーバ細胞の牽引力場測定
Inference of cellular traction forces using temporal information
**Kazuko Hamaoka**, Hirokazu Tanimoto (*Grad. Sch. Nanobiosci., Yokohama City Univ.*)

1Pos084 CheY Phosphorylation-Mediated Turning Enables Polarity Alignment at the Swarming Front in *Vibrio alginolyticus*
**Kakeru Sumitomo**, Ikuro Kawagishi, Masatoshi Nishikawa (*Grad. Sch. Sci., Univ. Hosei*)

1Pos085 Mechanosensitive adhesion complexes that lead to complex cell crawling behaviors in a one-dimensional track.
**Hsuan-Yi Chen** (*National Central University*)

1Pos086 制御された局所外力印加により明らかにする細胞境界の変形と分子応答の因果関係
Reveal the causal relationship between tissue deformation and molecular response through optical manipulation
**Kenji Nishizawa[1]**, Shao-Zhen Lin[3], Claire Chardès[2], Jean-François Rupprecht[3], Pierre-François Lenne[2] ([1]*Graduate School of Engineering, Tohoku University*, [2]*CNRS, Centre de Physique Théorique.*, [3]*CNRS, The Institute of Developmental Biology of Marseille.*)

1Pos087 リアルタイムフィードバック機構を用いたサブストレイトの硬さによる機械刺激への拍動応答
Modulation of Beating Response to Mechanical Stimulation by Substrate Stiffness Using Real-Time Feedback Control
**Ayaka Namiki**, Arisa Mizutani, Yuuta Moriyama, Toshiyuki Mitsui (*Dept. Phys. Sch. Sci., Aoyamagakuin Univ.*)

1Pos088 Integrative Spatiotemporal Analysis of Collective Cell Migration and ERK Dynamics in Epithelial MDCK Wound Healing
**Lisna Hidayati[1]**, Kazuhiro Aoki[2], Yuichi Sakumura[1] ([1]*Graduate School of Science and Technology, Nara Institute of Science and Technology*, [2]*Graduate School of Biostudies, Kyoto University*)

## 15C. 細胞生物学的課題：細胞骨格・膜骨格／15C. Cell biology: Cytoskeleton & Membrane skeleton

1Pos089 破骨細胞融合における membrane-cortex attachment と BAR タンパク質の機械的制御
Mechanical control of cell-cell fusion during osteoclastogenesis by membrane-cortex attachment and BAR proteins
**Yuri L. Nemoto[1,2]**, Yumeng Wan[2], Tsukasa Oikawa[3], Kazunori Takano[4], Takahiro K. Fujiwara[5], Kazuya Tsujita[1,2], Toshiki Itoh[1,2] ([1]*Biosignal Research Center, Kobe University*, [2]*Kobe University Graduate School of Medicine*, [3]*Graduate School of Medicine, Hokkaido University*, [4]*Graduate School of Science, Chiba University*, [5]*Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University*)

1Pos090 幅広い細胞種に適応した中心体単離手法の開発
Development of centrosome isolation methods adaptable to various cell types
**Momoko Miyazawa**, Shohei Yamamoto, Daiju Kitagawa (*Grad. Pharm., Univ. Tokyo*)

1Pos091 TIRF 解析によるアクチン重合ダイナミクスにおける His161 の役割解明
Elucidating the role of His161 in actin polymerization dynamics using TIRF analysis
**Kota Onozato[1]**, Mitsusada Iwasa[2], Shuichi Takeda[2], Toshiro Oda[3], Hajime Honda[1], Ikuko Fujiwara[1] ([1]*Materials Sci. & Bioeng., Nagaoka Univ. of Tech.*, [2]*Grad. Sch. Info., Nagoya Univ.*, [3]*Facaulty of Health and Welfare, Tokai Gakuin University*)

1Pos092 アクチン重合制御における古細菌ゲルゾリン各ドメインの TIRF および構造解析による機能解明
Dissecting Domain Functions of Archaeal Gelsolin in Actin Assembly by TIRF and Structural Analyses
**Houryou Mizuki[1]**, Shuichi Takeda[2,3], Robert Robinson[3,4], Ikuko Fujiwara[1] ([1]*Materials Sci. & Bioeng., Nagaoka Univ. of Tech.*, [2]*Grad. Sch. Info., Nagoya Univ.*, [3]*RIIS, Okayama Univ.*, [4]*VISTEC, Thailand.*)

1Pos093 TIRF 顕微鏡と構造解析により明らかになった Cytochalasin D のアクチンフィラメント作用機構
Cytochalasin D Inhibits Actin Dynamics through Transient Capping and Severing
**Takahiro Mitani[1]**, Shuichi Takeda[2], Toshiro Oda[3], Akihiro Narita[4], Yuichiro Maéda[2], Hajime Honda[1], Ikuko Fujiwara[1] ([1]*Materials Sci. & Bioeng., Nagaoka Univ. of Tech.*, [2]*Grad. Sch. Info., Nagoya Univ.*, [3]*Fac. Health & Welf., Tokai-gakuin Univ.*, [4]*Grad. Sch. Sci., Nagoya Univ.*)

1Pos094 初期胚における一過的な核の物性変化と転写のバーストの促進
Changes in the physical properties of early embryonic nuclei promote a transcriptional burst
**Masahito Tanaka[1]**, Rin Sakanoue[2], Atsushi Takasu[2], Yasuki Miyagawa[3], Naoko Watanabe[1], Yu-Chia Chen[4], Aussie Suzuki[4], Kei Miyamoto[2,3], Yuta Shimamoto[1,5] ([1]*Laboratory of Physics and Cell Biology, National Institute of Genetics.*, [2]*Graduate School of Biology-Oriented Science and Technology, Kindai University*, [3]*Faculty of Agriculture, Kyushu University*, [4]*McArdle Laboratory for Cancer Research, Department of Oncology, University of Wisconsin-Madison*, [5]*Department of Genetics, Sokendai University*)

## 15D. 細胞生物学的課題：情報伝達・細胞膜／15D. Cell biology: Signal transduction & Cell membrane

1Pos095 The mechanical properties of cells grown at the interface of ferroelectric domain walls
**Alexis Borowiak**, Takeshi Shimi, Yohei Kono, Takeshi Fukuma (*NanoLSI, Kanazawa University*)

1Pos096 1 分子 SuperPAINT 法による細胞膜全体にわたる動的ナノスケール不均一性の可視化
SuperPAINT visualization of dynamic nanoscale heterogeneity of the entire plasma membrane
**Maoji Wang[1]**, Bo Tang[1], Takahiro Fujiwara[2], Taka-Aki Tsunoyama[1], Akihiro Kusumi[1] ([1]*Okinawa Institute of Science and Technology*, [2]*Institute for Integrated Cell-Material Sciences, Kyoto University*)

1Pos097 大腸菌細胞内 $Ca^{2+}$恒常性の再検討
A reconsideration of intracellular $Ca^{2+}$ homeostasis in *Escherichia coli*
**Takemasa Nakamura[1]**, Hiroyuki Noji[1,2], Kazuhito Tabata[1,2] ([1]*Department of Applied Chemistry, School of Engineering, University of Tokyo*, [2]*Research Institute of Planetary Health (RIPH), The University of Tokyo*)

1Pos098 抑制性シナプス形成の開始機構：ゲフリンと Ena/VASP の共凝縮体形成によるアクチン重合
Initiators for inhibitory synapse formation: actin polymerization induced by co-condensation of gephyrin and Ena/VASP family proteins
**Amine Aladag[1]**, Taka-Aki Tsunoyama[1], Irina Meshcheryakova[1], Maoji Wang[1], Jun-Seok Lee[1], Bo Tang[1], Hiroko Hijikata[3], Takahiro K Fujiwara[3], Sawako Yamashiro[2], Akihiro Kusumi[1] ([1]*Okinawa Institute of Science and Technology*, [2]*Kyoto University Graduate School of Biostudies*, [3]*Kyoto University Institute for Integrated Cell-Material Sciences, KUIAS*)

1Pos099 ホスホリパーゼ D によるミリストイル化タンパク質の拡散および Ras/PIP3 ドメインの制御
Phospholipase D regulates on-membrane diffusivity of a myristoylated protein and defines the Ras/PIP3 patch territory
**Gen Honda[1,2]**, Satoshi Sawai[1,3], Miho Yanagisawa[1,2,3] ([1]*Department of Basic Science, Graduate School of Arts and Sciences, University of Tokyo*, [2]*Komaba Institute for Science, Graduate School of Arts and Sciences, University of Tokyo*, [3]*Research Center for Complex Systems Biology, Graduate School of Arts and Sciences, University of Tokyo*)

1Pos100 Two distinct regulatory mechanisms limiting macrophage phagocytosis: membrane backtracking and inhibition of phagocytosis initiation
**Dan Horonushi[1]**, Souta Suzuki[1], Maiha Ando[1], Haruka Yuki[1], Shinya Kato[1], Kenji Yasuda[1,2] ([1]*Dept. Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*, [2]*Dept. Phys., Sch. Adv. Sci. & Eng., Waseda Univ.*)

1Pos101 神経細胞による心筋細胞集団間の興奮伝導接続
Excitatory Connection Between Cardiomyocyte Populations Mediated by Neurons
**Ayuri Sakaguchi**, Kentaro Kito, Tomoyuki Kaneko (*LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ., Tokyo, Japan*)

1Pos102 複数微粒子貪食数に対する細胞膜最大伸長量の応答変化計測からの最大貪食機能の解明
Determining Maximum Macrophage Phagocytosis by Measuring Membrane Extension Response During Sequential Particle Uptake
**Shinya Kato[1]**, Dan Horonushi[1], Haruka Yuki[1], Kei Shibata[2], Syunya Morikawa[2], Kenji Yasuda[1,2] ([1]*Dept. Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*, [2]*Dept. Phys., Sch. Adv. Sci. & Eng., Waseda Univ.*)

1Pos103 オプソニン化マイクロニードルに対するマクロファージ応答の極性を明らかにする貪食膜伸長と細胞運動の相関解析
Coupled coordination of phagocytic membrane extension and cell migration reveals polarity in macrophage response to opsonized microneedles
**Haruka Yuki[1]**, Dan Horonushi[1], Maiha Ando[1], Sinya Kato[1], Kenji Yasuda[1,2] ([1]*Dept. Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*, [2]*Dept. Phys., Sch. Adv. Sci. & Eng., Waseda Univ.*)

1Pos104 単一細胞レベルにおける直線状心筋細胞ネットワークの伝導速度
Conduction Velocity of Linear Cardiomyocyte Networks at single-cell level
**Shinnosuke Mori**, Tomoyuki Kaneko (*LaRC, FB, Hosei Univ.*)

## 16A. 生体膜・人工膜：構造・物性／16A. Biological & Artificial membrane: Structure & Property

1Pos105 環境応答性蛍光色素によるモデル脂質膜とタウタンパク質の相互作用解析
Interactions between Lipid Membranes and Tau Protein Probed by Environment-Sensitive Fluorescent Probes
**Chiho Watanabe** (*Grad. Sch. Int. Sci. Life, Hiroshima Univ.*)

1Pos106 Computational studies of the disruption mechanism of pathogenic bacterial membrane by coco-glucoside from coconut oil
**Phonphiphat Bamrung** (*คณะวิทยาศาสตร์ มหาวิทยาลัยเกษตรศาสตร์*)

1Pos107 人工甘味料スクラロースによる DPPC モデル生体膜における指組ゲル相形成
The artificial sweetener sucralose induces the formation of an interdigitate gel phase in DPPC model biomembranes
Emika Matsumoto[1], Michael Postrado[2], **Hiroshi Takahashi[2]** ([1]*Sch. Sci. Tech. Gunma Univ.*, [2]*Grad. Sch. Sci. Tech. Gunma Univ.*)

1Pos108 2本のうち1本の疎水鎖末端を部分フッ素化したリン脂質が膜タンパク質バクテリオロドプシン(bR)の四次構造と光サイクルに及ぼす影響
Quaternary structure and photocycle of bR in bilayers composed of phospholipids with a single partially fluorinated hydrophobic chain
**Ai Nakagawara**[1], Takafumi Shimoaka[1], Toshiyuki Takagi[2], Hiroshi Takahashi[1], Takashi Kikukawa[3], Hideki Amii[1,4], Masashi Sonoyama[1,4,5] ([1]*Grad. Sch. Sci. & Tech., Gunma Univ.*, [2]*AIST*, [3]*Fac. Adv. Life. Sci., Hokkaido Univ.*, [4]*GIAR, Gunma Univ.*, [5]*GUCFW, Gunma Univ.*)

## 16B. 生体膜・人工膜：ダイナミクス／16B. Biological & Artificial membrane: Dynamics

1Pos109 表層糖鎖が関与する細菌の細胞外膜小胞形成
Involvement of the surface carbohydrates in bacterial membrane vesicle formation
**Jun Kawamoto**[1], Taiku Tsudzuki[1], Tomoya Imai[2], Takuya Ogawa[1], Tatsuo Kurihara[1] ([1]*Institute for Chemical Research, Kyoto University*, [2]*Research Institution for Sustainable Humanosphere*)

1Pos110 Giant Plasma Membrane Vesicle の膜粘度測定
Viscosity of Giant Plasma Membrane Vesicls
**Tatsuya Itoi** (*Dept. of Physics, Tohoku University*)

1Pos111 自動化技術による膜粘度の顕微鏡画像データ解析の精度向上
Improving accuracy of microscopic image data analysis for membrane viscosity measurement using automation technique
**Kenya Haga**, Yuka Sakuma, Masayuki Imai (*Grad. Sch. Sci., Tohoku Univ.*)

1Pos112 パターン化人工膜と光ピンセットによる人工生体膜分子の時空間操作
Spatiotemporal Manipulation of Membrane Molecules in Artificial Membranes Using Membrane Patterning and Optical Tweezers
**Yasushi Tanimoto**[1], Shunya Moriyama[1], Kyoko Masui[1], Fumio Hayashi[2], Kenichi Morigaki[3,4], Chie Hosokawa[1] ([1]*Grad. Sch. Sci., Osaka Metropolitan Univ.*, [2]*Grad. Sch. Sci., Kobe Univ.*, [3]*Biosignal Res. Center, Kobe Univ.*, [4]*Grad. Sch. Agri., Kobe Univ.*)

## 16C. 生体膜・人工膜：興奮・チャネル／16C. Biological & Artificial membrane: Excitation & Channels

1Pos113 電位依存性プロトンチャネル活性化の N 末端制御
N-terminal control of voltage-gated proton channels
Ryuya Nawata, **Akira Kawanabe**, Yuichiro Fujiwara (*Grad. Sch. Biomed. Health Sci., Hiroshima Univ.*)

1Pos114 高速原子間力顕微鏡による非競合阻害剤結合状態の AMPA 受容体ナノダイナミクスの解明
High-speed atomic force microscopy reveals nano-dynamics of AMPARs with the non-competitive inhibitors
**Keisuke Sato**[1], Yimeng Zhao[2], Motoyuki Hattori[2], Mikihiro Shibata[3,4] ([1]*Grad. Sch. NanoLS., Kanazawa Univ.*, [2]*Sch. Life Sci., Fudan Univ.*, [3]*WPI-NanoLSI, Kanazawa Univ.*, [4]*InFiniti, Kanazawa Univ.*)

1Pos115 油中水滴接触膜を用いた膜張力定量下でのアクアポリンの水透過性測定
Measuring aquaporin water permeability using pressure-determined droplet interface bilayers with defined membrane tension
Misuzu Ueki, Takahisa Maki, **Masayuki Iwamoto** (*Dep. Mol. Neurosci., Facul. Med. Sci., Univ. Fukui*)

## 16D. 生体膜・人工膜：輸送・情報伝達／16D. Biological & Artificial membrane: Transport & Signal transduction

1Pos116 Ion translocation mechanism of $Na^+$-pumping NADH-quinone oxidoreductase from molecular dynamics simulations

**Takehito Seki**[1,2], Moe Ishikawa-Fukuda[3,4], Jun-ichi Kishikawa[5], Masatoshi Murai[3], Takahiro Masuya[3], Hideto Miyoshi[3], Danielle McFee[4], Blanca Barquera[4], Kei-ichi Okazaki[1,2] ([1]*SOKENDAI*, [2]*Institute for Molecular Science*, [3]*Graduate School of Agriculture, Kyoto University*, [4]*Department of Biological Science, Rensselaer Polytechnic Institute*, [5]*Department of Applied Biology, Kyoto Institution of Technology*)

1Pos117 糖脂質 MPIase が関与する膜タンパク質輸送機構の物理化学的解析
Exploring the Role of a Glycolipid MPIase in Membrane Protein Transport through Physicochemical Studies

**Shoko Mori**[1], Kaoru Nomura[1], Kohki Fujikawa[1], Tsukiho Osawa[1], Ken-ichi Nishiyama[2], Keiko Shimamoto[1,3] ([1]*Bioorg. Res. Inst., Suntory Fdn. Life Sci.*, [2]*Fac. Agric., Iwate Univ.*, [3]*Grad. Sch. Sci., Osaka Univ.*)

## 17. 化学受容／17. Chemoreception

1Pos118 コレラ菌アミノ酸走性受容体の広範かつ特異的な検知プロファイル
The versatile and specific sensing profiles of *Vibrio cholerae* amino-acid chemoreceptors

**So-ichiro Nishiyama**[1], June Minaki[1], Taisei Kumakura[1], Yuta Nogami[1], Fuga Omori[2,3], Katsumi Imada[4], Ikuro Kawagishi[2,3] ([1]*Fac. App. Life Sci., Niigata Univ. Pharm. Med. Life Sci.*, [2]*Grad. Sch. Sci. and Engin., Hosei Univ.*, [3]*Res. Cen. Micro-Nano Tech., Hosei Univ.*, [4]*Dep. MacroMol. Grad. Sch. Sci., Osaka Univ.*)

## 18. 神経・感覚（細胞・膜タンパク質・分子）／18. Neuroscience & Sensory systems

1Pos119 Abnormal differentiation of olfactory sensory neurons in ATF5 upstream open reading frame mutant mice

**Haruo Nakano**, Sanetoki Koide, Shuya Yoshida, Mariko Umemura, Shigeru Takahashi, Yuji Takahashi, Yasuhiro Shinkai (*Environ. Biol., Life Sci., Tokyo Univ. Pharm. Life Sci.*)

1Pos120 飢餓状態における線虫 *C. elegans* の低温耐性獲得機構と人工進化解析による新規因子の探索
Mechanism of acquisition of cold tolerance in C. elegans during starvation and search for novel factors by artificial evolution analysis

**Seiya Kamino**[1], Miina Fuzisawa[1], Atsushi Doi[2], Hideki Doi[2], Akane Ohta[1], Atsushi Kuhara[1,3] ([1]*Institute for Integrative Neurobiology , Konan University*, [2]*Kinki University ・School of Agriculture Medical Institute of Bioregulation*, [3]*PRIME, AMED*)

1Pos121 *C. elegans* の低温耐性に関わる転写伸長因子 TCEB の機能細胞の絞り込み
Narrowing down the functional cells of TCEB, a transcription elongation factor involved in cold tolerance in *C. elegans*

**Sho Yabuuchi**[1,2], Hiroaki Teranishi[1,2], Toshihiro Iseki[1,2], Natsune Takagaki[1,2], Yohei Minakuchi[3], Atsushi Toyoda[3], Akane Ohta[1,2], Atsushi Kuhara[1,2,4] ([1]*Dept.Biol. Grad. Sch. Sci. Konan Univ*, [2]*Inst. of Integral NeuroBiol. Konan Univ*, [3]*National Institute of Genetics, Japan*, [4]*PRIME AMED*)

## 19. 神経回路・脳の情報処理／19. Neuronal circuit & Information processing

1Pos122 カエル神経筋接合部シナプスにおけるカゼインキナーゼ阻害剤の効果: 単発刺激放出の抑制と連続刺激での放出増大短期可塑性の強化
Investigation of effect of a casein kinase 2 inhibitor at the frog NMJ: EPP was reduced and short-term plasticity was intensified
**Naoya Suzuki** (*Grad.Sch.Sci., Nagoya Univ.*)

1Pos123 Thermosensory signal processing by multiple thermoreceptors within a single thermosensary neuron in C. elegans
**Nanako Kanamura[1,2]**, Akane Ohta[1,2], Yuki Sato[1,2], Akira Kawanabe[3], Yuichiro Fujiwara[3,4], Atsushi Kuhara[1,2,5] ([1]*Graduate School of Natural Science, Konan University, Kobe, Japan*, [2]*Institute for Integrative Neurobiology, Konan University, Kobe, Japan*, [3]*Faculty of Medicine, Kagawa University, Kagawa*, [4]*Graduate School of Biomedical and Health Sciences (Medical), Hiroshima University, Hiroshima, Japan*, [5]*PRIME, AMED*)

## 21A. 光生物：視覚・光受容／21A. Photobiology: Vision & Photoreception

1Pos124 クロライドイオンを対イオンとしてもつサンゴオプシンの分光研究
Spectroscopic studies of a coral opsin with chloride ion as a counterion
**Yuri Tominaga[1]**, Shino Inukai[1], Yusuke Sakai[2], Mitsumasa Koyanagi[2], Akihisa Terakita[2], Hideki Kandori[1,3], Kota Katayama[1,3] ([1]*Grad. Sch. Eng., Nagoya Inst. Tech.*, [2]*Grad. Sch. Sci., Osaka Met. Univ.*, [3]*OptoBio Technology Center, Nagoya Inst. Tech.*)

1Pos125 アプソモナドが持つ新奇紫外・青色光受容アニオンチャネルロドプシン ApuRs の分光学的特性
Spectroscopic characterization of ApuRs, novel UV- and blue-absorbing anion channel rhodopsins from Apusomonads
**Takashi Nagata[1]**, Luis Javier Galindo[2], Shunki Takaramoto[1], Andrey Rozenberg[3], Hiroto Takahashi[1], Oded Béjà[3], Keiichi Inoue[1] ([1]*Inst. Solid State Phys., Univ. Tokyo*, [2]*Inst. Water Res., Univ. Granada, Spain*, [3]*Faculty Biol., Technion – Israel Inst. Tech., Haifa, Israel*)

1Pos126 固体 NMR によるヘリオロドプシンのアミノ酸残基特異的なダイナミクスとプロトン化状態の解析
Residue-Specific Characterization of Heliorhodopsin Dynamics and Protonation States by solid-state NMR
**Yuki Samatsu[1]**, Sari Kumagai[1], Kota Katayama[2], Hideki Kandori[2], Izuru Kawamura[1] ([1]*Grad. Sch. Eng. Sci., Yokohama Natl. Univ.*, [2]*Grad. Sch. Eng., Nagoya Inst. Tech.*)

1Pos127 Time-resolved crystallography reveals structural transitions of a bifunctional cryptochrome bearing a light-harvesting antenna chromophore
**Junpei Yamamoto[1]**, Wei-Ting Lin[2], Meng-Iao Fong[2], Kai-Chun Yang[2], Hikaru Saito[1], Yuhei Hosokawa[2], Manuel Maestre-Reyna[2] ([1]*Grad. Sch.Eng.Sci., Univ. Osaka*, [2]*Dep. Chem., National Taiwan Univ.*)

1Pos128 短波長シフトした光駆動内向きプロトンポンプロドプシンの波長制御機構の研究
Study on the color-tuning mechanism of a blue-shifted light-driven inward proton-pumping rhodopsin
**Yoshitaka Kato[1]**, Borja Aldeguer-Riquelme[2], Oded Béjà[3,4], Josefa Antón[2], Keiichi Inoue[1] ([1]*ISSP, Univ. Tokyo*, [2]*Department of Physiology, Genetics and Microbiology, University of Alicante*, [3]*Faculty of Biology, Technion—Israel Institute of Technology*, [4]*The Nancy and Stephen Grand Technion Energy Program, Technion—Israel Institute of Technology*)

1Pos129 無脊椎動物由来繊毛型オプシンの G タンパク質共役特異性の解析
G protein-coupling specificity of ciliary opsins in invertebrates
**Kazuki Ohmichi**[1], Tomoki Kawaguchi[1], Keita Sato[2], Hideyo Ohuchi[2], Hisao Tsukamoto[1] ([1]*Grad. Sch. Sci. Kobe Univ.*, [2]*Okayama Univ.*)

1Pos130 自動化プラットフォームを用いたロドプシン吸収波長変異体の効率的作製
Automated System for High-Throughput Production of Spectral-Tuning Rhodopsin Variants
**Masae Konno**, Takashi Nagata, Keiichi Inoue (*ISSP, Univ. Tokyo*)

1Pos131 Expression analysis of heliorhodopsin genes in actinomycetes
**Rei Abe-Yoshizumi**[1], Hideki Kandori[1,2] ([1]*Grad. Sch. Eng., Nagoya Inst. Tech.*, [2]*OptoBio., Nagoya Inst. Tech.*)

1Pos132 *Stretomyces alkaliphilus* 由来ヘリオロドプシンは，固相培養で発現する
Heliorhodopsin from *Stretomyces alkaliphilus* is expressed in solid phase culture
**Koyo Yamada**[1], Rei Abe-Yoshizumi[1], Tatsuro Nishikino[1,2], Hideki Kandori[1,2] ([1]*Grad. Sch. of Eng., Nagoya Inst. of Tech.*, [2]*OptoBio Tech. Res. Cent., Nagoya Inst. of Tech.*)

1Pos133 中温性細菌 *Modestobacter muralis* 由来のロドプシンの発現と光反応
Expression and photoreaction of rhodopsin from the mesothermal bacterium *Modestobacter muralis*
**Haruna Matsumura**[1], Shota Takahashi[1], Takafumi Shimoaka[1], Fumio Hayashi[2], Takashi Kikukawa[3], Masashi Sonoyama[1,4,5] ([1]*Grad. Sch. Sci. Tech., Gunma Univ.*, [2]*Ctr. Inst. Analysis, Gunma Univ.*, [3]*Fac. Adv. Life. Sci., Hokkaido Univ.*, [4]*GIAR, Gunma Univ.*, [5]*GUCFW, Gunma Univ.*)

## 21B. 光生物：光合成／21B. Photobiology: Photosynthesis

1Pos134 最先端の蛍光顕微分光法による細胞内の多様な光合成超複合体を観る
Capturing *in vivo* dynamic photosynthetic supercomplexes using state-of-the-art fluorescence excitation-emission microscopy
**Xianjun Zhang**[1,2], Ryutaro Tokutsu[3], Jun Minagawa[4], Shen Ye[1], Yutaka Shibata[1] ([1]*Tohoku University*, [2]*Massachusetts Institute of Technology*, [3]*School of Veterinary Science, Kitasato University*, [4]*National Institute for Basic Biology*)

1Pos135 光化学系 II 結晶を用いた $Mn_4CaO_5$ クラスターの構築機構の時間分解赤外分光解析
Time-resolved infrared study of the photoassembly process of the $Mn_4CaO_5$ cluster using photosystem II crystals
**Yuki Kato**[1], Kazuki Ogura[1], Yoshiki Nakajima[2], Jian-Ren Shen[2], Takumi Noguchi[1] ([1]*Grad. Sch. Sci., Nagoya Univ.*, [2]*Res. Inst. Interdiscip. Sci., Okayama Univ.*)

1Pos136 Spectral Shifts in Chromophore Absorption Wavelengths Caused by Three Linkers in the Phycobilisome Rod of *Synechocystis* PCC 6803
**Hiroto Kikuchi** (*Dept. Phys., Sch. Med., Nippon Med. Sch.*)

1Pos137 紅色光合成細菌 *Phaeospirillum molischianum* の LH2 タンパク質の再構築：カロテノイドと界面活性剤の影響
Reconstruction of LH2 protein from a purple photosynthetic bacterium *Phaeospirillum molischianum*: effects of carotenoids and detergents
**Taiga Miura**, Yoshitaka Saga (*Grad. Sch. Sci. Eng, Kindai Univ.*)

1Pos138 光合成酸素発生系における翻訳後アミノ酸修飾によるシステインスルホン酸配位子の形成
Formation of a cysteine sulfonate ligand via post-translational modification in the photosynthetic oxygen-evolving complex
**Kazuha Nakamura**[1], Takehiro Suzuki[2], Hatsune Mizue[1], Tomomi Kitajima-Ihara[1], Minako Hirano[1], Yuki Kato[1], Naoshi Dohmae[2], Takumi Noguchi[1] ([1]*Grad. Sch. Sci., Nagoya Univ.*, [2]*RIKEN, CSRS.*)

1Pos139 遠赤色利用可能な光化学系 II の光捕集機能におけるカロテノイドの役割
Light-harvesitng functions of carotenoids in the far-red light utilizing photosystemII from *Acaryochloris marina*
Vasco Joris[1], Naoki Suenaga[2], Miki Bando-Uotani[1,3], Kyoko Shinzawa-Ito[4], Natsuko Inoue-Kashino[4], Yasuhiro Kashino[4], Keisuke Kawakami[5], Koji Yonekura[5], **Daisuke Kosumi[6]** ([1]*Grad. Sch. Sci. and Tech., Kumamoto Univ.*, [2]*Facul. Sci., Kumamoto Univ.*, [3]*Dev. Tech., Kumamoto Univ.*, [4]*Grad. Sch. Sci, Hyogo Univ.*, [5]*RIKEN, SPring-8*, [6]*IINa, Kumamoto Univ.*)

1Pos140 光化学系 I 超複合体の高分解能 AFM 観察
High-resolution AFM imaging of photosystem I supercomplex in thylakoid membrane
Azusa Owada[1], **Daisuke Yamamoto[2]** ([1]*WDB Co., LTD.*, [2]*Fac. Sci., Fukuoka Univ.*)

1Pos141 光合成酸素発生系における脂肪族アミノ酸の非天然カルボキシラート配位子への翻訳後変換
Post-translational conversion of aliphatic amino acids to non-natural carboxylate ligands in the photosynthetic oxygen-evolving complex
**Hatsune Mizue[1]**, Takehiro Suzuki[2], Takumi Matsubara[1], Tomomi Kitajima-Ihara[1], Minako Hirano[1], Yuichiro Shimada[1], Yuki Kato[1], Naoshi Dohmae[2], Takumi Noguchi[1] ([1]*Department of Physics, Graduate School of Science, Nagoya University*, [2]*Biomolecular Characterization Unit, RIKEN Center for Sustainable Resource Science*)

## 21C. 光生物：光遺伝学・光制御／21C. Photobiology: Optogenetics & Optical control

1Pos142 カリウムチャネルロドプシン B1ChR2 の K+選択性メカニズムの解明と応用に向けて
Towards a mechanistic understanding and application of K+ selectivity of potassium channelrhodopsin B1ChR2
**Ryotaro Shimamura[1]**, Shoko Hososhima[1,2], Hideki Kandori[1,2], Satoshi Tsunoda[1,2] ([1]*Grad. School of Engineering., Nagoya Institute of Technology*, [2]*Opto Bio Technology Research Center*)

1Pos143 PYP を用いた光可逆的タンパク質性液液相分離形成の解析
Analysis of photo-reversible proteinaceous liquid-liquid phase separation formation using PYP
**Yoichi Yamazaki[1]**, Ranmaru Shirahama[1], Kento Yonezawa[1,2], Hironari Kamikubo[1,2] ([1]*NAIST MS*, [2]*NAIST CDG*)

1Pos144 Disordering of cell membrane lipids induced by THz irradiation
**Hiromichi Hoshina** (*RIKEN RAP*)

1Pos145 $H^+$輸送活性の低いナトリウムポンプロドプシンにおけるプロトン化レチナール塩基周辺の水素結合ネットワーク
Hydrogen-Bonding Network Around the Protonated Retinal Schiff Base in a Sodium-Pumping Rhodopsin with Low $H^+$ Transport Activity
**Hiroto Takizuka[1]**, Yuma Ito[1], Akiko Ito[1], Hideki Kandori[1,2], Yuji Furutani[1,2] ([1]*Graduate School of Engineering, Nagoya Institute of Technology*, [2]*Optobiotechnology Research Center, Nagoya Institute of Technology*)

1Pos146 チャネルロドプシン GtCCR3 の波長制御とチャネル開閉機構
Color tuning and channel gating mechanism of cation-channelrhodopsin GtCCR3
**Jinichiro Tabe[1]**, Shoko Hososhima[1,2], Hideki Kandori[1,2], Satoshi Tsunoda[1,2] ([1]*Graduate School of Engineering, Nagoya Institute of Technology*, [2]*Opto Bio Technology Research Center*)

## 23. 生命の起源・進化／23. Origin of life & Evolution

1Pos147 Unveiling Calcium's Role in the Emergence of Molecular Chirality
**Chen Chen**[1], Ruiqin Yi[2], Tony Z. Jia[3] ([1]*Biofunctional Catalyst Research Team, RIKEN Center for Sustainable Resource Science (CSRS)*, [2]*Guangzhou Institute of Geochemistry, Chinese Academy of Sciences*, [3]*Earth-Life Science Institute, Institute of Future Science, Institute of Science Tokyo*)

1Pos148 緑藻類の光応答に及ぼす細胞数と細胞分化の影響
Effects of cell number and cell differentiation on the photo-response of green algae
**Daito Seito**, Yoshihiro Murayama (*Tokyo University of Agriculture and Technology, Faculty of engineering, Department of Biomedical Engineering*)

1Pos149 最小ゲノム細菌の実験室適応進化
Adaptive laboratory evolution of minimal genome bacterium
**Masaki Mizutani**[1], Minoru Moriyama[2], Ryuichi Koga[2], Takema Fukatsu[2,3,4], Shigeyuki Kakizawa[2] ([1]*Faculty of Science, Gakushuin University*, [2]*Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)*, [3]*Graduate School of Science, University of Tokyo*, [4]*Graduate School of Life and Environmental Sciences, University of Tsukuba*)

1Pos150 短いランダムな RNA 集団に創発する遺伝の解析
Exploring emergent heritability in short random RNA pools
**Jiro Kakizaki**[1], Alika Andjani Widada[1], Norikazu Ichihashi[2], Ryo Mizuuchi[1] ([1]*Fac. Sci. Eng., Waseda Univ.*, [2]*Grad. Sch. Arts and Sci. Univ. Tokyo*)

## 24. 合成生物学・人工細胞／24. Synthetic biology & Artificial cells

1Pos151 膜結合アクトミオシンネットワークによる人工細胞の形態変化
Morphological modification of artificial cell encapsulating membrane-bound actomyosin system
**Yusei Sato**[1,2], Rieko Sumiyoshi[2], Masahiko Yamagishi[2], Takeshi Haraguchi[3], Kyohei Matsuda[2], Suguru Sato[3], Kohji Ito[3], Junichiro Yajima[2] ([1]*X-star, JAMSTEC*, [2]*Dep. of Life Sci., Grad. Sch. of Arts and Sci., The Univ. of Tokyo*, [3]*Dep. of Biology, Grad. Sch. of Sci., Chiba Uni.*)

1Pos152 DNA で操る合成細胞のアクチン骨格：DNA とタンパク質の橋渡しによる機能拡張
DNA-Regulatable Actin Cytoskeleton in Synthetic Cells: Bridging DNA and Proteins toward Enhanced Functionality
**Daichi Nakajima**[1], Keita Abe[1], Satoshi Murata[1], Shinichiro M. Nomura[1], Hideaki Matsubayashi[2] ([1]*Department of Robotics, Graduate School of Engineering, Tohoku University*, [2]*Frontier Research Institute for Interdisciplinary Sciences, Tohoku University*)

1Pos153 人工分子の化学修飾による微小管のプログラム可能な配列制御
Programmable Microtubule Arrangement *via* Synthetic Molecular Modification
**Kenta Tamaki**[1], Hiroto Morita[1], Ryota Iino[2], Takayuki Uchihashi[1] ([1]*Grad. Sch. of Sci., Nagoya Univ.*, [2]*IMS, NINS*)

1Pos154 翻訳因子の持続的な再生産による *in vitro* 自己増殖系の構築
Sustainable regeneration of translation factors toward *in vitro* self-regeneration
**Kentaro Shoji**[1], Katsumi Hagino[1], Norikazu Ichihashi[1,2,3] ([1]*Department of Life Science, Graduate School of Arts and Science, The University of Tokyo*, [2]*Komaba Institute for Sciences, University of Tokyo*, [3]*Universal Biology Institute, University of Tokyo*)

1Pos155 A Hybrid *In Silico*/In-Cell Controller for Robust Optimization of Microbial Bioprocesses
**Katsuyuki Kunida**[1,2], Tomoki Ohkubo[2], Yuichi Sakumura[2] ([1]*Department of Computational Biology, School of Medicine, Fujita Health University*, [2]*Data-Driven Biology, Division of Biological Science, Nara Institute of Science and Technology*)

1Pos156 生体制御モジュールを用いたリボソームの人工制御
Artificial regulation of ribosomes using the trans-acting engineered regulatory module
**Maho Fujino**, Yoshikazu Tanaka, Takeshi Yokoyama (*Grad. Sch. Life Sci., Tohoku Univ.*)

1Pos157 マイクロ流路内での水/水相分離が創り出す細胞サイズ液滴の規則配列
Spontaneous generation of linearly-arranged uniform microdroplets through phase separation in microfluidic channel
**Mayu Shono**[1], Ken Hirano[2], Akihisa Shioi[3], Kenichi Yoshikawa[4] ([1]*Komaba Institute for Science, Graduate School of Arts and Sciences*, [2]*Health and Medical Research Institute, National Institute of Industrial Science and Technology (AIST)*, [3]*Department of Chemical Engineering and Materials Science, Doshisha University*, [4]*Faculty of Life and Medical Sciences, Doshisha University*)

1Pos158 多細胞様液滴による翻訳と共役した RNA ゲノム複製の空間的分離
Multicell-like communicating droplets enabling spatial control of translation-coupled genomic RNA replication
**Hidekazu Sono**[1], Keiji Murayama[2], Kensuke Ueda[3], Norikazu Ichihashi[3,4,5], Ryo Mizuuchi[1,6] ([1]*Dept. Elect. Eng. & Biosci., Fac. Sci. & Eng., Waseda Univ.*, [2]*Dept. Biomol. Eng., Grad. Sch. Eng., Nagoya Univ.*, [3]*Komaba Inst. for Sci., Univ. Tokyo*, [4]*Dept. Life Sci., Grad. Sch. Arts & Sci., Univ. Tokyo*, [5]*Universal Biol. Inst., Univ. Tokyo*, [6]*FOREST, JST*)

1Pos159 Organization of multicellular-like liposome structures with specific shapes
**Shun Okada**, Kan Shoji (*Nagaoka Univwersity of Technology*)

## 26A. 計算生物学: 生命情報学／26A. Computational biology: Bioinformatics

1Pos160 構造揺らぎを想定した変異体タンパク質のアンサンブルドッキングによる相互作用解析
Interaction analysis by ensemble docking of mutant proteins assuming structural fluctuations
**Nobuyuki Uchikoga**[1], Yuri Matsuzaki[2] ([1]*Dept. Network Design, Sch. Interdisip. Math. Sci., Meiji Univ.*, [2]*Acad. Leadership, Sci. Tokyo*)

1Pos161 Towards automation in HS-AFM data analysis and interpretation
**Romain Amyot**, Holger Flechsig (*NanoLSI, Kanazawa University*)

1Pos162 乳がん組織における TP53 ホットスポット変異と発現変動の関連機構
Association between TP53 hotspot mutations and expression alterations in breast cancer tissues
**Takaharu Naito**, Takanori Sasaki (*Fac. Adv. Math. Sci., Meiji Univ.*)

1Pos163 RNA-seq を用いた相関分析による転移性乳がんの miRNA 予後予測因子の選出
Selection of miRNA Prognostic Factors for Metastatic Breast Cancer by Correlation Analysis Using RNA-seq
**Sota Kageyama**, Takanori Sasaki (*1. Fac. Adv. Math. Sci., Meiji Univ.*)

1Pos164 内分泌療法による乳がんの予後に関与する効果修飾遺伝子と PPI network 領域の予測
Prediction of effect modifiers and PPI network regions involved in endocrine therapy-induced breast cancer prognosis
**Shoya Oba**, Takanori Sasaki (*1. Fac. Adv. Math. Sci., Meiji Univ.*)

1Pos165 大規模なデータセットで学習した事前学習モデルを利用したタンパク質・リガンド結合親和性の予測
Predicting protein-ligand binding affinity using pre-trained models on large-scale dataset
**Sei Inoue**, Tohru Terada (*Dept. of Biotechnol., Grad. Sch. of Agri. and Life Sci., Univ. of Tokyo*)

1Pos166 蛋白質リガンド相互作用の pIC50 の機械学習予測
pIC50 Prediction Using Protein–Ligand Interactions
**Shuji Endo**, Masanori Yamanaka (*Grad. Sch. Sci. & Tech., Nihon Univ*)

1Pos167 深層学習モデル gr Predictor を用いたタンパク質 2 量体界面の水和分布予測
Predicting the Hydration Structures at the Protein-Protein Interfaces of Dimers using a Deep-Learning Model “gr Predictor
Yuki Ito, **Takashi Yoshidome** (*Dep. of Appl. Phys., Tohoku Univ.*)

1Pos168 Analysis of water dynamics around antifreeze proteins by molecular dynamics simulations
**Nao Abe**[1], Simon Hikiri[2], Takuya Takahashi[2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*Coll. Life Sci., Ritsumeikan Univ.*)

1Pos169 QM/MM Study of the Reaction Mechanism of a SAM-Dependent 3-Amino-3-Carboxypropyl Transferase in Nocardicin Biosynthesis
**Masayuki Karasawa**[1], Takayoshi Awakawa[2], Takahiro Mori[3,4,5], Ikuro Abe[3,4], Tohru Terada[1,4] ([1]*Dept. of Biotechnol., Grad. Sch. of Agri. and Life Sci., Univ. of Tokyo*, [2]*RIKEN Cent. Sustain. Res. Sci. (CSRS)*, [3]*Grad. Sch. of Pharm. Sci., Univ. of Tokyo*, [4]*Collab. Res. Inst. Innov. Microbiol. (CRIIM)*, [5]*JST PRESTO*)

1Pos170 Elucidating the Binding Pathway of Abltide to Abl Kinase through Enhanced 2D Replica Exchange Molecular Dynamics Simulations
**Yichao Wu**, Ai Shinobu (*Premium Research Institute for Human Metaverse Medicine (WPI-PRIMe), The University of Osaka*)

1Pos171 Free energy analysis of drug inclusion in polymeric micelles using molecular dynamics simulation
**Mai Ukawa**[1], Simon Hikiri[2], Takuya Takahashi[2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*Coll. Life Sci., Ritsumeikan Univ.*)

1Pos172 BEMM-GEN: A Toolkit for Generating a Biomolecular Environment-Mimicking Model for Molecular Dynamics Simulation
Takunori Yasuda, Rikuri Morita, Yasuteru Shigeta, **Ryuhei Harada** (*CCS, Univ. of Tsukuba*)

1Pos173 Effects of Phosphorylation in the Naturally-Denatured Region of TGIF-1 on Functional Regulation
**Madoka Nakatani**[1], Simon Hikiri[2], Junichi Higo[3], Takuya Takahashi[2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*Coll. Life Sci., Ritsumeikan Univ.*, [3]*Grad. Sch. Info. Sci., Univ. Hyogo*)

1Pos174 Binding Free Energy Analysis of PD-L1 and Macrocyclic Peptide Inhibitors
**Hyunji Kim**[1], Simon Hikiri[2], Takuya Takahashi[2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*Coll. Life Sci., Ritsumeikan Univ.*)

1Pos175 Elucidation of the binding mechanism between botulinum toxin and antibodies through binding free energy analysis
**Yuka Maeda**[1], Simon Hikiri[2], Takuya Takahashi[2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*Coll. Life Sci., Ritsumeikan Univ.*)

1Pos176 アクチンの分子揺らぎに内在する複数の機能運動
Multiple functional motions of actin are embedded in its intrinsic molecular fluctuation
**Ryotaro Koike**[1], Kei Moritsugu[2], Motonori Ota[1] ([1]*Grad. Sch. Info., Nagoya Univ.*, [2]*Grad. Sch. Sci., Osaka Metro. Univ.*)

1Pos177 MD シミュレーションを用いた膜の伝熱性解析
Analysis of the Thermal Insulation Properties of Lipid Bilayers Using Molecular Dynamics (MD) Simulations
**Ayaka Kiyota**[1], Yuichi Togashi[1,2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*RIKEN*)

1Pos178 Molecular Simulation Study on the Conformational Dynamics and Activation Pathway of Melanopsin
**Ruisi Zou**[1], Kohe Obayashi[2], Hisao Tsukamoto[2], Toshifumi Mori[1,3] ([1]*Grad. Sch. Integr. Sci. & Eng., Univ.kyushu*, [2]*Grad. Sch. Sci., Kobe Univ.*, [3]*Inst. Mater. Chem. & Eng., Kyushu Univ.*)

1Pos179 Investigating Protein Condensation and Ion Contributions with Explicit Solvent Coarse-Grained Models

**Yangyang Zhang**[1], Cheng Tan[1], Yuji Sugita[1,2] ([1]*RIKEN R-CCS, Kobe, Japan*, [2]*RIKEN PRI, Wako, Japan*)

1Pos180 Neuropsin (KLK8)の触媒活性に対する金属添加効果の計算化学的検討

Effect of metal ion addition on the catalytic activity of Neuropsin (KLK8): a computational study

**Masami Lintuluoto**[1], Mari Fujimoto[1], Humika Nakamura[1], Souma Kai[1], Yoshifumi Fukunishi[2], Hideki Tamura[3], Jua Mikael Lintuluoro[4] ([1]*Graduate School of Life and Environmental Sciences, Kyoto Prefectural University,*, [2]*Cellular and Molecular Biotechnology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST)*, [3]*Laboratory of Biofunctional Science, Hoshi University School of Pharmacy and Pharmaceutical Sciences*, [4]*Graduate School of engineering, Kyoto University,*)

1Pos181 分子動力学シミュレーションを用いた多剤排出輸送体 MdfA の基質特異性と排出機構の解析

Analysis of substrate specificity and efflux mechanism of the multidrug transporter MdfA using MD simulations

**Hodaka Tanabe**, Tohru Terada (*Dept. of Biotechnol., Grad. Sch. of Agri. and Life Sci., Univ of Tokyo*)

1Pos182 阻害剤の柔軟性がレセプタータンパク質への結合に与える影響の拡張アンサンブルによる検証

Verification of the effect of ligand and receptor flexibility on inhibitory activity by generalized-ensemble algorithms

**Suzuka Saitou**[1], Simon Hikiri[2], Junichi Higo[3], Takuya Takahashi[2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*Coll. Life Sci., Ritsumeikan Univ.*, [3]*Grad. Sch. Info Sci., Hyogo Univ.*)

1Pos183 計算化学を用いた 2-オキソグルタル酸依存性ジオキシゲナーゼによるオロバンコール環拡大反応の触媒機構の解明

Computational study on the catalytic mechanism of 2-oxoglutarate-dependent dioxygenase in the ring expansion of orobanchol

**Hanting Jiang**[1], Takatoshi Wakabayashi[2], Hajime Sato[1], Yoshitaka Moriwaki[1,4], Masato Homma[3], Yukihiro Sugimoto[3], Tohru Terada[1] ([1]*Dept. of Biotechnol., Grad. Sch. of Agri. and Life Sci., Univ. of Tokyo*, [2]*Dept. of Appl. Biol. Chem., Grad. Sch. of Agri. and Life Sci., Univ. of Tokyo*, [3]*Dept. of Biochem., Grad. Sch. of Agri. and Life Sci., Kove Univ.*, [4]*Med. Res. Inst., Inst. of Integr. Res., Science Tokyo.*)

1Pos184 薬剤設計のための AQP7 チャネルへの阻害剤侵入に関するインシリコ解析

*In silico* analysis of inhibitor intrusion into the AQP7 channel for efficient drug design

**Koryo Obata**[1], Yasuteru Shigeta[2], Ryuhei Harada[2] ([1]*Grad. Sch. degree programs in life and earth sciences, University of Tsukuba*, [2]*Center for Computational sciences, University of Tsukuba*)

1Pos185 分子動力学を用いた 超音波誘導性の piezo 1 立体構造変化解析

Analysis of ultrasound-induced structure changes in piezo1 using Molecular Dynamics

**Yoshio Nakano**, Kazuki Arita, Satoka Kasai, Kazumi Yoshizawa, Tsugumi Yamauchi, Daisuke Yamada, Akiyoshi Saitoh, Satoru Miyazaki (*Fac. Pharm. Tokyo Univ. Sci.*)

1Pos186 分子動力学計算による脂質スクランブラーゼ Atg9 の開閉運動における脂質及び水分子の挙動解析

Lipid and Water Dynamics during the Functional Cycle of the Lipid Scramblase Atg9: A Molecular Dynamics Study

**Ayaka Shimbo**, Takaharu Mori (*Grad. Sci., Tokyo Univ. of Sci.*)

1Pos187 拡散モデルによる全原子シミュレーションからの粗視化力場の学習

Learning coarse-grained force fields from all-atom simulations via diffusion models

**Ryounosuke Kouriki**, Tsuyoshi Terakawa (*Dept. Biophys., Grad. Sch. Sci., Kyoto Univ.*)

1Pos188 AlphaFold と MD シミュレーションによるコラーゲン三重らせん構造の解析

Structural Analysis of Collagen Triple Helices Using AlphaFold and Molecular Dynamics Simulations

**Rikuto Noguchi**[1], Taiyo Eguchi[1], Aimi Yamashita[1], Kohsuke Adachi[2], Masato Kinoshita[3], Yuuta Moriyama[1], Toshiyuki Mitsui[1] ([1]*Grad. Sch. Sci. and Eng., Aoyamagakuin Univ.*, [2]*Fac. Agr. and Mar. Sci., Kochi Univ.*, [3]*Grad. Sch. Agr., Kyoto Univ.*)

## 26C. 計算生物学：生体モデリングとシミュレーション／26C. Computational biology: Biological modeling and simulation

1Pos189 細胞の剥離を含む頂点モデルにおける破壊パターンの解析
Analysis of fracture patterns in a vertex model including detachment of cells
**Nozomi Fujita**[1], Yuichi Togashi[1,2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*BDR, RIKEN*)

1Pos190 粗視化格子モデルによるタンパク質の進化とアロステリック制御
Coarse-Grained Lattice Modeling of Protein Evolution and Allostery
**Jin Kousaka**[1,2], Radek Erban[3], Yuichi Togashi[1] ([1]*Graduate School of Life Sciences, Ritsumeikan University*, [2]*Kobe Inst., Riken*, [3]*Mathematical Institute University of Oxford*)

1Pos191 Boosting weak signals with incorrect ligands in the sensory system
**Yan-Ru Chen** (*Department of Physics, National Central University*)

## 27. 数理生物学・理論生物学／27. Mathematical & Theoretical biology

1Pos192 グリオブラストーマ細胞の移動メカニズムを解明するための数理モデリングと解析
Mathematical modeling and analysis to elucidate the migration mechanism of glioblastoma cells
**Hauna Tagawa**[1], Daisuke Kanematsu[2], Asako Katsuma[2], Yonehiro Kanemura[2], Yuichi Sakumura[1] ([1]*Graduate School of Science and Technology, Nara Institute of Science and Technology*, [2]*National Hospital Organization Osaka National Hospital*)

1Pos193 Modeling hysteresis in protrusion mechanics during neuronal polarization
**Akane Uchida**, Naoyuki Inagaki, Yuichi Sakumura (*Graduate School of Science and Technology, Nara Institute of Science and Technology*)

1Pos194 シグナル伝達系における時間符号化の進化
Evolution of temporal encoding in signaling network
**Thoma Itoh**[1,2], Yohei Kondo[3], Kazuhiro Aoki[4], Nen Saito[2] ([1]*Dept. Basic Biol., Grad. Sch. Life Sci., SOKENDAI*, [2]*Grad. Sch. Integrated Sciences for Life, Univ. Hiroshima*, [3]*Grad. Sch. Med., Univ. Nagoya*, [4]*Grad. Sch. Biostudies., Univ. Kyoto*)

1Pos195 Mathematical Modeling and Simulation of Epithelial Wound Closure Dominated by Fingering Instability
**Hikaru Emoto**, Nen Saito (*Graduate School of Integrated Sciences for Life, Hiroshima University*)

1Pos196 Mechanical balance of adhesions mediates chiral collective rotation induced by cell chirality
**Ryohei Nishizawa**[1,2], Tomoki Ishibashi[1], Goshi Ogita[1], Tatsuo Shibata[1,2] ([1]*BDR, Riken*, [2]*Grad Sch. of FBS., Osaka Univ.*)

## 28. 生態／環境／28. Ecology & Environment

1Pos197 Multiphase chemistry of bio-related molecules in microdroplets studied aerosol optical tweezers
**Yuan-Pin Chang** (*Dept. of Chem., National Sun Yat-sen Univ., Taiwan*)

## 29. 非平衡・生体リズム／29. Nonequilibrium state & Biological rhythm

1Pos198 非平衡ナノ逆ミセルのテラヘルツ振動凝縮
Terahertz vibrational condensation in out-of-equilibrium nanoscale reverse micelles
**Hiroshi Murakami** (*QST*)

1Pos199 ナノ内視鏡 AFM 法を用いた上皮間葉転換による細胞内核膜硬さ変化測定
Nanoendoscopy-AFM based nanomechanical measurements reveal changes in nuclear elasticity during epithelial-mesenchymal transition
**Takehiko Ichikawa**, Yohei Kono, Makiko Kudo, Takeshi Shimi, Takeshi Fukuma (*NanoLSI, Kanazawa Univ.*)

1Pos200 ナノスケール構造・化学変化ダイナミクス分析のための高速 AFM・顕微ラマン複合装置
High-speed AFM/micro-Raman multimodal system for studying nanoscale conformational and chemical dynamics
**Keishi Yang**[1], Feng-Yueh Zhan[2], Verma Prabhat[1], Takayuki Uchihashi[2,3], Takayuki Umakoshi[1,4] ([1]*Grad. Sch. Eng., Univ. Osaka*, [2]*Grad. Sch. Sci., Univ. Nagoya*, [3]*ExCELLS*, [4]*Inst. Adv. Co-creation Studies, Univ. Osaka*)

1Pos201 機械学習画像解析を活用した 3 次元バクテリアバイオフィルムの In vivo マイクロレオロジー計測
In vivo microrheological measurement for 3D bacterial biofilm with machine learning image analysis
**Takuya Ohmura**[1], Dominic J. Skinner[2], Konstantin Neuhaus[3,4], Gary P.T. Choi[5], Jörn Dunkel[6], Knut Drescher[3] ([1]*RIES, Hokkaido Univ.*, [2]*Cent. Comput. Biol., Flatiron Instit.*, [3]*Biozentrum, Univ. of Basel*, [4]*Dept. Phys., Univ. of Marburg*, [5]*Dept. Math., Chinese Univ. of Hong Kong*, [6]*Dept. Math., MIT*)

1Pos202 レーザーマニピュレーション法を用いた超微量ナノポア計測の開発
The development of the ultralow concentration detection using laser manipulation method and nanopore sensing
**Masaya Yokono** (*Nagaoka Univ. of Tech.*)

1Pos203 酸化物/a-Si:H 積層薄膜による光触媒の作製とフラバン分子を用いた水素生成量の検出システム
Fabrication of photocatalysts based on oxide/a-Si:H stacked thin films and detection system of hydrogen production using flavan molecules
**Yuki Sato**[1], Kohei Saito[1], Akiko Hinoguchi[1], Hiroshi Masumoto[2], Yutaka Tsujiuchi[1,2] ([1]*Mat. Sci., Akita UNIV.*, [2]*FRIS, Tohoku UNIV.*)

1Pos204 ゲル，紫外可視光変換物質，FLAVAN 分子，半導体，を用いた光照射ダイオード特性制御システム
Light irradiation diode characteristic control system using gels, UV-Visible light converting materials, FLAVAN molecules, semiconductors
**Yutaka Tsujiuchi**[1,2], Hiroshi Masumoto[2], Yuto Takayama[1], Kohei Saito[1], Akiko Hinoguchi[1] ([1]*Mat. Sci., Akita UNIV*, [2]*FRIS, Tohoku UNIV*)

1Pos205 分子混雑効果が誘起する HIV-1 グアニン四重鎖 RNA の構造不均一性の単一分子レベルの解析
Analysis of structural heterogeneity in HIV-1 G-quadruplex RNA induced by molecular crowding at the single-molecule level
**Miyuki Sakaguchi**[1], Atsuki Harada[1], Kunihiko Ishii[2,3], Tahei Tahara[2,3], Takuhiro Otosu[1], Shoichi Yamaguchi[1] ([1]*Grad. Sch. Sci. Eng., Saitama Univ.*, [2]*Molecular Spectroscopy Lab., RIKEN*, [3]*RIKEN Center for Advanced Photonics*)

1Pos206 Single power-law rheology of crowded cytoplasm in living cells
Hiroyuki Ebata, **Daisuke Mizuno** (*Department of Physics, Kyushu University*)

1Pos207 抗血清由来プローブを使った IRIS 多色超解像顕微鏡法による内在性の分子複合体の構成
The composition of endogenous molecular complexes by IRIS, multiplexed super-resolution imaging using antiserum-derived probes
**Tai Kiuchi**[1], Ryouhei Kobayashi[2], Shuichiro Ogawa[1], Louis Elverston[2], Dimitrios Vavylonis[3], Naoki Watanabe[2] ([1]*Grad. Sch. Med., Kyoto Univ.*, [2]*Grad. Sch. Bio., Kyoto Univ.*, [3]*Dept. Phys., Lehigh Univ.*)

1Pos208 Fluorescence lifetime imaging for quantification of subcellular GTP/GDP ratios in mammalian cells
**Loan Thi Ngoc Nguyen**[1], Cong Quang Vu[2], Satoshi Arai[1,2] ([1]*Div. NanoLSI, Univ. Kanazawa*, [2]*WPI-NanoLSI, Univ. Kanazawa*)

1Pos209 Development of Organelle Heating Technology to Study the Spatiotemporal Dynamics of HSP Expression
**Hettimudalige Dilini Nisansala**[1], B.M.K.D. Basnayake[1], Takeru Yamazaki[2], Kayoko Nomura[2], Satoshi Arai[1,2] ([1]*Grad. Sch. of Frontier Science Initiative, Division of Nano Life Science, Kanazawa University*, [2]*WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University*)

1Pos210 酵素のナノスケール運動観察を目指したラベルフリー高精度一分子イメージングシステムの開発
Label-free high-precision single-molecule imaging system for nanoscale enzyme motion
**Masato Sawa**[1], Yasushi Okada[1,2,3,4,5] ([1]*Grad. Sch. Sci., Univ. Tokyo*, [2]*Grad. Sch. Med., Univ. Tokyo*, [3]*Kobe Inst., Riken*, [4]*WPI-IRCN, Univ. Tokyo*, [5]*UBI, Univ. Tokyo*)

1Pos211 EMCCD の高精度ノイズモデルを用いた機械学習による細胞の高倍率生物発光イメージングのためのデノイジング
Denoising for high-magnification bioluminescence imaging of cells through machine learning with precise noise modeling of EMCCD
**Tetsuichi Wazawa**[1], Haiyang Jiang[2], Ryohei Ozaki-Noma[1], Yinqiang Zheng[2], Imari Sato[3], Takeharu Nagai[1] ([1]*SANKEN, Univ of Osaka*, [2]*AI Center, Univ of Tokyo*, [3]*Digital Content and Media Sciences Research, NII*)

1Pos212 高速 AFM を用いた PfDYN2 の膜構造認識に基づくマラリア原虫分裂機構の探究
Investigation of Plasmodium division mechanisms based on membrane recognition by PfDYN2 using high-speed AFM
**Hirona Osaka**[1], Hiroshi Yamada[2], Kohji Takei[2], Takayuki Uchihashi[1,3] ([1]*Grad. Phys. Sci., Univ. Nagoya*, [2]*Grad. Sch. Med., Dent. and Pharm. Sci., Okayama Univ.*, [3]*ExCELLS*)

1Pos213 ミオシン分子に結合したアクチン線維の超解像顕微像解析
Super-resolution images of actin filaments bound to myosin molecules using a microscope with a home-built illumination system
**Daichi Kobayashi**, Taiki Tsujimoto, Kuniyuki Hatori (*Graduate School of Science and Engineering, Yamagata University*)

1Pos214 一分子蛍光イメージングを用いた分子シャペロンによるアミロイド脱凝集過程のメカニズムの解明
Amyloid conformation-dependent disaggregation of chaperone revealed by single molecule fluorescent imaging
**Yoshiko Nakagawa**[1], Shingo Tamai[1], Takashi Nomura[1], Takahiro Nakayama[2], Motomasa Tanaka[1] ([1]*RIKEN, CBS*, [2]*WPI Nano Life Science Institute, Kanazawa University*)

1Pos215 温度ジャンプ高速原子間力顕微鏡の開発と性能評価
Development and characterization of a temperature jump high-speed atomic force microscopy
**Mai Tambo**, Ayumi Sumino (*Grad. Sch. of biostudies, Kyoto univ.*)

## 32. バイオエンジニアリング／32. Bioengineering

1Pos216 Load-induced remodeling of mechanosensing proteins in suspended cell sheets
**Madoka Suzuki**[1], Keiko Kawauchi[2], Hiroaki Machiyama[3], Hiroaki Hirata[4], Shin'ichi Ishiwata[5], Hideaki Fujita[6] ([1]*Inst. Protein Res., Univ. Osaka*, [2]*Fac. Front. Innov. Res. Sci. Technol., Konan Univ.*, [3]*Dept. Immunol., Tokyo Med. Univ.*, [4]*Dept. Life Sci. Biotechnol., Kanazawa Inst. Technol.*, [5]*Fac. Sci. Eng., Waseda Univ.*, [6]*Res. Inst. Radiation Biol. Med., Hiroshima Univ.*)

1Pos217 金ナノ粒子を用いる酸化還元蛋白質の電子移動制御と電気バイオものづくり
Efficacy of uncapped gold nanoparticles for electron transfer to redox proteins and its application for bioproduction
**Yasuhiro Mie**[1], Chitose Mikami[1], Kentaro Akiyama[2], Yoshiaki Yasutake[1] ([1]*Biomanufacturing Production Res. Ctr., AIST*, [2]*Molecular Biosystems Res. Inst., AIST*)

1Pos218 ARTIFICIAL CONTROL OF A HIGHLY ACTIVATED PLASTIC DEGRADING ENZYME BY PHOTOCHROMIC NANODEVICES
**Ateke Yanick Besong**, Shota Nishida, Shinsaku Maruta (*Grad.Sch.Sci.Eng., Soka.Univ*)

## 34. Miscellaneous topics その他／34. Miscellaneous topics

1Pos219 異常拡散系の初期通過問題における系の総数依存性とその役割
The role of population for first passage time problem with anomalous diffusion
**Yuta Sakamoto**, Takahiro Sakaue (*Aoyama Gakuin University*)

1Pos220 2 点 MSD 解析の基礎と応用
Two-Point MSD Analysis for Eliminating External Motion
**Naoya Katayama**, Takahiro Sakaue (*Dept. of Phys. Aoyama Gakuin Univ.*)

2 日目（9 月 25 日（木））／Day 2（Sep. 25 Thu.） 14:00 〜 16:00

## 01A. タンパク質：構造／01A. Protein: Structure

2Pos001 マウスノロウイルスカプシドと細胞レセプター sCD300lf の結合様式の解明
Elucidation of the binding mechanism between murine norovirus capsid and sCD300lf receptor
**Kentaro Hiraka**[1,2], Reiko Todaka[3], Kei Haga[3], Kazuhiko Katayama[3], Kazuyoshi Murata[1,2] ([1]*ExCELLS, NINS*, [2]*NIPS, NINS*, [3]*Grad. Sch. Infection Control Sci., Kitasato Univ.,*)

2Pos002 細菌の細胞分裂に関与するタンパク質 FtsZ の構造遷移機構の解析
Structural transition mechanism of Bacterial cell division protein FtsZ
**Kodai Yamamoto**[1], Taichi Takasawa[1], Takumi Oshiro[1], Yoshio Kodera[1,2], Go Watanabe[3], Takashi Matsui[1,2] ([1]*Grad. Sch. Sci., Kitasato Univ.*, [2]*Center for Disease Proteomics, Sch. Sci., Kitasato Univ.*, [3]*Sch. of Front. Eng., Kitasato Univ.*)

2Pos003 溶液 NMR による自然免疫シグナルタンパク質 MyD88 の多量化および相互作用解析
NMR analysis of the interactions of the MyD88 TIR domain in innate immune signaling
**Shiho Nukui**, Yudai Ito, Kazuki Kasai, Hidehito Tochio (*Dept. of Biol. Sci., Grad. Sch. of Sci., Kyoto Univ.*)

2Pos004 ATR-FTIR 分光法によるアデノシン A2a 受容体のリガンド誘起構造変化解析
Ligand-induced conformational changes in the adenosine A2a receptor probed by ATR-FTIR spectroscopy
**Shuma Tajima**[1], Kento Watanabe[1], Shota Nakamura[2], Mika Hirose[2], Akitoshi Inoue[3], Takayuki Kato[2], Ryoji Suno[3], Hideki Kandori[1,4], Kota Katayama[1,4] ([1]*Nagoya Institute of Technology Graduate School of Engineering*, [2]*Institute for Protein Research, Osaka University*, [3]*Kansai Medical University*, [4]*Nagoya Institute of Technology OptoBioTechnology Research Center*)

2Pos005 性繊毛 H-Pilus の構造が明らかにした TrhA pilin の環状化
Structural basis of the conjugation H-pilus reveals the cyclic nature of the TrhA pilin
**Naito Ishimoto**[1,2,3], Joshua Wong[2], Shan Heb[2], Sally Shirranc[4], Olivia Paramio[2], Chloe Seddon[2,3], Nanki Singha[2,3], Carlos Balsalobred[5], Ravi Sonanie[6], Abigail Clements[3], Edward Egelman[6], Gad Frankel[2], Konstantinos Beis[2,3] ([1]*Grad. Sch. Life Sci., Yokohama City Univ.*, [2]*Department of Life Sciences, Imperial College London*, [3]*Rutherford Appleton Laboratory, Research Complex at Harwell*, [4]*Biomedical Sciences Research Complex Mass Spectrometry & Proteomics Facility, University of St Andrews*, [5]*Department de Genètica, Universitat de Barcelona*, [6]*Department of Biochemistry and Molecular Genetics, University of Virginia*)

2Pos006 Structural insights into calcium selectivity of channelrhodopsin CapChR2
**Jie Ma**[1], Masahiro Fukuda[2], Seiwa Nakamura[3], Seiya Tajima[1], Koichiro Kishi[3], Suhyang Kim[2], Hideaki Kato[1,2,3] ([1]*Graduate School of Science, The University of Tokyo*, [2]*Research Center for Advanced Science and Technology, The University of Tokyo*, [3]*Graduate School of Arts and Sciences, The University of Tokyo*)

2Pos007 非準等価ウイルスカプシドにおけるサブユニット形状の幾何学的制約
Geometric Constraints on Subunit Shapes in Non-Quasi-Equivalence Viral Capsids
**Sakura Homma**[1], Seri Nishimoto[2], Tomoya Tendo[3], Kanata Warisaya[2], Hiroki Minami[2], Issei Tanaka[2], Ryuya Toyooka[3], Takashi Horiyama[4], Tomohiro Tachi[3], Yasuhiro Matsunaga[1,5] ([1]*Grad. Sch. Sci. & Eng., Saitama Univ.*, [2]*Grad. Sch. Eng., Univ. Tokyo*, [3]*Grad. Sch. Arts & Sci., Univ. Tokyo*, [4]*Grad. Sch. Fac. Inf. Sci. & Tech., Hokkaido Univ.*, [5]*RIKEN*)

2Pos008 Universal scaling laws linking Dynamics and Folding revealed by AlphaFold Database
**Zecheng Zhang**[1], Qianyuan Tang[1], Weitong Ren[2], Jun Wang[3] ([1]*Hong Kong Baptist University, HKSAR, China*, [2]*Wenzhou Institute, Univ. Chin. Acad. Sci, China*, [3]*Nanjing University, China*)

2Pos009 クライオ電子顕微鏡を用いた V-ATPase の構造機能解析
Structural and Functional Analysis of V-ATPase Using Cryo-Electron Microscopy
**Fuka Ueda**[1], Yui Nishida[1], Atsuki Nakano[1], Atsuko Nakanishi[2], Kaoru Mitsuoka[3], Ken Yokoyama[1] ([1]*Grad.Sch. Life Sci., Kyoto Sangyo Univ.*, [2]*IPR, Osaka Univ.*, [3]*Research Center for Ultra-High Voltage Electron Microscopy, Osaka Univ.*)

2Pos010 酵母プリオンタンパク質の構造・細胞表現系相関解析
Structural and Phenotypic Correlation Analysis of Yeast Prion Proteins
**Takashi Nomura**[1], David Boyer[2], Yusuke Komi[1], Atsushi Yamagata[3], Mikako Shirouzu[3], Carlos Bustamante[4], David Eisenberg[2], Motomasa Tanaka[1,5] ([1]*Wako Inst., Riken*, [2]*Dept. Bio. Chem., UCLA*, [3]*Yokohama Inst., Riken*, [4]*QB3, UC Berkeley*, [5]*Dept. Life Sci. & Tech., TMDU*)

2Pos011 放線菌由来新規プレニル基転移酵素の構造-機能相関の解明
Structure-function relationship of novel prenyltransferase from *Streptomyces* sp. KS84
**Takumi Oshiro**[1], Shuta Uehara[1], Yoshikazu Tanaka[2], Takuya Ito[3], Yoshio Kodera[1,4], Takashi Matsui[1,4] ([1]*Grad. Sch. Sci., Kitasato Univ.*, [2]*Grad. Sch. Life Sci., Tohoku Univ.*, [3]*Fac. of Pharm., Osaka Ohtani Univ.*, [4]*Center for Disease Proteomics, Sch. Sci., Kitasato Univ.*)

2Pos012 Protein Language Models Capture Evolutionary Trends via Embedding Variation
**Yuxiang Zheng**, Zecheng Zhang, Qian-Yuan Tang (*Hong Kong Baptist Univ*)

## 01B. タンパク質：物性（安定性，折れたたみなど）／01B. Protein: Physical property

2Pos013 時間分解真空紫外円二色性による SDS ミセル結合過程における β-ラクトグロブリンの構造ダイナミクス観測
Observing structural dynamics of β-Lactoglobulin Binding to SDS Micelle by Time-Resolved Vacuum-Ultraviolet Circular Dichroism
**Satoshi Hashimoto**[1], Koichi Matsuo[1,2] ([1]*Grad. Sch. Adv. Sci. Eng., Hirosima Univ.*, [2]*HiSOR*)

2Pos014 ペプチド結合の折り目効果の強化による黄色蛍光タンパク質 Venus の収量増加の試み
Attempts to increase the yield of the yellow fluorescent protein Venus by enhancing the ORIME effect of a peptide bond
**Erika Gunji**[1], Manami Suwa[1], Masaru Hoshino[2], Nobuhiro Suzuki[3], Kaori Chiba[1] ([1]*Indust. Eng. Natl. Inst. Tech, Ibaraki Coll. Japan*, [2]*Kyoto Univ. Pharm.*, [3]*NARO*)

2Pos015 トリプシン様蛋白質分解酵素のプロ領域による立体構造形成の解明
Propeptide-Mediated Folding of a Trypsin-Like Protease
**Kairi Ogawa**[1], Nana Sakata[1], Orika Ashida[1], Mitsuhiro Miyazawa[2], Shigeru Shimamoto[1], Yuji Hidaka[1] ([1]*Grad. Sch. Sci. Eng., Univ. Kindai*, [2]*PrevenTec Inc.*)

2Pos016 変性状態下における BDPA の non-local 相互作用とフォールディング機構の再検討
Revisiting the Folding Mechanism of BDPA through non-local interactions in the Denatured State
**Seiichiro Hayashi**[1], Saeko Yanaka[1,2,3], Maho Yagi[1,2,4], Yukiko Isono[1,2], Koichi Kato[1,2,4], Kunihiro Kuwajima[5] ([1]*Institute for Molecular Science, National Institutes of Natural Sciences*, [2]*Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences*, [3]*Materials and Structures Laboratory at Institute of Integrated Research, Institute of Science Tokyo*, [4]*Graduate School of Pharmaceutical Sciences, Nagoya City University*, [5]*Department of Physics, School of Science, University of Tokyo*)

2Pos017 構造に基づく単純な統計力学モデルを用いた骨形成タンパク質 2 のフォールディング反応過程の予測
Prediction of the folding process of bone morphogenetic protein 2 using a simple structure-based statistical mechanical model
**Yusaku Hirata**[1], Koji Ooka[2], Munehito Arai[1,2,3] ([1]*Department of Physics, The University of Tokyo*, [2]*College Arts and Sciences, The University of Tokyo*, [3]*Department of Life Sciences, The University of Tokyo*)

2Pos018 RNA によるタウ凝集の速度論的解析
Kinetics of RNA-induced Tau Aggregation
**Hiyori Araki**, Hide Miyaguchi, Hideyuki Komatsu (*Department of Bioscience and Bioinformatics, Faculty of Systems Engineering and Computer Science,, Kyushu Institute of Technology*)

2Pos019 がん抑制タンパク質 p53 のアセンブリ形態制御法の確立
Control of the assembly morphology of the tumor suppressor protein p53
**Emi Hibino**[1], Reiji Hijikata[1], Haruna Yoshida[1], Hidekazu Hiroaki[1,2,3] ([1]*Grad. Sch. Pharm. Sci., Nagoya Univ.*, [2]*BeCellBar*, [3]*COMIT*)

## 01C. タンパク質：機能（反応機構，生物活性など）／01C. Protein: Function

2Pos020 Molecular Shape Evolution of the Clock Protein KaiC
**Shuji Akiyama**[1,2], Yoshihiko Furuike[1,2] ([1]*NINS, IMS*, [2]*SOKENDAI*)

2Pos021 オワンクラゲ由来蛍光タンパク質における二量体形成の比較
Comparison of Dimerization Behavior of Fluorescent Proteins from the Jellyfish *Aequorea Victoria*
**Yuna Kinoshita**, Haruko Hosoi (*Grad. Sch. Sci., Toho Univ.*)

2Pos022 グライコプロテオミクスのための O-glycoprotease IMPa 活性部位付近の相互作用解析
Analysis around the Active Site of O-glycoprotease IMPa for Glycoproteomics
**Hiromitsu Shimoyama**, Tomoaki Tamano, Issaku Yamada (*The Noguchi Institute*)

2Pos023 Functional and Structural Analyses on Clock Protein KaiC to Identify the Essential Step for the Temperature Compensation
**Kanta Kondo[1,2]**, Yoshihiko Furuike[1,2], Kota Horiuchi[1,2], Yasuhiro Onoue[2], Shuji Akiyama[1,2] ([1]*SOKENDAI*, [2]*IMS*)

2Pos024 シトクロム P450 還元酵素におけるフラビン補因子の還元によるアロステリック応答の分子動力学解析
Molecular dynamics analysis of the allosteric response to reduction of flavin cofactors in cytochrome P450 reductase
**Mikuru Iijima**, Mitsunori Takano (*Grad. Scl. of Adv. Sci. & Eng., Waseda Univ.*)

2Pos025 一本鎖抗体の活性に対する大腸菌外膜タンパク質 OmpF の効果
Effect of Escherichia coli outer membrane protein, OmpF, on the activity of single-chain variable fragments
**Keiko Okano**, Anna Ogi, Takao Izuka, Toshiyuki Okano (*Department of Electrical Engineering and Bioscience, School of Advanced Science and Engineering, Waseda University*)

2Pos026 時計タンパク質 KaiC における第三の周期調節部位
The third period-regulating site in the clock protein of KaiC
**Kota Horiuchi[1,2]**, Yoshihiko Furuike[1,2], Kumiko Ito-miwa[3], Shuji Akiyama[1,2] ([1]*Institute for Molecular Science*, [2]*SOKENDAI*, [3]*Nagoya University*)

2Pos027 Time-Resolved Study of Light Intensity-Dependent Clustering Dynamics of TePixD
**Chihiro Aramoto[1]**, Yusuke Masuda[1], Shunro Tokonami[2], Masahide Terazima[1], Yusuke Nakasone[1] ([1]*Grad. Sch. Sci., Kyoto University*, [2]*Grad. Sch. Sci., Gakushuin University*)

2Pos028 細菌膜内切断プロテアーゼ RseP の基質結合構造と光架橋解析から提案する基質ドッキング機構
Substrate docking mechanism of intramembrane protease RseP revealed by the substrate-bound cryoEM structure and photocrosslinking analysis
Yosuke Shimizu[1], Tatsuya Kobayashi[1], Kikuko Asahi[2], Terukazu Nogi[2], Yoshinori Akiyama[1], **Yohei Hizukuri[1]** ([1]*Inst. Life Med. Sci., Kyoto Univ.*, [2]*Grad. Sch. Med. Life Sci., Yokohama City Univ.*)

## 01D. タンパク質：計測・解析の方法論／01D. Protein: Measurement & Analysis

2Pos029 ナノ秒蛍光相関分光法を用いたタンパク質と RNA の高速ダイナミクスの観測
Ultrafast dynamics of protein and RNA investigated by nanosecond fluorescence correlation spectroscopy
**Yuji Itoh[1,2]**, Yutaka Sano[1,2], Ibuki Soshino[1,2], Shrutarshi Mitra[1,2], Divya Rajendran[3], Athi N. Naganathan[3], Satoshi Takahashi[1,2] ([1]*Grad. Sch. Sci., Tohoku Univ.*, [2]*IMRAM*, [3]*IIT Madras*)

2Pos030 酸化 LDL の高感度検出を目指したバイオセンサーの合成研究
Synthetic study of biosensors for measurement of oxidized LDL
**Takahisa Hiruma**, Ryota Kumakura, Seiji Takeda (*Pharm. Sci., Hokkaido Univ. of Sci.*)

2Pos031 酵素反応を用いたタンパク質の部位特異的蛍光色素ラベル化法の開発
Development of site-specific fluorophore labeling to target protein by using enzymatic reactions
**Ai Hanano[1,2]**, Saori Kanbayashi[1], Cassidy Schmitt[1], Hiroyuki Oikawa[3], Tateki Suzuki[4], Takao Hashiguchi[4], Yuji Itoh[1,2], Satoshi Takahashi[1,2] ([1]*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University*, [2]*Graduate School of Life Sciences, Tohoku University.*, [3]*Molcure Inc*, [4]*Institute for Life and Medical Sciences, Kyoto University*)

2Pos032 分子動力学計算とニューラルネットワークの連携による生体分子小角散乱プロファイルの解析
Interpretation of small-angle scattering profiles of biomolecules by molecular dynamics simulation and neural networks
**Masahiro Shimizu** (*KURNS, Kyto Univ.*)

2Pos033 AlphaFold3 を用いた AFM 画像から 3 次元立体構造の高速な再構築手法
Rapid Reconstruction of Atomic 3D Configurations from an AFM image by AlphaFold3
**Tsuyoshi Kawai**, Yasuhiro Matsunaga (*Grad. School. Sci. Eng., Univ. Saitama*)

## 01E. タンパク質：タンパク質工学／進化工学／01E. Protein: Engineering

2Pos034 The development of AMP-based antibiotics for drug-resistant Gram-negative bacteria
**Wei Chun Weng**, Kaori Sugihara (*Institute of Industrial Science, The University of Tokyo*)

2Pos035 Development of red-color fluorescence lifetime biosensors for quantification of ATP levels in living cells
**Tri Minh Phan[1]**, B.M.K.D Basnayake[1], Quang Vu Cong[2], Satoshi Arai[1,2] ([1]*Graduate School of Frontier Science Initiative, Division of Nano Life Science, Kanazawa University*, [2]*WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University*)

2Pos036 タンパク質工学を利用した人工セルロソームの構築とセルロース分解の効率化
Construction of an artificial cellulosome using protein engineering toward improvement of cellulose degradation
**Momoka Takazawa**, Koki Kamiya (*Grad. Sch. Sci. & Tech., Gunma Univ.*)

2Pos037 De novo design of sensor proteins: calcium-binding protein
**Rie Tatsumi**, Nobuyasu Koga (*IPR, Univ. Osaka*)

2Pos038 遺伝子にコードされた蛍光バイオセンサーのためのモジュール型設計戦略：VEGF 検出への応用
Modular design strategy for genetically-encoded fluorescent biosensors: Application to VEGF Detection
**Momoko Oya[1,2]**, Ryohei Ozaki-Noma[1], Tetsuichi Wazawa[1], Kazunori Sugiura[1], Mitsuru Hattori[1], Masataka Michigami[3], Daisuke Fujiwara[3], Ikuo Fujii[3], Takeharu Nagai[1] ([1]*SANKEN, The Univ. of Osaka*, [2]*Grad. Sch. Pharm. Sci., The Univ. of Osaka*, [3]*Grad. Sch. Sci., Osaka Metropolitan Univ.*)

## 01F. タンパク質：天然変性／01F. Protein: Intrinsic disorder

2Pos039 FUS タンパク質の天然変性領域と RNA の相互作用機構の解明
Unveiling the Interaction Mechanism between a FUS Intrinsically Disordered Region and RNA by Molecular Dynamics Simulation
**Yoshie Iijima**, Soichiro Kijima, PhuocDuy Tran, Akio Kitao (*Grad. Sch. Life Sci. and Tech., Science Tokyo*)

2Pos040 TIA1 の自己集合における核酸の寄与の解明
Investigating the contribution of nucleic acids to the self-assembly of TIA1
**Anupap Chauyjaroensuk[1]**, Naotaka Sekiyama[1], Aya Ogino[2], Hiroki Konno[3], Hidehito Tochio[1] ([1]*Grad. Sch. Sci., Kyoto Univ.*, [2]*Grad. Sch. of Nat. Sci. & Technol., Kanazawa Univ.*, [3]*WPI Nano Life Sci. Inst. (WPI-Nano LSI), Kanazawa Univ.*)

2Pos041 実験とシミュレーションによる Hero 蛋白質のヘリックス形成の研究
The α-Helix Formation of Hero Proteins Studied by Experiments and Simulations
**Takao Yoda[1]**, Ai Niitsu[2], Cheng Tan[3], Naoya Tochio[2], Haeri Im[3,4], Takanori Kigawa[2], Jaewoon Jung[3,4], Yuji Sugita[3,4] ([1]*Nagahama Institute of Bio-Science and Technology*, [2]*RIKEN IMS*, [3]*RIKEN R-CCS*, [4]*RIKEN PRI*)

2Pos042 超音波照射を用いた夾雑環境下における α-シヌクレインシードの高感度検出
Ultrasonic Cavitation Enhances Selective Detection of α-Synuclein Amyloid Fibrils from a Crowded Environment
**Tomoki Ota**, Kichitaro Nakajima, Keiichi Yamaguchi, Yuji Goto, Hirotsugu Ogi (*Grad. Sch. Eng., Osaka Univ.*)

## 02. ヘムタンパク質／02. Heme proteins

2Pos043 **脱窒タンパク質超分子複合体の可溶化条件の最適化**
Optimization of Solubilization Conditions for suparmolecular complex of denitrification proteins
**Sara Tanibayashi** (*Grad. Sch. Sci., Univ. Hyogo*)

2Pos044 **オリゴマー型アロステリック蛋白質の機能に於ける両親媒性溶質の影響 - 疎水性相互作用の役割**
Effect of Amphipathic Solutes on the Function of an Oligomeric Allosteric Protein - Role of Hydrophobic Interactions
**Antonio Tsuneshige[1,2]**, Takehiko Haga[2] ([1]*Frontier Bioscience, HOSEI UNIVERSITY*, [2]*Micro-Nano Tech. Ctr., HOSEI UNIVERSITY*)

## 03. 膜タンパク質／03. Membrane proteins

2Pos045 **オレキシン受容体 2 の C 末端 IDR と受容体コアドメインとの分子内相互作用に関する溶液 NMR 解析**
Solution NMR Analysis of the Intramolecular Interaction between the C-terminal IDR and the Receptor Core Domain of Orexin Receptor 2
**Riki Kato[1]**, Yuki Kanazaki[1], Ken-Ichi Akagi[2], Yohei Miyanoiri[2], Kayo Imamura[1], Hidehito Tochio[1] ([1]*Grad. Sch. Sci., Univ. Kyoto*, [2]*Inst. Protein Research, Univ. Osaka*)

2Pos046 **抗体を用いた膜結合型 CLIC1 を標的としたモノクローナル抗体の作製と機能解析**
Development of Monoclonal Antibodies Specifically Targeting Membrane-bound CLIC1 and Their Functional Characterization
**Kazuki Imai[1,2]**, Ayana Yamagishi[1,2], Masumi Iljima[3], Chikashi Nakamura[1,2] ([1]*Grad. Sch. Eng., Tokyo Univ. Agric. Technol.*, [2]*CMB, AIST*, [3]*Fac. Appl. BioSci., Tokyo Univ. of Agri.*)

2Pos047 **多剤排出トランスポーター EmrE の pH 依存的基質結合駆動力変換には Asp84 が関与する**
Asp84 Is Involved in the pH-Dependent Driving Force Conversion for Substrate Binding in the Multidrug Efflux Transporter EmrE
**Kazumi Shimono[1]**, Daisuke Takahashi[1], Shuichi Miyamoto[1], Seiji Miyauchi[2] ([1]*Fac. Pharm. Sci., Sojo Univ.*, [2]*Fac. Pharm. Sci., Toho Univ.*)

2Pos048 Allosteric Effects of Sodium Binding on the κ-Opioid Receptor Revealed by FTIR Spectroscopy
Ryo Nishikawa[1], Seiya Iwata[1], Shun Yokoi[2], Ryoji Suno[3], Chiyo Suno-Ikeda[3], Ayori Mitsutake[2], Takuya Kobayashi[3], Hideki Kandori[1,4], **Kota Katayama[1,4]** ([1]*Grad. Sch. Engi. Univ. Nagoya. Inst.*, [2]*Grad. Sch. Phys. Univ. Meiji*, [3]*Grad. Sch. Med. Univ. Kansai. Med.*, [4]*OptBioTech. Res. Cent. Univ. Nagoya. Inst.*)

## 04. DNA・DNA 結合タンパク質／04. DNA & DNA binding proteins

2Pos049 **分子動力学シミュレーションを用いた CRISPR Type I-C における DNA 切断前後のダイナミクスの違い**
Molecular dynamics simulation study of the differences in dynamics before and after DNA cleavage in CRISPR Type I-C
**Ryusei Haruna[1]**, Yoshihiro Kashiyama[1], Ryota Kiyooka[1], Shota Shimogoochi[1], Naoyuki Miyashita[1,2] ([1]*Grad. Sch. BOST, KINDAI Univ.*, [2]*BOST KINDAI Univ.*)

2Pos050 Advancing Biophysical Protein-DNA Interaction and Dynamics Studies Through Enhanced Sampling
**Mohamed Marzouk Sobaih**, Ai Shinobu (*Premium Research Institute for Human Metaverse Medicine (WPI-PRIMe), The University of Osaka*)

2Pos051 高速 AFM を用いた ATP 依存的な Smc5/6 の構造ダイナミクスの可視化
ATP dependent dynamics of Smc5/6 by high-speed atomic force microscopy
**Kenichi Umeda[1,2]**, Yumiko Kurokawa[3], Yasuto Murayama[3], Noriyuki Kodera[1] ([1]*Nano Life Science Institute, Kanazawa University*, [2]*PRESTO/JST*, [3]*Department of Chromosome Science, National Institute of Genetics*)

## 05. RNA・RNA 結合タンパク質／05. RNA & RNA binding proteins

2Pos052 NMR による α-シヌクレインと G4RNA の相互作用メカニズム解析
NMR study of the interaction between α-Synuclein and G4RNA
**Yiran Chen[1]**, Yasushi Yabuki[2], Norifumi Shioda[2], Hidehito Tochio[1] ([1]*Grad. Sch. Sci., Univ. Kyoto*, [2]*IMEG, Univ. Kumamoto*)

2Pos053 Valosin-containing protein behaved like an ATPase for FUS granules
**Hitomi Kimura[1,2]**, Shin-ichi Tate[1,2,3], Kyota Yasuda[1,2,3] ([1]*Department of Mathematical and Life Sciences, Graduate School of Integrated Sciences for Life, Hiroshima University*, [2]*International Institute for Sustainability with Knotted Chiral Meta Matter*, [3]*Research Center for the Mathematics on Chromatin Live Dynamics*)

## 06. DNA/RNA ナノテクノロジー／06. DNA/RNA nanotechnology

2Pos054 DNA 液滴の個数制御された分裂を実現する酵素カスケード反応
Enzymatic cascade reactions for number-controlled division of DNA droplets
**Tatsumi Sakuma[1]**, Tomoya Maruyama[2], Masahiro Takinoue[1,2,3] ([1]*Department of Life Science and Technology, Institute of Science Tokyo*, [2]*Research Center for Autonomous Systems Materialogy, Institute of Integrated Research, Institute of Science Tokyo*, [3]*Department of Computer Science, Institute of Science Tokyo*)

2Pos055 核酸増幅システムの特性検証
Characterization of Responsive Nucleic Acid Amplification systems
**Ken Komiya[1]**, Chizuru Noda[1], Takashi Nakakuki[2] ([1]*X-star, JAMSTEC*, [2]*Faculty of Comp. Sci. & Sys. Engi., Kyutech*)

2Pos056 酵素反応によって活性化された DNA 凝集体
Active DNA condensates coupled with enzymatic reactions
**Tomoya Maruyama[1]**, Masahiro Takinoue[1,2] ([1]*Research Center for Autonomous Systems Materialogy, Institute of Integrated Research, Institute of Science Tokyo*, [2]*Department of Computer Science, Institute of Science Tokyo*)

2Pos057 PEG-mediated regulation of DNA droplets: Stabilization with bulk PEG and transition to vesicle-like structures via DNA-PEG conjugates
**Naoki Yoshida[1]**, Mayu Shono[2], Kenichi Yoshikawa[3], Masahiro Takinoue[1,4,5] ([1]*Sch. Life Sci. & Tech., Science Tokyo*, [2]*Grad. Sch. Art. & Sci., Univ. Tokyo*, [3]*Self-organization Sci. Res. Ctr., Doshisha Univ.*, [4]*Sch. Comp., Science Tokyo*, [5]*ASMat, IIR, Science Tokyo*)

## 07. 核酸：その他／07. Nucleic acid: Others

2Pos058 サブテラヘルツ波照射が DNA 塩基対の形成に与える影響の溶液 NMR 研究
Investigation of sub-terahertz irradiation effects on DNA base pair formation by solution NMR
**Yuji Tokunaga[1]**, Koh Takeuchi[1], Hiromichi Hoshina[2], Masahiko Imashimizu[3] ([1]*Grad. Sch. Pharm. Sci., UTokyo*, [2]*RIKEN Center for Advanced Photonics*, [3]*CMB, AIST*)

2Pos059 ポリアミンによる遺伝子発現活性の温度依存性
Temperature dependence of gene expression activity in the presence of polyamines
**Shotaro Kato[1]**, Takashi Nishio[1,2], Yuko Yoshikawa[1], Koichiro Sadakane[1], Kenichi Yoshikawa[1] ([1]*Grad. Sch. Life and Med Sci., Doshisha Univ.*, [2]*MolBis, AIST*)

## 08. クロマチン・染色体／08. Chromatin & Chromosomes

2Pos060 Hi-C コンタクトマップのスペクトル分解解析
Spectral decomposition analysis of Hi-C contact maps
**Ai Ito**, Takahiro Sakaue (*Aoyama Gakuin University*)

2Pos061 クロマチンドメインの熱力学的サイズ制限について
Thermodynamic size limits in chromatin domains
**Fujishiro Shin** (*FIFC, Kyoto Univ.*)

2Pos062 複製依存的ヒストン標識（Repli-Histo 標識）を用いて明らかにする，ヒト生細胞内のユークロマチン・ヘテロクロマチンのふるまい
Replication-dependent histone (Repli-Histo) labeling dissects the physical properties of euchromatin/heterochromatin in living human cells
**Katsuhiko Minami[1,2]**, Kako Nakazato[1,2], Satoru Ide[1,2], Kazunari Kaizu[3,4], Koichi Higashi[2,5], Sachiko Tamura[1], Atsushi Toyoda[6], Koichi Takahashi[3], Ken Kurokawa[2,5], Kazuhiro Maeshima[1,2] ([1]*Genome Dynamics Laboratory, NIG*, [2]*SOKENDAI*, [3]*Laboratory for Biologically Inspired Computing, RIKEN BDR*, [4]*Cell Modeling and Simulation Group, ExCELLS*, [5]*Genome Evolution Laboratory, NIG*, [6]*Comparative Genomics Laboratory, NIG*)

## 10. 水・水和／電解質／10. Water & Hydration & Electrolyte

2Pos063 水中でのタンパク質分子間結合の高速計算に向けた GBSA 陰溶媒モデルの精査
Scrutiny of GBSA implicit solvent model for fast simulation of protein-protein binding in water
**Fangqian Wei**, Yukinari Kamiyama, Wataru Moriya, Mitsunori Takano (*Grad. Scl. of Adv. Sci. & Eng., Waseda Univ.*)

2Pos064 長距離静電相互作用のカットオフ計算で生じる水の層状構造：格子スピン模型による検証
The electrostatic problem of water revisited: Strange layer structure emerging from the truncated long-range interactions
**Yoshiteru Yonetani** (*National Institutes for Quantum Science and Technology (QST)*)

2Pos065 機械学習による過冷却水のローカル構造と水素結合エネルギーの解析
Machine-Learning Analysis of Local Structural Motifs and Hydrogen-Bond Energetics in Supercooled Water
**Taku Mizukami[1]**, Nguyen Viet Cuong[3], Dam Hieu Chi[2] ([1]*Japan Advanced Institute of Science and Technology, Materials Science*, [2]*Japan Advanced Institute of Science and Technology, Knowledge Science*, [3]*HPC Systems*)

## 11. 分子遺伝・遺伝情報制御／11. Molecular genetics & Gene expression

2Pos066 *Atoh1* 依存的な遺伝子ネットワーク構築に向けたドライ解析
*In silico* prediction of *Atoh1*-dependent gene networks using target genes of *lin-32, a homolog of Atoh1,* in *Caenorhabditis elegans*
**Saki Imamura**[1], Sayaka Hori[2] ([1]*Graduate School of Humanities and Sciences, Nara Women's University*, [2]*Faculty Division of Natural Sciences, Nara Women's University*)

## 12. 発生・分化／12. Development & Differentiation

2Pos067 高速 AFM による Afamin–Wnt3a 相互作用と動態の解明
Unveiling Afamin–Wnt3a interactions and dynamics using high-speed AFM
**Hikaru Ichida**[1], Kosuke Mizuno[1,3], Amyot Romain[2], Flechsig Holger[2], Satoshi Toda[3], Noriyuki Kodera[2] ([1]*Grad. Sch. NanoLS., Kanazawa Univ*, [2]*WPI-NanoLSI, Kanazawa Univ.*, [3]*Institute for Protein Research, Osaka Univ.*)

2Pos068 神経分化における細胞内の発熱が関与する転写機構の解明
Elucidation of the Transcriptional Mechanisms Involving Intracellular Heat Generation in Neural Differentiation
**Yukiho Shimazaki**[1,2], Kohki Okabe[3], Yoshie Harada[4,5] ([1]*Grad. Sch. Sci., Univ. Osaka*, [2]*IPR, Univ. Osaka*, [3]*Grad. Sch. Pharm. Sci., Univ. Tokyo*, [4]*WPI-PRIMe, Univ. Osaka*, [5]*QIQB, Univ. Osaka*)

2Pos069 赤血球可視化ゼブラフィッシュを用いた血液循環における物理量評価
Quantitative Analysis of Hemodynamic Parameters in Blood Circulation Using Red Blood Cell-Visualized Zebrafish
**Yusei Inoue**, Mana Okada, Toshiyuki Mitsui, Yuuta Moriyama (*Grad. Sch. Sci. and Eng., Aoyamagakuin Univ*)

## 13. 筋肉（筋蛋白質・収縮）／13. Muscle

2Pos070 重合阻害物質を用いた短いアクチンフィラメントの構造解析
Structural analysis of short actin filaments using polymerization inhibitors
**Yuta Arimura**, Takuo Yasunaga (*Grad. Sch. Comp. Sci. & Eng., Kyutech*)

## 14. 分子モーター／14. Molecular motor

2Pos071 アミロライド誘導体フェナミルがビブリオ菌べん毛モーター固定子のナトリウムイオン輸送を阻害する分子機構
Inhibition mechanism of phenamil, an amiloride derivative of sodium channel inhibitor, for the rotation of the *Vibrio* flagellar stator
**Tatsuro Nishikino**[1,2], Norihiro Takekawa[3], Jun-ichi Kishikawa[4], Mika Hirose[5], Seiji Kojima[6], Michio Homma[7], Takayuki Kato[5], Katsumi Imada[3] ([1]*Dep. of Life Sci. and Applied Chem., Nagoya Inst. of Tech.*, [2]*OptoBioTech. Res. Cent., Nagoya Inst. of Tech.*, [3]*Dept. of Macromol. Sci., Grad. Sch. of Sci., Osaka Univ.*, [4]*Dep. of Applied Bio., Kyoto Inst. of Tech.*, [5]*Inst. for Protein Res., Univ. of Osaka*, [6]*Dep. of Bio. Sci., Grad. Sch. of Sci., Nagoya Univ.*, [7]*Dep. of Biomole. Eng., Grad. Sch. of Eng., Nagoya Univ*)

2Pos072 Design and Development of a Novel Photoswitchable Inhibitor Targeting Mitotic Kinesin Eg5
**Nur Fatin Liyana Binti Salwadi**[1], Islam Md Alradzi[2], Shinsaku Maruta[2] ([1]*Grad. Sch. Sci. Eng., Soka Univ.*, [2]*Sch. Sci. Eng., Soka Univ.*)

2Pos073 Loop-tethered kinesin-14 reveals factors underlying motility and directionality
**Taisei Sano**, Rieko Sumiyoshi, Masahiko Yamagishi, Junichiro Yajima (*Grad. Arts & Sci., Univ. Tokyo*)

2Pos074 混雑環境下におけるキネシンの動態解析のためのマイクロレオロジー計測
Micro-rheology measurement for dynamic analysis of kinesin in crowded environments
**Gai Ohashi**[1], Takeshi Yokoyama[2], Takayuki Ariga[1] ([1]*Graduate School of Frontier Biosciences, Osaka University*, [2]*Graduate school of life science, Tohoku University*)

2Pos075 変異体解析による海洋性ビブリオ菌側べん毛固定子 MotA/MotB 複合体活性化の探求
Mutational analysis to explore activation of the *Vibrio alginolyticus* lateral flagellar stator, MotA/MotB complex
**Kazuki Yokoyama**[1], Michio Hommma[2], Norihiro Takekawa[3], Seiji Kojima[1] ([1]*Grad. Sch. Sci., Nagoya Univ*, [2]*Grad. Sch. Eng*, [3]*Grad. Sch. Sci*)

2Pos076 細菌べん毛モーターにおける固定子 MotB の N 末端へのタンパク質融合はローター-固定子相互作用を阻害する
Inhibition of rotor-stator interaction by protein fusion to the N-terminus of the stator protein MotB in the bacterial flagellar motor
**Yumiko Uchida**, Akihiko Ishijima, Hajime Fukuoka (*Grad. Sch. Front. Biosci., Univ. Osaka*)

2Pos077 バクテリアべん毛モーターの回転データにおける揺らぎ評価手法の開発
Development of a method for evaluating fluctuations in rotational data of bacterial flagellar motors
**Kenta Takemori**, Yusuke V. Morimoto (*Grad. Sch. Comput. Sci. and Syst. Eng., Kyushu Inst. Tech*)

2Pos078 微小管 C 末端 Tail の伸長と単量体 KIF1A の微小管結合の分子動力学解析
Molecular Dynamics Analysis on the Extension of C-terminal Tail of Tubulin and Monomeric KIF1A Binding to Microtubule
**Koki Adachi**, Mitsunori Takano (*Grad. Scl. of Adv. Sci. & Eng., Waseda Univ.*)

2Pos079 Unveiling the N-type ATPase: A Hidden Player in the Rotary ATPase Family
**Hiroshi Ueno**, Atsuki Nakano, Tatsuaki Matsui, Hiroyuki Noji (*Grad. Sch. Eng., Univ. Tokyo*)

2Pos080 ミオシンの 2D 投影像の深層学習による構造分類に関する研究
Deep Learning-Based Structural Classification of Myosin from 2D Projection Images
**Hikaru Iwasaki**, Hitomi Wada, Takuo Yasunaga (*Grad. School. Comp. Sci. Syst., KIT*)

## 15A. 細胞生物学的課題：接着／15A. Cell biology: Adhesion

2Pos081 蛍光顕微鏡と AFM を併用した細胞-基質接着間構造の解析
Analysis of cell–substrate adhesion structures by combined fluorescence microscopy and atomic force microscopy
**Shun Sato**, Shinji Deguchi (*Grad. Sch. Eng. Sci., The Univ. of Osaka*)

2Pos082 高速原子間力顕微鏡を用いた液中における Notch レセプターと Delta リガンドの構造解析
Structural analysis of Notch receptor and Delta ligand in solution using high-speed atomic force microscopy
**Shigetaka Nishiguchi** (*Kansai Center, National Institute of Advanced Industrial Science and Technology*)

## 15B. 細胞生物学的課題：運動／15B. Cell biology: Motility

2Pos083 微小管結合 RhoGEF である GEF-H1 の *in vitro* 動態解析
*In vitro* kinetic analysis of microtubule-binding RhoGEF, GEF-H1
**Tatsuki Kondo[1]**, Yukako Nishimura[1], Taketoshi Kambara[2], Kaori Kuribayashi-Shigetomi[3], Yasushi Okada[2,4,5], Fumio Motegi[1] ([1]*Inst. Gen. Med., Hokkaido Univ.*, [2]*RIKEN, BDR*, [3]*Inst. Adv. Grad. Edu., Hokkaido Univ.*, [4]*Grad. Sch. Sci., Tokyo Univ.*, [5]*Grad. Sch. Med., Tokyo Univ.*)

2Pos084 細菌べん毛モーターにおける固定子ユニットへの FliL 結合の定量化
Characterising the stoichiometry of FliL binding to stator units in bacterial flagellar motors
**Momoka Kumagai[1]**, Tomoya Shoji[1], Tsubasa Ishida[2], Naoki Hidaka[2], Yong-Suk Che[4], Yumiko Uchida[4], Hajime Fukuoka[4], Akihiko Ishijima[4], Yoshiyuki Sowa[1,2,3] ([1]*Grad. Frontier Biosci., Hosei Univ*, [2]*Res. Cent. Micro-nano Tech., Hosei Univ*, [3]*Dept. Frontier Biosci., Hosei Univ*, [4]*Grad. Frontier Biosci., Osaka Univ*)

2Pos085 単一微生物の活発な運動を追跡するための広視野顕微鏡法
Wide-field microscopy for tracking active locomotion of single microorganisms
**Kaname Kuroda**, Seiichiro Kinoshita, Masayoshi Nishiyama (*Grad. Sch. Sci. Eng., Kindai Univ.*)

2Pos086 多孔質培地中における周毛性細菌の運動性
Motility of peritrichous bacteria in porous media
**Naoki Kanda**, Shuichi Nakamura (*Grad. Sch. Eng., Tohoku Univ.*)

2Pos087 サルモネラにおける cAMP 濃度と運動能の相関の計測
Measurement of the correlation between cAMP levels and motility in *Salmonella* cells
**Keisuke Sakai**, Yusuke V. Morimoto (*Grad. Sch. Comp. Sci. and Syst. Eng., Kyushu Inst. Tech.*)

2Pos088 高圧力下にある哺乳類精子細胞の鞭毛運動の直接観察
Direct observation of flagellar motility in mammalian sperm cells at high pressure
Koji Matsuura[1], Yuka Asano[1], Masatoshi Morimatsu[2], Yuhkoh Satouh[3], Toshiki Yagi[4], Keiji Naruse[2], **Masayoshi Nishiyama[5]** ([1]*Okayama Univ. Sci.*, [2]*Grad. Sch. Med. Dent. Pharm. Sci., Okayama Univ.*, [3]*Gunma Univ.*, [4]*Pref. Univ. Hiroshima*, [5]*KINDAI Univ.*)

2Pos089 イオンチャネル領域に変異を持つキメラ固定子複合体 PomA/PotB の機能解析
Mutational analysis of the ion channel region of PomA/PotB, a chimeric stator of bacterial flagellar motor
**Kaito Nagano** (*Grad.Sch.Sci.,Osaka Univ.*)

## 15C. 細胞生物学的課題：細胞骨格・膜骨格／15C. Cell biology: Cytoskeleton & Membrane skeleton

2Pos090 *Spiroplasma* 由来の MreB を発現した Syn3B 破砕液を内包したリポソームの形態変化
Deformation of Liposomes by Encapsulation of Syn3B expressing *Spiroplasma* MreB
**Ikuko Fujiwara[1]**, Takahiro Mitani[1], Taiki Nishimura[1], Hana Kiyama[2], Ali Ahsan[2], Mone Mimura[2], Satoshi Kanamori[2], Hideaki Matsubayashi[3], Masahito Hayashi[4], Kingo Takiguchi[5], Makoto Miyata[2] ([1]*Materials Sci. & Bioeng., Nagaoka Univ. of Tech.*, [2]*Grad. Sch. Sci., OMU*, [3]*FRIS, Tohoku Univ.*, [4]*UBI, UTokyo*, [5]*Grad. Sch., Nagoya Univ.*)

2Pos091 Regulation of Epithelial Homeostasis by Stretch and Cell Density
**Rosario Ibanez[1]**, Honghan Li[2], Shinji Deguchi[1] ([1]*Osaka University, Graduate School of Engineering Sciences, Deguchi Laboratory*, [2]*University of Science and Technology Liaoning, School of Computer Science and Software Engineering*)

2Pos092 直接の力学摂動に対する微小管とアクチン骨格の構造応答
Structural response of microtubule and actin cytoskeletons to direct intracellular load
**Ryota Orii**, Hirokazu Tanimoto (*Yokohama City Univ.*)

2Pos093 機械的ストレス下における微小管束の粘弾性応答
Viscoelastic Behavior of Microtubule Bundles Under Mechanical Stress
**Syeda Rubaiya Nasrin**[1], Marie Tani[1], Gadiel Saper[2], Masatoshi Ichikawa[1], Ibuki Kawamata[1], Henry Hess[2], Akira Kakugo[1] ([1]*Grad. Sch. Sci., Kyoto Univ.*, [2]*Dept. Biomed. Engg. Columbia Univ.*)

2Pos094 Actin Network Morphogenesis: From Spots to Rings and Interconnected Bundles
**Vivek Semwal**, Biplab Bhattacherjee, Tatsuo Shibata (*RIKEN Center for Biosystems Dynamics Research Laboratory for Physical Biology*)

2Pos095 電子顕微鏡による細胞性粘菌の多細胞体における細胞間構造の可視化
Intercellular structures in the multicellular body of *Dictyostelium discoideum* visualized by electron microscopy
**Yuki Gomibuchi**, Yusuke V. Morimoto, Takuo Yasunaga (*Grad. Sch Comp. Sci and Sys. Eng., Kyushu Inst. Tech.*)

## 15D. 細胞生物学的課題：情報伝達・細胞膜／15D. Cell biology: Signal transduction & Cell membrane

2Pos096 膜リモデリングを介した TRPV4-GPCR のクロストーク
TRPV4–GPCR crosstalk mediated by membrane remodeling
**Masataka Yanagawa**[1,2], Kota Shimizume[1], Ryoji Kise[1], Asuka Inoue[1,3] ([1]*Grad. Sch. Pharm., Kyoto Univ.*, [2]*Riken, CPR*, [3]*Grad. Sch. Pharm., Tohoku Univ.*)

2Pos097 ATP 濃度は CBASS 応答の活性化と抑制を調節する
ATP levels modulate the activation and suppression of CBASS responses
**Yoshiaki Kinosita**, Rikiya Watanabe (*RIKEN, PRI*)

2Pos098 Thermal regulation on EML4-ALK condensates dynamics and signaling activation
**Chongxia Zhong**[1], Josephina Sampson[2], Richard Bayliss[2], Madoka Suzuki[1] ([1]*Inst. Protein Res., Univ. Osaka*, [2]*2. Astbury Ctr. Struct. Mol. Biol., Univ. Leeds, UK*)

2Pos099 細胞膜脂質による上皮成長因子受容体の活性制御機構の解析
Bilateral regulation of EGFR activity and local PI(4,5)$P_2$ dynamics in mammalian cells observed with single-molecule microscopy
**Mitsuhiro Abe**[1], Masataka Yanagawa[1,2], Yasushi Sako[1] ([1]*RIKEN PRI*, [2]*Grad. Sch. Pharm. Sci., Kyoto Uni.*)

2Pos100 2 回の忌避刺激に対する大腸菌忌避応答と受容体脱メチル化酵素 CheB 動態
Repellent response of *Escherichia coli* to twice repellent stimuli and kinetics of the receptor demethylase CheB
Yugo Tomoda, Yoichi Kuroki, Yumiko Uchida, Akihiko Ishijima, **Hajime Fukuoka** (*Grad. Sch. Front. Biosci., Univ. Osaka*)

2Pos101 心筋細胞集団間の線維芽細胞接続における心筋細胞同期
Synchronization of Cardiomyocytes in Fibroblasts Connections between Cardiomyocyte Clusters
**Mayu Yamada**, Tomoyuki Kaneko (*LaRC.FB.Hosei Univ.*)

2Pos102 溶液中の細胞性粘菌多細胞体への薬物添加
Drug addition to multicellular bodies of *Dictyostelium discoideum* in solution
**Sotaro Fukuda**[1], Tomohiro Shima[2], Yusuke V. Morimoto[3] ([1]*Grad. Sch. Comput. Sci. Syst. and Eng, Kyushu Inst. Tech*, [2]*Grad. Sch. Sci, Univ. Tokyo*, [3]*Grad. Sch. Comput. Sci. Syst. and Eng, Kyushu Inst. Tech*)

2Pos103 海洋性バクテリア *Vibrio alginolyticus* の情報伝達タンパク質 CheY 動態の 1 細胞観察
Observation of CheY-GFP dynamics in a single *Vibrio alginolyticus* cell
**Eito Kawamura**, Ryoya Takase, Yumiko Uchida, Akihiko Ishijima, Hajime Fukuoka (*Grad. Sch. Front. Biosci., Univ. Osaka*)

2Pos104 心筋細胞クラスターサイズによる薬剤応答の違いの解析
Effect of Cardiomyocyte Cluster Size on Drug Response
**Chinatsu Fujita**, Kentaro Kito, Tomoyuki Kaneko (*LaRC.FB.Hosei Univ*)

2Pos105 細胞性粘菌における新規細胞巨大化法による細胞内高分解能計測
High-resolution intracellular measurements using a novel cell enlargement method in *Dictyostelium discoideum*
**Yukihisa Hayashida**[1], Yuki Gomibuti[2], Chikoo Oosawa[2], Takuo Yasunaga[2], Yusuke V Morimoto[2] ([1]*Grad. Sch. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech*, [2]*Dept. Phys. and Info. Eng., Fac. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech*)

## 16A. 生体膜・人工膜：構造・物性／16A. Biological & Artificial membrane: Structure & Property

2Pos106 スフィンゴミエリンのナノドメイン形成に対するコレステロールの影響
Cholesterol assists gel-like nanodomain formation of biologically relevant sphingomyelins
**Masanao Kinoshita**[1], Koki Yamane[2], Nobuaki Matsumori[2] ([1]*Grad. Sch. Sci. Tech., Gunma Univ.*, [2]*Grad. Sch. Sci. Tech., Kyushu Univ.*)

2Pos107 DPPH アッセイとハイパースペクトル顕微鏡を用いた炎症性腸疾患に対する抗酸化ナノザイムの評価
Evaluation of Antioxidant Nanozymes for Inflammatory Bowel Disease Using DPPH Assay and Hyperspectral Microscopy
**Ami Saito** (*Institute of Industrial Science, The University of Tokyo*)

2Pos108 アシル鎖長の異なるスフィンゴミエリンは脂質ラフト様秩序膜ドメイン内で異なるナノドメインを形成する
Sphingomyelins with varying acyl chain lengths form segregated nanodomains within lipid raft-like ordered membrane domains
**Akane Nakamoto**[1], Masanao Kinoshita[2], Nobuaki Matsumori[1] ([1]*Grad. Sch. Sci., Kyushu Univ.*, [2]*Grad. Sch. Sci. & Tech., Gunma Univ.*)

2Pos109 パターン化モデル膜における電気泳動を用いた膜タンパク質の分離
Separation of membrane proteins by electrophoresis in a patterned model membrane
**Keigo Kitayama**[1], Kenichi Morigaki[2] ([1]*Grad. Sch. Agr., Kobe University*, [2]*Biosignal Research Center, Kobe University*)

2Pos110 両親媒性モデルペプチド 18A の改変による脂質膜曲率を認識するペプチドの開発
Development of curvature sensitive peptides based on the amphipathic model peptide 18A
**Kazuna Ikeuchi**, Keisuke Ikeda, Hiroyuki Nako, Minoru Nakano (*Fac. Pharm. Sci. Univ. Toyama*)

## 16B. 生体膜・人工膜：ダイナミクス／16B. Biological & Artificial membrane: Dynamics

2Pos111 $F_1Fo$-ATP 合成酵素の複合体状態によるミトコンドリア形態と機能の制御機構
Regulatory mechanism of mitochondrial dynamics and function via the complex state of $F_1F_o$-ATP synthase
**Aoi Ichikawa**[1], Takaya Ishihara[1,2], Naotada Ishihara[1] ([1]*Dept. Biol. Sci., Grad. Sch. Sci., Osaka Univ.*, [2]*Dept. Life Sci., Faculty of Med., Shimane Univ.*)

2Pos112 長さ分布を調製したアクチン封入リポソームの形態変化
Morphological changes in actin-encapsulated liposomes with adjusted length distribution
**Yuki Mizutani**, Mahito Kikumoto, Ken Bessho, Kingo Takiguchi (*Grad. Sch. Sci., Univ. Nagoya*)

2Pos113 脂質二重膜小胞の安定性に対するアクチンの影響
Effect of Actin on the Stability of Lipid Bilayer Vesicles
**Ken Bessho**, Mahito Kikumoto, Yuki Mizutani, Kingo Takiguchi (*Grad. Sch. Sci., Nagoya Univ.*)

2Pos114 Reconstitution of actin cytoskeleton into artificial membranes
**Yosuke Senju**[1,2], Feng-Ching Tsai[3], Zack Jarin[4], Ilpo Vattulainen[1], Gregory Voth[4], Patricia Bassereau[3], Pekka Lappalainen[1] ([1]*Univ. Helsinki*, [2]*Okayama Univ.*, [3]*Institut Curie*, [4]*Univ. Chicago*)

## 16C. 生体膜・人工膜：興奮・チャネル／16C. Biological & Artificial membrane: Excitation & Channels

2Pos115 細胞質側とペリプラズム側の張力センサーの異なる役割により明らかになった MscL の非対称な機械刺激感受性
Asymmetric Mechanosensitivity of MscL Channel Revealed by Differential Roles of Cytoplasmic and Periplasmic Tension Sensors
**Takeshi Nomura**[1], Yasuyuki Sawada[2], Masahiro Sokabe[3] ([1]*Sch. Human Sci. Environ., Univ. Hyogo*, [2]*Institute of Materials Innovation, Nagoya Univ.*, [3]*Human Information Systems Labs, Kanazawa Institute of Technology*)

2Pos116 点突然変異によるクラミドモナス TRP チャネル TRP11 の機能解析
Functional analysis of a TRP channel in Chlamydomonas, TRP11, by point mutagenesis
**Takanao Miyake**, Miyu Kimura, Kenjiro Yoshimura (*Col. Sys. Engineer. Sci., Grad. Sch. Engineer. Sci., Shibaura Inst. Technol.*)

2Pos117 MscL での二箇所での張力感受：F7 と F78 の間にある機能的関連性
Dual-Site Tension Sensing in MscL: Functional Link Between F7 and F78
**Yasuyuki Sawada**[1], Takeshi Nomura[2], Masahiro Sokabe[3] ([1]*Inst. Materials, InFuS, Nagoya Univ.*, [2]*Sch. Human Sci and Env., Univ. Hyogo*, [3]*Human Information Systems Labs, Kanazawa Inst. Tech.*)

## 16D. 生体膜・人工膜：輸送・情報伝達／16D. Biological & Artificial membrane: Transport & Signal transduction

2Pos118 DNA チャネル内部の官能基修飾とイオン輸送特性の相関の分子論的解析
Molecular analysis of the correlation between functional group modifications inside DNA channels and ion transport properties
**Taichi Hirano**[1,2], Hiromu Akai[3], Yusuke Sato[4], Kan Shoji[3], Takuya Mabuchi[1,2] ([1]*Graduate School of Engineering, Tohoku University*, [2]*Institute of Fluid Science, Tohoku University*, [3]*Department of Mechanical Engineering, Nagaoka University of Technology*, [4]*Department of Intelligent and Control Systems, Kyushu Institute of Technology*)

## 17. 化学受容／17. Chemoreception

2Pos119 ストレス応答センサーキナーゼ BaeS のマルチリガンド認識機構
Multiple ligand recognition mechanisms of the membrane stress sensor kinase BaeS
**Hirotaka Tajima**[1,2], Riku Takei[3], Kentaro Yamamoto[4], Ikuro Kawagishi[1,2,3] ([1]*Dept. Frontier Biosci., Hosei Univ.*, [2]*Res. Cen. Micro-Nano Tech., Hosei Univ.*, [3]*Grad. Sch. Sci. Eng., Hosei Univ.*, [4]*Dept. Mycobacteriol., Lepr. Res. Ctr., NIID*)

## 18. 神経・感覚（細胞・膜タンパク質・分子）／18. Neuroscience & Sensory systems

2Pos120 **動物と植物間で保存された miRNA 合成分子に関わる遺伝子によって制御される温度耐性機構**
Temperature tolerance regulated by a miRNA processing molecule conserved between animals and plants
**Sakura Sengoku**[1,2], Akane Ohta[1,2], Teruaki Taji[3], Atsushi Kuhara[1,2,4] ([1]*Graduate School of Natural Science, Konan University*, [2]*Institute for Integrative Neurobiology, Konan University*, [3]*Department of Bioscience, Tokyo University of Agriculture*, [4]*AMED-PRIME, Japan Agency for Medical Research and Development*)

2Pos121 **神経ネットワークを構成する細胞数がバースト発火に与える影響**
Effect of Number of Cells in Neural Network on Burst Firing
**Takumi Yamaguchi**, Kentaro Kito, Tomoyuki Kaneko (*FB, Grad. Sch. Sci. & Eng., Hosei Univ.*)

## 19. 神経回路・脳の情報処理／19. Neuronal circuit & Information processing

2Pos122 **方位選択性を備えた深層ニューラルネットワークモデルによるハーマン格子錯視の定量解析**
Quantitative analysis of the Hermann grid illusion using a minimal deep neural network with orientation-specific edge detection
**Masayo Inoue**[1], Izumi Ohzawa[2,3], Kazufumi Hosoda[2,3,4] ([1]*Grad. Sch. Eng., Kyutech*, [2]*Grad. Sch. Frontier Biosciences, Osaka Univ.*, [3]*CiNet, NICT*, [4]*Kobe Univ. Grad. Sch. Health Sciences*)

2Pos123 **ミミズ古典的条件づけの神経メカニズムの解明**
Molecular mechanism of associative learning in earthworm, *Eisenia fetida*
**Yoshiichiro Kitamura**[1], Sukehiro Kabayama[2] ([1]*Dept. Math. Sci. Phys., Col. Sci. Eng., Kanto Gakuin Univ.*, [2]*Appl. Matl. Life. Sci., Grad. Sch. Eng., Kanto Gakuin Univ.*)

## 20. 行動／20. Behavior

2Pos124 **牧羊犬はどのように羊を追い立てるのか？：視覚情報に基づく誘導方法**
How Do Shepherd Dogs Herd Sheep? – A Visual Perception-Based Guiding Rule
**Kosuke Miyoshi**[1], Nen Saito[1,2] ([1]*Graduate School of Integrated Science for Life, Hiroshima University*, [2]*Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences*)

## 21A. 光生物：視覚・光受容／21A. Photobiology: Vision & Photoreception

2Pos125 **発光プローブを用いた哺乳類メラノプシンとアレスチンとの相互作用解析**
Analyses of the interaction between mammalian melanopsin and arrestin using bystander BRET probes
**Kento Takano**, Hisao Tsukamoto (*Grad. Sch. Sci., Kobe Univ.*)

2Pos126 **光依存的シグナル伝達に関与する新奇ロドプシンの分子特性**
Molecular properties of novel microbial rhodopsins with a photosensory function in light-dependent signal transduction
**Qianfan Zhou**, Masae Konno, Keiichi Inoue (*ISSP, Univ. Tokyo*)

2Pos127 PYP と PBP の光依存的多量化反応における PBPC 末端領域の寄与
Contribution of the PBP C-terminal region to the light-dependent multimerization reaction of PYP and PBP
**Yusuke Kuwahara**[1], Youichi Yamazaki[1], Kento Yonezawa[1,2], Sachiko Toma-Fukai[1], Hironari Kamikubo[1,2] ([1]*NAIST, MS*, [2]*NAIST, CDG*)

2Pos128 ラマン分光およびアミノ酸置換体を用いたシアノバクテリオクロム RcaE の光変換機構の研究
Photoconversion mechanism of cyanobacteriochrome RcaE studied by Raman spectroscopy and Mutagenesis
**Taisei Koga**[1], Masako Hamada[2], Yuu Hirose[2], Tomotsumi Fujisawa[1], Masashi Unno[1] ([1]*Fac. Sci. Eng., Saga Univ.*, [2]*Dept. Appl. Che. Life Sci. Toyohashi Univ. of Tech.*)

2Pos129 真骨魚類が特異的に持つ緑感受性ピノプシンの解析
Characterization of the unique green-sensitive pinopsin found in teleost fish
Chihiro Fujiyabu[1], Gyoja Fuji[2], Keita Sato[3], Emi Kawano-Yamashita[4], Hideyo Ohuchi[3], Takehiro Kusakabe[2], **Takahiro Yamashita**[1] ([1]*Grad. Sch. Sci., Kyoto Univ.*, [2]*Grad. Sch. Nat. Sci., Konan Univ.*, [3]*Fac. Med., Dent. & Pharm. Sci., Okayama Univ.*, [4]*Fac. Sci., Nara Women's Univ.*)

2Pos130 ラマン分光法によるセンサリーロドプシン II（*Natronomonas pharaonis* 由来）の O 中間体の発色団構造の特定
Retinal Chromophore Configuration in the O Intermediate of Sensory Rhodopsin II from *Natronomonas pharaonis*
**Tomotsumi Fujisawa**[1], Nozomi Tanaka[1], Jun Tamogami[2], Masashi Unno[1] ([1]*Fac. Sci. Eng., Saga Univ.*, [2]*Coll. Pharm. Sci., Matsuyama Univ.*)

2Pos131 無脊椎動物の非視覚オプシン・アルスロプシンの分子特性の多様性
Molecular diversity of protostome non-visual opsin arthropsin
**Kazumi Sakai**[1], Kengo Fujii[1], Chihiro Fujiyabu[1], Yasuhiro Shiga[2], Takahiro Yamashita[1] ([1]*Grad. Sch. Sci., Kyoto Univ.*, [2]*Tokyo Univ. of Pharm. and Life Sci.*)

2Pos132 可視光感受性を示す甲殻類由来 Opn5 の分子機能解析
Molecular characterization of visible-light sensitive Opn5 from crustaceans
**Kuto Takahashi**[1], Yuya Nagata[1], Keita Sato[2], Kohei Obayashi[3], Hisao Tsukamoto[3], Hideyo Ohuchi[2], Takahiro Yamashita[4], Yuki Sudo[2], Keiichi Kojima[2] ([1]*Grad. Sch. Med. Dent. & Pharm. Sci., Okayama Univ.*, [2]*Fac. Med, Dent & Pharm Sci., Okayama Univ.*, [3]*Grad. Sch. Sci., Kobe Univ.*, [4]*Grad. Sch. Sci., Kyoto Univ.*)

2Pos133 幅広い時間スケールでの時分割結晶構造解析により明らかになったクリプトクロムのシグナル伝達機構
Cryptochrome signal transduction mechanism revealed by time-resolved crystallography across broad timescales
**Yuhei Hosokawa**[1,2,3,4], Po-Hsun Wang[2,5], Nicolas Caramello[6], Mai Nakamura[3], Sylvain Engilberge[6], Antoine Royant[6], Lars-Oliver Essen[5], Ming-Daw Tsai[2], Junpei Yamamoto[3], Manuel Maestre-Reyna[1,2] ([1]*Dept. Chem., National Taiwan Univ.*, [2]*Inst. Biol. Chem., Academia Sinica*, [3]*Grad. Sch. Eng. Sci., Osaka Univ.*, [4]*PRI, RIKEN*, [5]*Dept. Chem., Philipps Univ. Marburg*, [6]*ESRF*)

## 21B. 光生物：光合成／21B. Photobiology: Photosynthesis

2Pos134 緑色硫黄細菌の光合成反応中心複合体のカロテノイド配糖体を介する三重項エネルギー移動
Energy transfer pathway forming triplet-excited state of carotenoid in the photosynthetic reaction center of green sulfur bacteria
**Tomomi Inagaki**[1], Masatoshi Kida[2], Daisuke Kosumi[3], Chihiro Azai[4] ([1]*Graduate School of Life Sciences, Ritsumeikan University*, [2]*Graduate School of Science and Technology, Kumamoto University*, [3]*Institute of Industrial Nanomaterials, Kumamoto University*, [4]*Faculty of Science and Engineering, Chuo University*)

2Pos135 Evaluating the mobility of LHCII in plant thylakoid membrane using high-speed AFM
**Nami Yamano**, Yudai Nishitani, Daisuke Yamamoto (*Fukuoka University*)

2Pos136 モデル植物苔類ゼニゴケ由来の光化学系 I 二量体のクライオ電子顕微鏡単粒子構造解析
Cyro-EM structures of dimeric PSI-LHCI supercomplex from the model organism *Marchantia polymorpha*
**Pi-Cheng Tsai**[1], Romain La Rocca[1], Hiroyasu Motose[2], Jian-Ren Shen[1], Fusamichi Akita[1] ([1]*Adv. Res., Univ. Okayama*, [2]*Grad. Sch. Envir. Life, Nat. Sci. & Tech., Univ. Okayama*)

2Pos137 光化学系 II の Mn 高親和性サイトの配位環境
Coordination environment of Mn high-affinity site in Photosystem II
**Naohiko Nakamura**, Shinya Kosaki, Hiroyuki Mino (*Grad. Sch. Sci., Univ. Nagoya*)

2Pos138 The most stable LH1-RC architecture from a thermophilic purple sulfur bacterium, *Caldichromatium japonicum*
**Yukihiro Kimura**[1], Mohit. K. Saini[2], Endang R. Purba[3], Malgorzata Hall[3], Shinji Takenaka[1], Vera Thiel[4], Bruno M. Humbel[5], Michael T. Madigan[6], Zheng-Yu Wang-Otomo[7], Kazutoshi Tani[8] ([1]*Grad. Sch. Agric., Kobe Univ.*, [2]*Inst. Microbiol., Centre Algatech*, [3]*Sci. Imag. Sec., OIST*, [4]*Leibniz Inst., DSMZ*, [5]*Provost Office, OIST*, [6]*Dept. Microbiol., Southern Illinois Univ.*, [7]*Fac. Sci., Ibaraki Univ.*, [8]*Cent. Comp. Sci, Univ. Tsukuba*)

2Pos139 Spectroscopic characterization of the light-harvesting 1 reaction center complexes from psychrophilic photosynthetic purple bacteria
**Kazuki Inada**[1], Seiji Akimoto[2], Michael T. Madigan[3], Zheng-Yu Wang-Otomo[4], Yukihiro Kimura[1] ([1]*Grad. Sch. Agric., Kobe Univ.*, [2]*Grad. Sch. Sci., Kobe Univ.*, [3]*Dept. Microbiol., Southern Illinois Univ.*, [4]*Fac. Sci., Ibaraki Univ.*)

2Pos140 Spectroscopic and structural characterization of purple bacterial LH1–RC complexes containing bacteriochlorophyll b
**Kouta Hirose**[1], Kaisei Mori[1], Shinji Takenaka[1], Michael T. Madigan[2], Zheng-Yu Wang-Otomo[3], Kazutoshi Tani[4], Yukihiro Kimura[1] ([1]*Grad. Sch. Agric., Kobe Univ.*, [2]*Sch. Biol. Sci., Southern Illinois Univ.*, [3]*Fac. Sci., Ibaraki Univ.*, [4]*Cent. Comp. Sci., Univ. Tsukuba*)

## 21C. 光生物：光遺伝学・光制御／21C. Photobiology: Optogenetics & Optical control

2Pos141 赤色光に応答するアニオンチャネルロドプシンのイオン輸送機構
Ion transport mechanism of channel rhodopsin in response to red ligh
**Keito Minamisawa**[1], Shoko Hososhima[1,2], Satoshi Tsunoda[1,2], Hideki Kandori[1,2] ([1]*Graduate School of Engineering, Nagoya Institute of Technology*, [2]*Opto Bio Technology Research Center, Nagoya Institute of Technology*)

2Pos142 新規内向きプロトンポンプ，PhXeR の分光学的解析
Spectroscopic Analysis of a Novel Inward Proton Pump, PhXeR
**Nanako Hattori**[1], Yuma Ito[1], Yuji Furutani[1,2], Tatsuro Nishikino[1,2], Hideki Kandori[1,2] ([1]*Department of Life Science and Applied Chemistry, Nagoya institute of technology*, [2]*OptoBioTechnology Research Center, Nagoya institute of technology*)

2Pos143 Photoregulation of Ras Function Using Photoresponsive Protein
**Nobuyuki Nishibe**[1], Zhang Ziyun[2], Kazunori Kondo[1], Shinsaku Maruta[1,2] ([1]*Department of Science and Engineering for Sustainable Innovation, Faculty of Science and Engineering, Soka University*, [2]*Department of Biosciences, Graduate School of Science and Engineering, Soka University*)

2Pos144 Autonomous Multicolor Bioluminescence Imaging in Bacteria, Mammalian, and Plant Hosts
**Subhan Hadi Kusuma** (*SANKEN, The University of Osaka*)

2Pos145 Na⁺ポンプから Cl⁻ポンプに変異させた光駆動イオンポンプロドプシンの時間分解赤外分光に関する研究
Time-resolved FTIR study of light-driven ion pump rhodopsin mutants converted from Na ⁺ to Cl ⁻ pump
**Masahiro Yamamoto**[1], Yuma Ito[1], Tatsuya Sakamoto[1], Hideki Kandori[1,2], Yuji Furutani[1,2] ([1]*Grad. Sch. Eng., Nagoya Institute of Technology*, [2]*OptoBioTechnology Research Center, Nagoya Institute of Technology*)

2Pos146 環状ヌクレオチド依存性チャネルを用いた光活性化アデニル酸シクラーゼの活性測定系の開発
Development of a system to measure activity of photoactivated adenylyl cyclase using cyclic nucleotide-gated channels
**Shunsuke Kiguchi**[1], Kosei Higuchi[1], Koshiro Morita[1], Mami Asakura[1,2], Toru Ide[1], Minako Hirano[1] ([1]*Graduate School of Interdisciplinary Science and Engineering in Health Systems, Okayama University*, [2]*Dept. of Comp. Tech. Soln., Okayama Univ.*)

## 23. 生命の起源・進化／23. Origin of life & Evolution

2Pos147 Structural and functional analysis of Heimdallarchaeaota tubulin reveals the origin of eukaryotic microtubules
**Linh Tran**[1], Makito Miyazaki[1,2,3], Samson Ali[4], Akihiro Narita[5], Robert Robinson[4,6] ([1]*Center for Integrative Medical Sciences, RIKEN*, [2]*Center for Biosystems Dynamics Research, RIKEN*, [3]*Graduate School of Medicine, Science and Technology, Shinshu University*, [4]*Research Institute for Interdisciplinary Science, Okayama University*, [5]*Division of Biological Science, Graduate School of Science, Nagoya University*, [6]*School of Bio-molecular Science and Engineering (BSE), Vidyasirimedhi Institute of Science and Technology (VISTEC),*)

2Pos148 古生代ミオグロビンによる高酸素環境への適応
Adaptation of Paleozoic Myoglobins to the Oxygenized Environments
**Yasuhiro Isogai**[1], Antonio Tsuneshige[2], Hiroshi Imamura[3], Tsuyoshi Shirai[3] ([1]*Dept. Pharm. Engin., Toyama Pref. Uni.*, [2]*Dept. Frontier Biosci., Micro-Nano Tech. Res. Center, Hosei Uni.*, [3]*Dept. Frontier Bio-Sci., Nagahama Inst. Bio-Sci. Tech.*)

2Pos149 数千種の細菌における走化性遺伝子群の組み合わせ進化ダイナミクス
Combinatorial evolutionary dynamics of chemotaxis genes across thousands of bacterial species
**Takao Suzuki** (*Juntendo Univ. Grad. Sch. Med.*)

## 24. 合成生物学・人工細胞／24. Synthetic biology & Artificial cells

2Pos150 PURE system 内における翻訳阻害効果の解消
Relieving Translation Repression Caused by Inhibitory DNA Sequences in the PURE System
**Akari Sakurai** (*Graduate School of Arts and Sciences, The University of Tokyo*)

2Pos151 タンパク質集積による脂質-タンパク質非対称膜小胞内膜での効率的な酵素反応
Protein accumulation enhances enzymatic reactions on inner leaflet of asymmetric lipid-protein vesicles
**Masato Suzuki**, Koki Kamiya (*Grad. Sch. Sci. & Tech., Gunma Univ.*)

2Pos152 組織再構築を目指したリポソーム内細胞培養系の開発
Development of Cell Culture System in Liposomes for Tissue Reconstruction
**Reika Hibi**[1], Masahito Hayashi[1,2], Tomoyuki Kaneko[1] ([1]*Dept. FB., Hosei Univ.*, [2]*Dept. Biotech. Life Sci., Tokyo Univ. Agri. Tech.*)

2Pos153 ポリリン酸–塩水溶液の液–液相分離における一価イオンの影響
Monovalent Ion Effect on Liquid–Liquid Phase Separation of Aqueous Polyphosphate–Salt Mixtures
**Tomohiro Furuki**[1,2], Azusa Togo[3], Hatsuho Usuda[4], Tomohiro Nobeyama[2,5], Atsushi Hirano[4], Kentaro Shiraki[2] ([1]*Dept. Life Sci. Tech., Sci. Tokyo*, [2]*Pure and Appl. Sci., Univ. Tsukuba*, [3]*ISC, AIST*, [4]*NMRI, AIST*, [5]*WPI-iCeMS, Kyoto Univ.*)

2Pos154 Retrofitting of antibiotic target sites on ribosomes: A synthetic approach to reveal the molecular basis of antimicrobial resistance
**Ryo Muramatsu**, Yoshikazu Tanaka, Takeshi Yokoyama (*Grad. Sch. Life Sci., Univ. Tohoku*)

2Pos155 細胞サイズ空間への閉じ込めがもたらすタンパク質の遅い拡散と反応拡散波による緩和効果
Enhanced repulsive interactions suppress protein diffusion in membrane-confined systems, alleviated by propagating protein waves
**Hiroki Sakuta**[1,2], Sakura Takada[3], Naoya Yanagisawa[2], Tatsuro Oda[4], Koichi Mayumi[4], Koichiro Sadakane[5], Kei Fujiwara[3], Miho Yanagisawa[1,2,6] ([1]*Univ. Biol. Inst., Univ. Tokyo*, [2]*Grad. Sch. Arts Sci., Univ. Tokyo*, [3]*Dept. Biosci. and Info., Keio Univ.*, [4]*Inst. Solid State Phys., Univ. Tokyo*, [5]*Facul. Life Med. Sci., Doshisha Univ.*, [6]*Dept. Phys., Grad. Sch. Sci., Univ. Tokyo*)

2Pos156 クラミドモナス封入リポソームの遊泳速度決定要因の解析と光スイッチング
Analysis of Swimming Velocity Determinants and Optical Switching of Chlamydomonas-Encapsulated Liposomes
**Koichiro Akiyama**[1], Sota Hamaguchi[2], Hiromasa Shiraiwa[1], Shunsuke Shiomi[1], Daiki Matsunaga[2], Masahito Hayashi[1,3], Tomoyuki Kaneko[1] ([1]*Grad. Sch. Eng. Sci., Univ. Hosei*, [2]*Grad. Sch. Sci. Eng., Univ. Osaka*, [3]*Dept. Biotech. Life Sci., Tokyo Univ. Agri. Tech.*)

2Pos157 細菌べん毛と Rbody により誘導されるリポソームの能動的変形
Active deformation of liposomes induced by bacterial flagella and R-bodies
**Yuto Kobashigawa**[1], Tsubasa Ishida[3], Naoki Hidaka[2], Masahito Hayashi[2,4], Yoshiyuki Sowa[1,2,3] ([1]*Grad. Frontier Biosci., Univ. Hosei*, [2]*Dept. Frontier Biosci., Univ. Hosei*, [3]*Res. Cent. Micro-nano Tech., Univ. Hosei*, [4]*Dept. Biotech. Life Sci., Tokyo Univ. Agri. Tech.*)

2Pos158 異なるリポソーム表面で作動する DNA 回路をつなぐ「DNA シナプス」
"DNA Synapse" Wiring DNA Circuits Operating on Separate Liposome Surfaces
**Masahito Hayashi**, Taro Toyota (*Grad. Sch. Arts Sci., Univ. Tokyo*)

## 26A. 計算生物学: 生命情報学／26A. Computational biology: Bioinformatics

2Pos159 Pfam ドメイン AlphaFold 構造の特徴探索
Features of Pfam domain in Alpha Fold DB
**Yamato Nakaya**, Ryotaro Koike, Motonori Ota (*Graduate School of Informatics, Nagoya University*)

2Pos160 タンパク質参照構造との立体構造比較に基づくタンパク質と結合分子の変形構造のモデリング
Deformation Modeling of Proteins and Ligands Based on Structural Comparison with Reference Protein Structures
**Takeshi Kawabata**, Kengo Kinoshita (*Grad. Scl. Info. Sci., Tohoku Univ.*)

2Pos161 水和構造を考慮したタンパク質ー基質結合親和性予測機械学習モデル
Machine learning prediction model of protein-ligand binding affinity considering hydration structures
**Yukihide Yoshimura**, Hazime Satou, Terada Tohru (*Graduate School of Agricultural and Life Science, The University of Tokyo*)

2Pos162 AlphaFold3 の予測構造に基づく Type-51 R-body 構造変化機構の解明
Mechanism of Type-51 R-body conformational change based on structural predictions using AlphaFold3
**Hiroaki Oheda**[1], Toru Ekimoto[1], Tsutomu Yamane[2], Kosuke Kikuchi[3], Koki Date[3], Takafumi Ueno[3], Mitsunori Ikeguchi[1,2] ([1]*Yokohama City University, Graduate School of Medical Life Science*, [2]*RIKEN, Center for Computational Science*, [3]*Institute of Science Tokyo, School of Life Science and Technology*)

2Pos163 深層学習でリガンド結合状態の RNA 構造を生成する
Generate RNA Conformations in Ligand-binding States with Deep Learning
**Ikuo Kurisaki**[1], Michiaki Hamada[2,3,4] ([1]*Waseda Research Institute for Science and Engineering, Waseda University*, [2]*Faculty of Science and Technology, Waseda University*, [3]*AIST-Waseda University Computational Bio Big-Data Open Innovation Laboratory*, [4]*Graduate School of Medicine, Nppon Medical School*)

2Pos164 インシリコ解析による RseP 阻害剤候補のスクリーニングと構造予測をベースとした基質選択の分子基盤の解明
In Silico Screening of RseP Inhibitor Candidates and Elucidation of the molecular basis of substrate selectivity by Structure Prediction
**Remii Takahashi**[1], Hiroaki Oheda[1], Masao Inoue[1], Toru Ekimoto[1], Tsutomu Yamane[2], Yohei Hizukuri[3], Terukazu Nogi[1], Yoshinori Akiyama[3], Mitsunori Ikeguchi[1,2] ([1]*Yokohama City University, Graduate School of Medical Life Science*, [2]*RIKEN Center for Computational Science*, [3]*Institute for Life and Medical Sciences, Kyoto University*)

2Pos165 ESM 埋め込みのアテンションプーリングを用いたタンパク質機能同一性予測
*Protein Functional Identity Prediction Using Attention-Pooling of ESM Embeddings*
**Kotaro Ukai**, Tohru Terada, Suguru Fujita (*Grad. Sch. of Agri. and Life Sci., Univ. of Tokyo*)

2Pos166 AlphaFold3 versus AlphaFold2 in Sampling Alternative Conformational States of Transporter Proteins
**Jun Ohnuki**, Kei-ichi Okazaki (*Institute for Molecular Science*)

## 26B. 計算生物学: 分子シミュレーション／26B. Computational biology: Molecular simulation

2Pos167 インフルエンザウイルス・ノイラミニダーゼの薬剤耐性機構に関する理論的研究： 酵素反応の自由エネルギープロファイル解析
Computational study of the drug resistance mechanism of influenza virus neuraminidase: Free energy profile analysis of enzyme reaction
**Ryotaro Katsumata**[1], Manabu Igarashi[2], Norifumi Yamamoto[1] ([1]*Chiba Tech*, [2]*Hokkaido University*)

2Pos168 ネットワーク解析による 3α-HSD の二量体間における信号伝達機構の解明
Signal transduction mechanism between the subunits of 3α-HSD by network analysis
**Naoya Hirooka**[1], Niino Yoshiki[2], Kahoru Amakawa[2], Daiki Suzuki[2], Masayuki Oda[1], Juha Lintuluoto[3], Masami Lintuluoto[1] ([1]*Grad. Sch. Life and Env. Sci., Univ. Kyoto Prefectural*, [2]*Fac. Life and Env., Univ. Kyoto Prefectural*, [3]*Grad. Sch. Eng., Univ. Kyoto*)

2Pos169 Prediction of Cross-Species Binding Affinities of GPCR-Targeting Drugs
**Ruigeng Ji**[1], Masaru Ihara[2], Han Zhang[3], Tohru Terada[1] ([1]*Grad. Sch. Agr. Life Sci., Univ. Tokyo*, [2]*Fac. Agr. Mar. Sci., Kochi Univ.*, [3]*School of Environmental Science and Technology, Dalian University of Technology*)

2Pos170 FtsZ 重合ダイナミクスの 10 分規模にわたるメソスコピック反応動力学シミュレーション
Mesoscopic Reactive Dynamics Simulation of FtsZ Polymerization Dynamics on the order of 10 minutes
**Yoshiki Bessho**, Shoji Takada (*Grad. Sch. Sci., Kyoto Univ.*)

2Pos171 全ての側鎖の動きを含めた AI を用いたタンパク質の構造変化モーフィング手法の開発: MOVE-DM 3.0
Development of a Protein Structural Change Morphing method with All Side-Chain Consideration using an AI-based approach: MOVE-DM 3.0
**Yoshihiro Kashiyama**[1], Shota Shimogochi[1], Yuma Shiota[1], Kazuya Iwano[1], Ryota Kiyooka[1], Naoyuki Miyashita[1,2] ([1]*Grad. Sch. of BOST, KINDAI Univ.*, [2]*BOST, KINDAI Univ.*)

2Pos172 Aβ 凝集における相互作用ダイナミクスの解明：Aβ40/Aβ42 各種会合状態の比較
Unraveling the Role of Interaction Dynamics in Aβ Aggregation: A Comparative Study of Aβ40/Aβ42 Monomers, Homodimers, and Heterodimers
**Ayumu Koike**, Norifumi Yamamoto (*ChibaTech*)

2Pos173 pH 一定の分子動力学シミュレーション由来のトラジェクトデータに基づく結合自由エネルギー計算：FabI 酵素での検証
Binding free energy calculation based on constant-pH molecular dynamics simulation-derived trajectory: application to FabI enzyme
**Shin-ichi Fujiwara** (*Fac. Med., Tottori Univ.*)

2Pos174 分子シミュレーションを用いた PET トレーサー PBB3 と TMEM 繊維の結合と安定性
Binding and Stability of PET Tracer PBB3 with TMEM Fibrils using molecular simulations
**Nanami Matsumoto**[1], Yoshitaka Tadokoro[1], Naoyuki Miyashita[1,2] ([1]*Grad. Sch. of BOST, KINDAI Univ.*, [2]*BOST, KINDAI Univ.*)

2Pos175 Markov state Model に基づいた環状ペプチド膜透過過程の多次元の反応座標における速度論的な解析
Kinetic analysis of membrane permeation processes of cyclic peptides on multiple reaction coordinates based on the Markov state model
**Masatake Sugita**[1,2], Kei Terakura[1], Takuya Fujie[1,2], Keisuke Yanagisawa[1,2], Yutaka Akiyama[1,2] ([1]*Sch.Computing, Science Tokyo*, [2]*MIDL, Science Tokyo*)

2Pos176 Molecular dynamics simulations of peptide aggregation properties
**Joe Mori**[1,2], Satoru G Itoh[1,2,3], Hisashi Okumura[1,2,3] ([1]*SOKENDAI*, [2]*IMS*, [3]*ExCELLS*)

2Pos177 Implementation of Modeling Employing Limited Data in GENESIS
**Azuki Mizutani**[1], Alberto Perez[2], Yuji Sugita[1,3] ([1]*Riken, PRI*, [2]*Dept. of Chem., Univ. Florida*, [3]*Riken, R-CCS*)

2Pos178 メチル化ヒストン断片と LEDGF の結合安定性に関する分子動力学シミュレーション
Molecular dynamics simulations of the binding stability of methylated histone fragments to LEDGF
Hinako X. Suzuki[4], Hisashi Okumura[2,3,4], **Satoru Itoh**[1,2,3] ([1]*IMS*, [2]*ExCELLS*, [3]*SOKENDAI*, [4]*Dept. Sci., Shinshu Univ.*)

2Pos179 Atomic-Level Analysis of pH-Dependent Switchable Binding in Ipilimumab-CTLA-4 Complex for Designing Therapeutic Antibodies
**Wanda Destiarani**[1,2], Kowit Hengphasatporn[2], Yasuteru Shigeta[2], Ryuhei Harada[2] ([1]*Grad. Sch. Sci. Tech., Univ. Tsukuba*, [2]*CCS., Univ. Tsukuba*)

2Pos180 タンパク質の形状を考慮した粗視化モデル分子動力学シミュレーションを用いた ECMO 中空糸膜モデル中の血漿と酸素・二酸化炭素の浸透機構
Permeation Mechanism of Plasma, O2 and CO2 in ECMO Hollow Fiber Membrane model Using CG MD Simulation Considering Protein Shape
**Ryota Shibasaki**[1], Makoto Hukuda[1,2], Naoyuki Miyashita[1,2] ([1]*Grad. Sch. BOST, KINDAI Univ.*, [2]*BOST KINDAI Univ.*)

2Pos181 N 結合型糖鎖修飾による Neuropsin (KLK8) の触媒活性の調節機構
Modulation of enzymatic activity in Neuropsin (KLK8) by N-glycosylation
**Mai Fujiwara**[1], Masami Lintuluoto[1], Yoshifumi Fukunishi[2], Hideki Tamura[3], Juha Lintuluoto[4] ([1]*Grad. Sch. Life and Env. Sci., Univ. Kyoto Pref*, [2]*CMB, AIST.*, [3]*Lab. Biofunct. Sci., Univ. Hoshi Sch. of Pharm. Sci*, [4]*Grad. Sch. Eng., Univ. Kyoto*)

2Pos182 Theoretical study of competitively ligands binding to AMP-activated protein kinase
**Taiga Murakami**, Kazutomo Kawaguchi, Hidemi Nagao (*Grad. Sch. Natu. Sci. Tech., Univ. Kanazawa*)

2Pos183 分子シミュレーションを用いた p53N 末端天然変性領域の結合におけるリン酸化と結合相手の影響
Investigating Binding Modes of p53 N-terminal IDR by dPaCS-MD: Impact of Phosphorylation and Partners
**Yoshito Hasegawa**, Duy Phuoc Tran, Akio Kitao (*Life Science and Technology, Science Tokyo Univ.*)

2Pos184 KaiC におけるリン酸化状態変化により誘起されるアロステリック応答の全原子分子動力学解析
All-atom molecular dynamics analysis of allosteric response in KaiC induced by phosphorylation state change
**Riki Ueno**[1], Yudai Terui[1], Koki Adachi[1], Toshifumi Mori[2], Shuji Akiyama[3,4], Mistunori Takano[1] ([1]*Grad. Sch. Adv. Sci. Eng., Waseda Univ.*, [2]*Inst. Mat. Chem. Eng., Kyushu Univ.*, [3]*CIMos, IMS, NINS*, [4]*SOKENDAI*)

2Pos185 フラグメント分子動力学を用いたニューロセルピン新規阻害剤の研究開発
Development of Novel Inhibitors for Neuroserpin Using Fragment Molecular Dynamics
**Nanase Sakashita**[1], Hiroto Terada[1], Daiki Akai[1], Bunzo Mikami[2,3], Maki Onda[1], Kei Moritsugu[1] ([1]*Grad. Sch. Sci. OMU*, [2]*RISH Kyoto Univ.*, [3]*IAE Kyoto Univ.*)

2Pos186 部位選択的 Gaussian accelerated Molecular Dynamics の開発
Development of site-selective Gaussian accelerated Molecular Dynamics
**Hiraku Oshima** (*Grad. Sch. Sci., Univ. Hyogo*)

2Pos187 gREST-ABMD 法によるマルチスケールな自由エネルギー地形探索
New enhanced conformational sampling method for multi-scale molecular dynamics simulations
**Shingo Ito**[1], Hiraku Oshima[2], Yuji Sugita[1,3] ([1]*RIKEN Center for Computational Science*, [2]*Graduate School of Life Science, University of Hyogo*, [3]*Cluster for Pioneering Research, RIKEN*)

## 26C. 計算生物学：生体モデリングとシミュレーション／ 26C. Computational biology: Biological modeling and simulation

2Pos188 Predicting structural and functional properties of albumins from pets and economic animals by molecular modeling and machine learning
**Darunee Traiphothon** (*Grad. Sch. Sci., Univ. Kasetsart*)

2Pos189 シミュレーションによる細菌べん毛周辺の正電荷分布の動態解析
Analysis of the Dynamics of Charged Particle Distributions near a Bacterial Flagellum
**Suguru Ushioda**, Masashi Tachikawa (*Grad. Sch. Nanobio., Yokohama City Univ.*)

2Pos190 Cryo-EM and MDSPACE Reveal Continuous Conformational Heterogeneity in Glutamate Dehydrogenase
**Tingting Wang**[1], Osamu Miyashita[1], Hideki Shigematsu[2], Masaki Yamamoto[3], Florence Tama[1,4] ([1]*R-CCS, RIKEN*, [2]*JASRI, SPring-8*, [3]*RIKEN SPring-8 Center*, [4]*Department of Physics and ITbM, Nagoya Univ.*)

2Pos191 A tension gradient in a noncoserved cell membrane generates a divergent pattern of cell shape and motility
**Valentina Tyukosova**[1], Satoru Okuda[2] ([1]*Kanazawa University, Division of Nano Life Science*, [2]*Kanazawa University, Nano Life Science Institute*)

## 27. 数理生物学・理論生物学／27. Mathematical & Theoretical biology

2Pos192 「細胞死」の理論
Theoretical Basis for Cell Death
**Yusuke Himeoka**[1], Shuhei A. Horiguchi[2,3], Tetsuya J. Kobayashi[1,3] ([1]*Universal Biology Institute, The University of Tokyo*, [2]*Nano Life Science Institute, Kanazawa University*, [3]*Institute of Industrial Science, The University of Tokyo*)

2Pos193 物理と生物の統一理論；公平な増幅と崩壊による自律的最適化
A Unified Theory of Biology and Physics; Self-Optimization by Martingale Turnover with Amplification
**Tomoyuki Yamaguchi** (*Research Institute, Nozaki Tokushukai Hospital*)

2Pos194 脱分化の力学系モデリング
Dynamical Systems Modeling of Dedifferentiation
**Kansuke Sasamori**[1], Yusuke Himeoka[1], Chikara Furusawa[1,2] ([1]*Sch. Sci., Univ. Tokyo*, [2]*BDR, Riken*)

2Pos195 空間変化を伴う反応拡散系
Reaction-diffusion system with spatial deformation
**Naoto Yonekura**, Shinji Deguchi (*Grad. Sch. Eng. Sci., Univ. Osaka*)

## 28. 生態／環境／28. Ecology & Environment

2Pos196 Changes of microbial interactions among core members are one of major driving force to induce community succession
**Reika Mimoto**[1], Takashi Okada[2], Yasuhisa Saito[3], Hiroyuki Futamata[1,4,5] ([1]*Grad. Sch. Integr. Sci. Tech., Shizuoka Univ.*, [2]*Inst. Med. Biol. Kyoto Univ.*, [3]*Grad. Sch. Sci. Eng. Shimane Univ.*, [4]*Grad. Sch. Sci. Tech. Shizuoka Univ.*, [5]*Res. Inst. Green Sci. Tech., Shizuoka Univ.*)

## 29. 非平衡・生体リズム／29. Nonequilibrium state & Biological rhythm

2Pos197 Effects of combined period-modulating mutations on circadian rhythm in a cyanobacterial clock protein system
**Eri Hiraiwa**, Yuji Nishimura, Kosuke Maki (*Grad. Sch. Sci., Univ. Nagoya*)

## 30. 計測／30. Measurements

2Pos198 Polydiacetylene biosensor detecting different binding affinities
**Niklas Urs Brenner**, Kaori Sugihara (*Institute of Industrial Science, The University of Tokyo*)

2Pos199 Selective IR measurement of only the chromophore part in fluorescent proteins by resonance IR method
**Konoka Mifune**[1], Hirona Takahashi[1,2], Minori Yamakawa[1], Makoto Sakai[1,2] ([1]*Graduate school of Science and Engineering, Okayama University of Science*, [2]*Faculty of Science, Okayama University of Science*)

2Pos200 Direct observation of single integrin-mediated forces on soft substrates using a DNA-based force sensor
**Hiroki Fukunaga**[1], Hitomi Matsubara[2], Yoshihiko Kobayashi[3], Fumiko Toyoshima[3], Mitsuhiro Iwaki[1,4,5,6] ([1]*Adv ICT Res Inst, NICT*, [2]*IMS, RIKEN*, [3]*IIR, Science Tokyo*, [4]*IFReC, Osaka Univ.*, [5]*FBS, Osaka Univ.*, [6]*BDR, RIKEN*)

2Pos201 低温ラマン光学活性分光装置の開発及び光受容タンパク質への応用
Development of low-temperature Raman optical activity spectrometer and its application to photoreceptor proteins
**Naoya Sasaki**, Tomotsumi Fujisawa, Masashi Unno (*Fac. Sci. Eng., Saga Univ.*)

2Pos202 Analysis of *Alcanivorax borkumensis* biofilm on binary oil mixtures
**Rei Shimizu**[1], Shufeng Zhao[1], Tatsuya Yamamoto[3], Andrew S. Utada[2,3,4] ([1]*Grad. Sch. of Sci. and Tech., Univ. of Tsukuba*, [2]*Faculty of Life and Environmental Sci., Univ. of Tsukuba*, [3]*Microbial Research Center for Sustainability (MiCS), Univ. of Tsukuba*, [4]*Tsukuba Inst. for Advanced Research, Univ. of Tsukuba*)

2Pos203 光ファイバ型蛍光相関分光法によるヒト血清中の細胞外小胞の定量計測
Measurement of extracellular vesicles in human serum using fiber-optic fluorescent correlation spectroscopy
**Johtaro Yamamoto** (*Health & Med. Res. Inst., AIST*)

2Pos204 ソリッドステートナノポアによる tRNA の柔軟性の評価
Flexibility Evaluation of tRNA by Solid State Nanopore
**Gaku Ogino**[1], Kazuki Nagashima[1], Hikaru Nozawa[1], Artem Lysenko[1], Tatsuhiko Tsunoda[1], Tsutomu Suzuki[2], Sotaro Uemura[1] ([1]*Graduate School of Science, The University of Tokyo*, [2]*Graduate School of Engineering, The University of Tokyo*)

2Pos205 Contactless Stiffness Measurement of Biomolecular Condensates through Acoustic Trapping
**Kichitaro Nakajima**, Hirotsugu Ogi (*Graduate School of Engineering, Osaka University*)

## 31. バイオイメージング／31. Bioimaging

2Pos206 癌の生体ナノイメージングを指向した遠赤色発光性白金ナノクラスターバイオナノプローブの開発
Far red-emitting Pt nanoclusters based bio-nanoprobes for *in vivo* tumor-targeted imaging
**Shin-ichi Tanaka**[1,2], Hiroki Wadati[3,4], Kazuhisa Sato[5,6] ([1]*National Institute of Technology (KOSEN), Kure College*, [2]*NHO Kure Medical Center and Chugoku Cancer Center*, [3]*Department of Material Science, Graduate School of Science, University of Hyogo*, [4]*Institute of Laser Engineering, Osaka University*, [5]*Research Center for Ultra-High Voltage Electron Microscopy, Osaka University*, [6]*Division of Materials and Manufacturing Science, Graduate School of Engineering, Osaka University*)

2Pos207 ルーピング期心臓形成にエタノールが与える影響の SS-OCT 観測
Swept-source OCT analysis of ethanol effects on embryonic heart looping
**Aimi Yamashita**, Taiyo Eguchi, Rikuto Noguchi, Ryuichiro Yamazaki, Yuuta Moriyama, Toshiyuki Mitsui (*Dept. Phys. Sch. Sci., Aoyamagakuin Univ.*)

2Pos208 Recent Updates to Post-acquisition Super Resolution for Cryo-electron Microscopy
**Ray Burton-Smith**, Kazuyoshi Murata (*National Institute of Physiological Sciences*)

2Pos209 生体分子機能の増強に向けた分子局所加温技術の開発
Development of Molecular Heating Technology toward the Enhancement of Biomolecular Functions
**Yuya Matsuda**[1], Kayoko Nomura[2], Cong Quang Vu[2], Takeru Yamazaki[2], Satoshi Arai[1,2] ([1]*Division of Nano Life Science, Kanazawa University*, [2]*WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University*)

2Pos210 Ensemble of Deep Neural Network Models for Drug Screening Using 3D Images of *Drosophila* Larvae
**Md Al Mehedi Hasan**[1], Jean-Emmanuel Clement[2], Walker Peterson[3], Tsubasa Kobayashi[3], Soichiro Hata[4], Takuya Otsuka[4], Koji Tabata[1,2], Masahiro Sonoshita[4], Keisuke Goda[3,5], Tamiki Komatsuzaki[1,2] ([1]*Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan*, [2]*Institute for Chemical Reaction Design and Discovery, Hokkaido University, Sapporo, Japan*, [3]*Department of Chemistry, Graduate School of Science, The University of Tokyo, Tokyo, Japan*, [4]*Institute for Genetic Medicine, Hokkaido University, Sapporo, Japan*, [5]*Department of Bioengineering, University of California, Los Angeles, California 90095, USA*)

2Pos211 オプティカル光熱赤外分光法（O-PTIR）の液ー液相分離分析への応用可能性についての考察
Consideration of the applicability of optical photothermal infrared spectroscopy (O-PTIR) to liquid-liquid phase separation analysis
**Naoki Baden** (*Nihon Thermal Consulting Co.*)

2Pos212 生物発光による多色同時観察法の開発
A method for simultaneous observation of multiple bioluminescence colors
**Mitsuru Hattori**[1], Tetsuichi Wazawa[1], Yuki Hiruta[2], Takeharu Nagai[1] ([1]*SANKEN, The University of Osaka*, [2]*Faculty of Science and Technology, Keio University*)

2Pos213 Development of X-ray fluorescence microscope toward non-destructive nanoscale investigation of phase-separated structures in cell nucleus
**Yosuke Tomioka**[1], Yukako Oma[1], Masahiko Harata[1,2], Yuki Takayama[1,2] ([1]*Graduate School of Agricultural Science, Tohoku University*, [2]*International Center for Synchrotron Radiation Innovation Smart, Tohoku University*)

2Pos214 黄金の蝶々型ナノ粒子を用いた液液相分離液滴の生成消滅制御テクノロジー
Regulatory nanotechnology of liquid-liquid phase separated condensates formation/deformation dynamics by using gold nano-butterflies
**Tomohiro Nobeyama**[1], Koji Takata[3], Tatsuya Murakami[3], Yoichi Yamada[2], Kentaro Shiraki[2] ([1]*Institute for Advanced Study iCeMS, Kyoto University*, [2]*Pure and Applied Physics, University of Tsukuba*, [3]*Graduate School of Engineering, Toyama Prefectural University*)

2Pos215 発蛍光プローブを用いた入れ替わり可能なタンパク質ラベル化システムの開発
Development of Exchangeable Protein Labeling System Using Fluorogenic Probe
**Masafumi Minoshima**[1], Shahi Imam Reja[2], Kohei Iijima[1], Kazuya Kikuchi[1,2] ([1]*Grad. Sch. Eng. The University of Osaka*, [2]*IFReC, The University of Osaka*)

## 32. バイオエンジニアリング／32. Bioengineering

2Pos216 CaM–M13 システムを用いたイオンによる生体分子機械の組み立て制御
Controlling the Assembly of Biomolecular Machines by Ions Using the CaM-M13 System
**Ziyun Zhang**[1], Nobuyuki Nishibe[1], Shinsaku Maruta[1,2] ([1]*Grad. Sch. Sci., Univ. Soka*, [2]*Sch.Sci., Univ. Soka*)

2Pos217 大気圧プラズマによるマウス筋芽細胞 C2C12 の成長促進
Growth promotion of murine myoblast cells C2C12 by non-thermal atmospheric pressure plasma exposure
Takeru Kobayashi, **Miho Tsuji**, Kumagai Shinya (*Meijo Univerisity*)

2Pos218 An enzyme discovery approach based on microbial growth in water-in-oil microdroplets
Fumika Hemmi, Kazuma Kouno, Sotaro Uemura, **Ryo Iizuka** (*Dept. Biol. Sci., Grad. Sch. Sci., The Univ. Tokyo*)

## 34. Miscellaneous topics その他／34. Miscellaneous topics

2Pos219 インクジェットパターン植菌法による大腸菌のコロニー成長の評価
Evaluation of microbial colony growth of *Escherichia coli* inoculated via bioprinting
**Mikiko Tsudome**[1,2], Shigeru Deguchi[1], Yutetsu Kuruma[1,2] ([1]*Jamstec*, [2]*Yokohama City Univ.*)

2Pos220 膜のゆらぎを制御した膜面上の相分離
Phase separation on a membrane surface with controlled membrane fluctuations
**Naoki Iso**[1], Takahiro Sakaue[1], Shunsuke Yamazaki[2], Tsutomu Hamada[2] ([1]*Department of Physical Sciences, Aoyama Gakuin University*, [2]*School of Materials Science, Japan Advanced Institute of Science and Technology*)

## 01A. タンパク質：構造／01A. Protein: Structure

3Pos001 ミオシン II の化学反応と力学反応との共役の分子メカニズムに関する進捗報告
Progress report on the molecular mechanism of the conjugation of chemical and mechanical reactions of myosin II
**Riho Sato**, Takuo Yasunaga (*Grad. Sch. Comput. Sci. Syst. and Eng, Kyushu Inst. Tech*)

3Pos002 ファージの宿主認識の構造解析
Structural analysis of phage host recognition
**Shuji Kanamaru** (*Department of Life Science and Technology, Institute of Science Tokyo*)

3Pos003 HOIL-1L による HOIP の活性制御機構の構造生物学的解析
Structural biology of the regulation of HOIP activity by HOIL-1L
**Marina Koga**[1], Kazuki Kasai[2], Kayo Imamura[1], Kazuhiro Iwai[3], Takayuki Kato[4], Mika Hirose[4], Keiichi Namba[2], Tomoko Miyata[2], Rie Motohashi[1], Hidehito Tochio[1] ([1]*Grad. Sch. of Sci., Kyoto Univ.*, [2]*Grad. Sch. of Fro., Osaka Univ.*, [3]*Grad. Sch. of Med., Kyoto Univ.*, [4]*inst. for pro., Osaka Univ.*)

3Pos004 AcrB による薬剤排出の分子基盤の解析
Analysis of the molecular basis of drug efflux by AcrBAnalysis of the molecular basis of drug efflux by AcrB
**Wataru Sakaguchi**[1], Yuto Muto[1], Atsuki Nakano[1], Kaoru Mitsuoka[2], Ken Yokoyama[1] ([1]*Department of Molecular Biosciences, Kyoto Sangyo University*, [2]*Reseach Center for Ultra-High Voltage Electron Microscopy, Osaka University*)

3Pos005 Liposome に再構成した LRRC8A の構造解析
Structural analysis of LRRC8A reconstituted into liposome
**Ryuga Teramura**[1], Atsuki Nakano[1], Kaoru Mitsuoka[2], Ken Yokoyama[1] ([1]*Life,Sci.,KSU*, [2]*Research Center.,Univ.Osaka*)

3Pos006 ウシ心筋ミトコンドリアの SMP における ATP 合成酵素のオリゴマー構造
Structure of ATP synthase oligomer in SMP membranes of bovine heart mitochondria
Atsuki Nakano[1], **Katsuya Matsuki**[1], Shunsuke Akisada[1], Kaoru Mitsuoka[2], Ken Yokoyama[1] ([1]*Department of Molecular Biosciences, Kyoto Sangyo University*, [2]*Research Center for Ultra-High Voltage Electron Microscopy, Osaka University*)

3Pos007 人工赤色蛋白質 AzamiRed1.0 に復帰変異を導入した変異体シリーズの構造と分光学的性質
Structures and spectroscopic properties of a series of revertant mutant proteins of AzamiRed1.0, an engineered red fluorescent protein
**Isamu Nagatomi**[1], Hiromi Imamura[2], Norihiro Takekawa[1], Katsumi Imada[1] ([1]*Grad. Sch. Sci., Osaka Univ.*, [2]*Grad. Sch. Biost., Kyoto Univ.*)

3Pos008 HeLa S3 細胞内のヒト UCHL3 の立体構造解析
In-cell NMR study of human UCHL3 in HeLa S3 cells
**Hikari Sato**[1], Moeka Nagamine[1], Yuiri Akae[1], Shigeharu Kubota[1], Hiroki Miyata[1], Haruka Sugasawa[1], Kohsuke Inomata[1,2,3], Teppei Ikeya[1], Yutaka Ito[1] ([1]*Department of Chemistry, Tokyo Metropolitan University*, [2]*Insititute for Molecular Science, National Insititutes of Natural Sciences*, [3]*Okazaki Collaborative Platform, National Institutes of Natural Sciences*)

3Pos009 分子クラウディング環境下での蛋白質の立体構造
Protein 3D structures under macromolecular crowding environment
**Shuto Kubo**, Seito Kato, Ryouma Tagishi, Akio Horikawa, Sayeesh P.M., Kousuke Inomata, Teppei Ikeya, Yutaka Ito (*Department of Chemistry, Tokyo Metropolitan University*)

3Pos010 Cryo-EM structure of a putative bicarbonate channel PtBEST1 from diatom *Phaeodactylum tricornutum*
**Hiroyasu Koteishi**[1], Akihiro Kawamoto[1], Ginga Shimakawa[3], Hiroaki Matsui[2], Yoshinori Tsuji[2], Yusuke Matsuda[2], Genji Kurisu[1] ([1]*IPR, Osaka Univ.*, [2]*Dept. Biosci., Sch. Biol & Environ. Sci., Kwansei Gakuin Univ.*, [3]*Grad. Sch., Agri. Sci., Kobe Univ.*)

3Pos011 Structural analysis of Ib mutants by cryo-electron microscopy to reveal the membrane pore formation process of Ib
**Ren Nakanishi** (*kyoto sangyo university*)

## 01B. タンパク質：物性（安定性，折れたたみなど）／01B. Protein: Physical property

3Pos012 分子動力学シミュレーションを用いた IL3Rα N 末端領域の構造揺らぎが IL-3 結合親和性に与える影響評価
Molecular dynamics simulation for IL-3/IL3Rα complexes to verify the effects of fluctuations of IL3Rα N-terminal domain on affinity
**Toshiaki Ueda**[1], Aiko Hasegawa[2], Yozo Nakazawa[1,2], Koji Umezawa[1] ([1]*Grad. Sch. of Sci. & Tech., Shinshu Univ.*, [2]*Sch. of Med., Shinshu Univ.*)

3Pos013 分泌発現量に関わる α 接合因子プレプロリーダー配列の動的構造特性
Dynamical structural property of α-mating factor pre-pro-leader sequence and relationship with the expression yield
**Kazumasa Sakurai** (*Inst. Adv. Tech., Kindai Univ.*)

3Pos014 The relationship between initial structure and polymorphism of amyloid fibrils from SARS-CoV-2 spike peptide
**Manami Yamaguchi**[1], Emi Hibino[1], Natsuko Goda[1], Takeshi Tenno[1,2], Hidekazu Hiroaki[1,2,3] ([1]*Grad. Sch. Pharm. Sci., Nagoya Univ.*, [2]*BeCellBar, LLC*, [3]*COMIT*)

3Pos015 GFPuv の発色団形成反応におけるカルボニル基の役割
Role of carbonyl groups in the chromophore formation of GFPuv
**Tomoya Adachi**[1], Masaru Hoshino[2], Kaori Chiba[1] ([1]*Indust. Eng. Natl. Inst. Tech, Ibaraki Coll. Japan*, [2]*Kyoto Univ. Pharm.*)

3Pos016 GFP 様タンパク質 mCherry が分子の内部にもつ酸性アミノ酸の役割
Role of acidic Amino Acids inside the molecule of GFP-like Proteins
**Pattarisa Rerganan**[1], Masaru Hoshino[2], Nobuhiro Suzuki[3], Kaori Chiba[1] ([1]*Indust. Eng. Natl. Inst. Tech, Ibaraki Coll. Japan*, [2]*Kyoto Univ. Pharm.*, [3]*NARO*)

3Pos017 E222DGFPuv は中性 pH で acidic form の発色団のみを持つ
E222DGFPuv has only chromophores in acidic form at neutral pH
**Yutsuki Mimura**[1], Masaru Hoshino[2], Kaori Chiba[1] ([1]*Indust. Eng. Natl. Inst. Tech, Ibaraki Coll. Japan*, [2]*Kyoto Univ. Pharm.*)

3Pos018 タンパク質をモデルとした生物の超高圧力耐性のラマン分光研究
Raman Spectroscopic Study on Ultra-High Pressure Resistance in Small Organisms Using Proteins as a Model
**Kantaro Iwasa**[1], Toshiki Nakao[1], Minoru Kato[1,2] ([1]*Grad. Sch. of Life Sci. Univ. Ritsumei*, [2]*Col. of Life Sci. Univ. Ritsumei*)

3Pos019 部位特異的変異体を用いた α-イソプロピルリンゴ酸合成酵素(IPMS)のロイシン認識メカニズムの解明
Elucidation of the leucine recognition mechanism of α-isopropylmalate synthase (IPMS) using site-directed mutants
**Hanane Nakamura**[1], Yuto Miura[1], Hana Kitazume[1], Kanon Sugao[2], Yoko Akazawa[3], Shigeru Shimamoto[4], Takayuki Ohnuma[2], Atsushi Kurata[2], Koichi Uegaki[2] ([1]*Grad.Sch.Agric.Kindai univ.*, [2]*Agric.Kindai univ.*, [3]*AIST*, [4]*Fac.Sci. &Eng.Kindai univ*)

3Pos020 α-イソプロピルリンゴ酸合成酵素のロイシン感受性とリンカードメインの構造変化
Leucine Sensitivity and Structural Changes in the Linker Domain of *α-Isopropylmalate Synthase*
**Yuto Miura**[1], Hanane Nakamura[1], Hana Kitadume[1], Kanon Sugao[2], Yoko Akazawa[3], Kazuki Mitani[4], Shigeru Shimamoto[4], Kazuki Kawahara[5,6], Hiroya Oki[7] ([1]*Grad. Sch. Agric., Kindai Univ.*, [2]*Agric., Kindai Univ.*, [3]*AIST*, [4]*Fac. Sci. & Eng., Kindai Univ.*, [5]*Grad. Sch. Pharm. Sci., Osaka Univ.*, [6]*CiDER, Osaka Univ.*, [7]*Res. Inst. Microbial Dis., Osaka Univ.*)

3Pos021 均一基質バインダーのダイナミクスと進化
Dynamics and Evolution of Uniform Substrate Binder
**Yusran Abdillah Muthahari**[1], Yovin Sugijo[1], Paola Laurino[1,2] ([1]*Protein Engineering and Evolution Unit, Okinawa Institute of Science and Technology*, [2]*Institute for Protein Research, Osaka University*)

3Pos022 ヘイムダルアクチンは短いフィラメントを形成し，骨格筋トロポミオシントロポニン複合体と共沈する
Heimdall actin forms short filaments and coprecipitates with the muscle tropomyosin-troponin complexes
**Kaoru Takahashi**[1], Tomoharu Matsumoto[2], Akihiro Narita[2], Taro Q.P. Uyeda[1] ([1]*Dept. Pure. & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*, [2]*Dept. Physics, Grad. Sch. of Science, Nagoya Univ.*)

3Pos023 EPR 法による南極海および深海細菌由来無機ピロフォスファターゼの低温適応機構の解明
EPR Spectroscopy Reveals the Cold Adaptation Mechanism for Di-$Mn^{2+}$ Inorganic Pyrophosphatase
Ren Sugawara, Yuri Kusu, Kantaro Sakamoto, **Masaki Horitani** (*Fac. Agri., Saga Univ.*)

3Pos024 ヒト H 鎖フェリチン内部に形成される鉄コアに対するリン酸の影響
Effect of phosphate on the iron core formed in human H-ferritin
**Katsuaki Hanabusa**[1], Takumi Kuwata[2], Haruki Sakakibara[1], Kazuo Fujiwara[1], Masamichi Ikeguchi[1,2] ([1]*Department of Biosciences., Graduate School of Science and Engineering, Soka University*, [2]*Department of Science and Engineering for Sustainable Innovation, Soka University*)

3Pos025 NMR による Ubiquitin C-terminal Hydrolase (UCHL3)のユビキチンとの相互作用とダイナミクス解析
NMR analysis of the intermolecular interaction between Ubiquitin C-terminal Hydrolase (UCHL3) and ubiquitin, and their molecular dynamics
**Shigeharu Kubota**, Hiroki Miyata, Haruka Sugasawa, Yutaka Ito, Teppei Ikeya (*Department of Chemistry, Tokyo Metropolilitan University*)

3Pos026 Purification and functional analysis of Loki archaea actin
**Haruka Tatsuta**[1], Gaku Sakai[1], Yuta Yanase[1], Tomoharu Matsumoto[2], Akihiro Narita[2], Taro Uyeda[1] ([1]*Grad. Sch. Adv. Sci. Eng., Univ. Waseda*, [2]*Grad. Sch. Sci., Univ. Nagoya*)

## 01D. タンパク質：計測・解析の方法論／01D. Protein: Measurement & Analysis

3Pos027 A high-performance software suite for 3D reconstruction from single-particle X-ray scattering
**Wenyang Zhao**[1], Osamu Miyashita[1], Florence Tama[1,2,3] ([1]*RIKEN Center for Computational Science*, [2]*Institute of Transformative Bio-Molecules, Nagoya University*, [3]*Graduate School of Science, Nagoya University*)

3Pos028 CaMKII と GluN2B ペプチドの結合を可視化する高速 AFM 基板の開発
Development of a HS-AFM substrate to visualize the binding between CaMKII and GluN2B peptides
**Kodai Hasegawa**[1], Taiki Kobayashi[2], Hiroki Konno[3,4], Yusuke Miyanari[3,4], Mikihiro Shibata[3,4] ([1]*Grad.Sch.NanoLS.,Kanazawa Univ.*, [2]*Sch.Math.&Phys.,Kanazawa Univ.*, [3]*WPI-NanoLSI,Kanazawa Univ.*, [4]*InFiniti,Kanazawa Univ.*)

3Pos029 高速 AFM 用超微小カンチレバーの変位検出レーザーの自動位置アライメント
Automatic position alignment of the deflection detection laser to ultra-small high-speed AFM cantilever
**Taiyo Ogawa**[1], Noriyuki Kodera[2], Kenichi Umeda[2] ([1]*Grad.Sch.Math. & Phys.,Kanazawa Univ.*, [2]*WPI-NanoLSI,Kanazawa Univ.*)

3Pos030 蛍光明滅を併用した TDP-43–核酸相互作用の定量性向上
Improving quantitative detection of TDP-43-nucleic acid interactions by combining fluorescence blinking analysis
**Haruki Kawai**[1], Akira Kitamura[2] ([1]*Grad. Sch. of Life Sci., Hokkaido Univ.*, [2]*Fac. of Adv. Life Sci., Hokkaido Univ.*)

3Pos031 磁気コンパスの機構解明に向けた共焦点顕微鏡による FAD-Trp 系の蛍光測定
Fluorescence measurement of the FAD-Trp system by confocal microscopy to elucidate the mechanism of the magnetic compass
**Akihiro Tateno**[1], Toru Kondo[1,2] ([1]*ExCELLS*, [2]*NIBB*)

## 01E. タンパク質：タンパク質工学／進化工学／01E. Protein: Engineering

3Pos032 Tag/Catcher システムを用いたタンパク質構造体への異種タンパク質の取り込みの検討
Incorporation of heterologous proteins into protein structures using the Tag/Catcher system
**Yume Kosuge**, Koki Kamiya (*Grad. Sch. Sci. & Tech., Gunma Univ.*)

3Pos033 耐熱性酵素を用いた無細胞アルカン合成
Cell-free alkane synthesis using thermostable enzymes
**Kaisei Nagao**[1], Shunji Suetaka[1], Munehito Arai[1,2] ([1]*Dept. Life Sci., Univ. Tokyo*, [2]*Dept. Phys., Univ. Tokyo*)

3Pos034 大腸菌における翻訳促進ペプチドの機械学習による予測と実証
Machine learning-guided identification and validation of translation-enhancing peptides in *Escherichia coli*
**Chie Motono**[1], Yokoyama Gentaro[2], Hideo Nakano[3], Teruyo Ojima-Kato[3], Michiaki Hamada[2] ([1]*Cellular and Molecular Biotechnology Research Institute, AIST*, [2]*Graduate School of Advanced Science and Engineering, Waseda University*, [3]*Graduate School of Bioagricultural Sciences, Nagoya University*)

3Pos035 タンパク質ファミリー 2 種の配列を深層学習により混合させた新規タンパク質の特性
Deep Learning-Guided Generation of "Marble-Type" Hybrid Transcription Factors Bridging Two Subfamilies
Michio Aiko, Atsushi Minami, Sota Okuda, Kazumasa Ohtake, **Daisuke Kiga** (*Waseda U, Dept. Elect Eng and Biosci*)

3Pos036 A platform for developing thermogenetic tools to control protein function
**Quang Cong Vu**, Satoshi Arai (*WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University*)

## 01F. タンパク質：天然変性／01F. Protein: Intrinsic disorder

3Pos037 SOS1 天然変性領域(IDR)の GRB2 との多価相互作用と液液相分離形成機構の溶液 NMR 解析
NMR analysis of the multivalent interaction between SOS1 intrinsically disordered region and GRB2 and its liquid–liquid phase separation
**Rina Kamimura**[1], Sangya Yu[1], Maho Watanabe[1], Toshifumi Hayashi[1], Haruka Sugasawa[1], Tsutomu Mikawa[2], Yutaka Ito[1], Teppei Ikeya[1] ([1]*Department of Chemistry, Graduate School of Science, Tokyo Metropolitan University*, [2]*RIKEN Center for Biosystems Dynamics Research*)

3Pos038 Kinetic Study on LLPS of Pbp1 by Combining Stopped-Flow and Transient Grating Methods
**Ryo Taniguchi**, Masahide Terazima, Yusuke Nakasone (*Grad. Sch. Sci., Kyoto Univ.*)

3Pos039 SAXS-guided prediction of animal-like cryptochrome from green alga Chlamydomonas reinhardtii structure via coarse-grained MD simulations
**Petlada Rattanasombat**[1], Osamu Miyashita[2], Tsubura Yoshimi[3], Sachiko Yanagisawa[3], Minoru Kubo[3], Florence Tama[1,2,4] ([1]*Graduate School of Science, Nagoya University*, [2]*RIKEN Center for Computational Science*, [3]*Graduate School of Science, University of Hyogo, Ako-gun, Hyogo, Japan*, [4]*Institute of Transformative Bio-Molecules, Nagoya University*)

3Pos040 高速 A F M による結核菌休眠制御タンパク質 M D P1 のサブ分子観察
Sub-molecular imaging of MDP1, a dormancy-regulating intrinsically disordered protein in *Mycobacterium tuberculosis*, by high-speed AFM
**Yuna Goto**[1], Kaho Nakamoto[1], Kenichi Umeda[2], Akihito Nishiyama[3], Sohkichi Matsumoto[3], Noriyuki Kodera[2] ([1]*Grad. Sch. Math. & Phys., Kanazawa Univ.*, [2]*WPI-NanoLSI, Kanazawa Univ.*, [3]*Dept. Bacteriol., Niigata Univ. Sch. Med.*)

## 02. ヘムタンパク質／02. Heme proteins

3Pos041 Modification of intramolecular electron transfer membrane protein for photo-induced iron reduction
**Kanta Kondo**[1], Hiroshi Sugimoto[2,3], Kimura Tetsunari[1,4] ([1]*Dept. of Chem., Grad Sch. of Sci., Kobe Univ.*, [2]*SPring-8Cent., RIKEN.*, [3]*Dept. of Life Sci., Grad Sch. of Sci., Hyogo Prefectural Uni.*, [4]*Research Cent. for Molecular Photo Sci., Kobe Uni.*)

3Pos042 Analysis of the Transport Mechanism in the ABC transporter Based on Spectroscopic Tracking of Heme
**Kaito Nakagawa**[1], Yoshitsugu Shiro[2], Hiroshi Sugimoto[2,3], Tetsunari Kimura[1,4] ([1]*Dept. of Chem., Grad. Sch. of Sci., Kobe Univ.*, [2]*Dept. of Life Sci., Grad. Sch. of Sci., Univ. of Hyogo*, [3]*SPring-8 Cent., RIKEN*, [4]*Mol. Photo. Res. Cent., Kobe Univ.*)

## 03. 膜タンパク質／03. Membrane proteins

3Pos043 QM/MM シミュレーションを用いたハロロドプシンの光活性化状態に関する理論的研究
Theoretical studies on halorhodopsin photoactivation using QM/MM simulations
**Tomo Ejiri**, Shigehiko Hayashi (*Grad. Sci., Univ. Kyoto*)

3Pos044 全長構造から読み解く KcsA の構造ダイナミクスと機能
Structural dynamics and function of KcsA revealed by the full-length structures
**Kotaku Yano**[1], Hiroko Takazaki[2], Hirofumi Shimizu[3], Takuo Yasunaga[1] ([1]*Grad. Sch. Comp. Sci. and Sys. Eng. Kyushu Inst. Tech*, [2]*IPR, Osaka University*, [3]*University of Fukui*)

3Pos045 脂質過酸化能の評価に向けた BRIL 融合型シトクロム b561D2 のナノディスク化
Preparation of BRIL-fused cytochrome b561D2 in nanodisc to evaluate its peroxidation activity for lipid membrane
**Haruka Yoshimura**[1], Motonari Tsubaki[1], Hisroshi Sugimoto[2,3], Tetsunari Kimura[1,4] ([1]*Graduate School of Science, Kobe University*, [2]*SPring-8 Center, RIKEN*, [3]*Graduate School of Science, University of Hyogo*, [4]*Molecular PhotoScience Research Center, Kobe University*)

3Pos046 Affinity between of the ABC transporter BhuUV and the periplasmic binding protein BhuT, investigated by biolayer interferometry
**Yusei Toyoda**[1], Yoshitsugu Shiro[2], Hiroshi Sugimoto[2,3], Tetsunari Kimura[1,4] ([1]*Dept. of Chem., Grad. Sch. of Sci., Kobe Univ.*, [2]*Dept. of Life Sci., Grad. Sch. of Sci., Univ. of Hyogo*, [3]*SPring-8 Cent., RIKEN*, [4]*Mol. Photo. Res. Cent., Kobe Univ.*)

## 04. DNA・DNA 結合タンパク質／04. DNA & DNA binding proteins

3Pos047 Molecular Simulations Reveal Phase Separation Mechanisms of Pluripotency Transcription Factor Combinations
**Samuel Blazquez Fernandez**, Yutaka Murata, Shoji Takada, Tsuyoshi Terakawa (*Department of Biophysics, Graduate School of Science, Kyoto University, Kyoto, Japan*)

3Pos048 高速 AFM による形状測定とナノ力学測定を用いた DNA-MDP1 複合体の薬剤応答解析
Structural and nano-mechanical analysis of drug effects on DNA-MDP1 complexes using high-speed AFM
**Kaho Nakamoto**[1], Yuna Goto[1], Kenichi Umeda[2], Akihito Nishiyama[3], Sohkichi Matsumoto[3], Noriyuki Kodera[2] ([1]*Grad. Sch. Math. & Phys., Kanazawa Univ.*, [2]*WPI-NanoLSI, Kanazawa Univ.*, [3]*Dept. Bacteriol., Niigata Univ. Sch. Med.*)

3Pos049 Slippage Dynamics of Trinucleotide Hairpins and Their Disruption of the Genome-Maintaining Function of Human Replication Protein A (hRPA)
**I-Ren Lee**, Yu-Chi Kuang, Cheng-Wei Ni, Szu-Yu Chen (*Department of Chemistry, National Taiwan Normal University*)

## 05. RNA・RNA 結合タンパク質／05. RNA & RNA binding proteins

3Pos050 グルタミル tRNA 合成酵素の分子機構に関する理論的研究
Theoretical study on a molecular mechanism of the glutamyl-tRNA synthetase
**Ayaka Matsuyama**[1], Masahiko Taguchi[2], Shigehiko Hayashi[1] ([1]*Grad. Sch. Sci., Kyoto Univ.*, [2]*IMRAM, Tohoku Univ.*)

## 06. DNA/RNA ナノテクノロジー／06. DNA/RNA nanotechnology

3Pos051 紫外線損傷 DNA の低分子化合物による光修復
Photorepair of UV-damaged DNA by small molecules
**Tatsuya Iwata**, Rina Fuchigami, Risa Inomata, Manato Okabe, Yumika Ochiai, Fumio Takahashi, Mineo Iseki (*Fac. Phar. Sci., Toho Univ.*)

3Pos052 A Systematic Approach for Integrating DNA Aptamers and DNA-Responsive Nanosystems via Strand Displacement Reactions
**Satofumi Kato**[1], Masahiro Takinoue[2], Hiroaki Onoe[1] ([1]*Graduate School of Science and Technology, Keio University*, [2]*Department of Computer Science, Institute of Science Tokyo*)

3Pos053 Self-limited assembly of shape-adjustable DNA origami modules into desired polygonal shapes
Ayu Sakamoto, **Yuki Suzuki** (*Grad. Sch. Eng., Mie Univ.*)

## 07. 核酸：その他／07. Nucleic acid: Others

3Pos054 DNA 超らせん構造のねじれと伸長による力学的制御
Mechanical control of DNA supercoils by torsion and extension
**Shinnosuke Inui**, Anzu Kawamura, Yoshihiro Murayama (*Department of Biomedical Engineering, Faculty of Engineering, Tokyo University of Agriculture and Technology*)

## 08. クロマチン・染色体／08. Chromatin & Chromosomes

3Pos055 ESR 分光学で捉えた液液相分離中のヘテロクロマチンタンパク質 1(HP1)のダイナミクス
Dynamics of heterochromatin protein 1 (HP1) during phase separation, as studied by ESR spectroscopy
Isao Suetake[2], Kazunobu Sato[1], Toshiki Takei[3], Tomoaki Sugishiata[3], Yuichi Mishima[3], Yoh Matuski[3], Toshimichi Fujuwara[3], Takeji Takui[1], Makoto Miyata[1], Hironobu Hojo[3], **Toshiaki Arata[1,3]** ([1]*Grad. Sch. Sci., Osaka Met. Univ.*, [2]*Grad. Sch. Home Economics, Kobe Women's Univ.*, [3]*Inst. Protein Res., Univ. Osaka*)

3Pos056 Mechanical Insights into Nucleosome Remodeling by divalent Cations: A Single-molecule study
**Amarjeet Kumar[1]**, Tomoko Sunami[1], Shoko Sato[2], Hitoshi Kurumizaka[2], Hidetoshi Kono[1,3] ([1]*Inst. Quant. Life Sci., Nat. Inst. Quant. Sci. Tech., Chiba, Japan*, [2]*Inst. Quant. BioSci., Univ. of Tokyo, Tokyo, Japan*, [3]*Cent. Quant Life Sci. Str. Therap., Chiba Univ., Chiba, Japan*)

3Pos057 ヌクレオソーム DNA 引き剥がしダイナミクスの解読：ナノポアが明らかにするヒストン N 末端テイルの役割
Decoding Nucleosomal DNA Unwrapping Dynamics: The Role of Histone N-Terminal Tails Revealed by Nanopores
**Satoshi Ogihara[1]**, Hikaru Nozawa[1], Takumi Oishi[2], Fritz Nagae[3], Munetaka Akatsu[2], Shoji Takada[3], Hitoshi Kurumizaka[2], Sotaro Uemura[1] ([1]*Department of Biological Sciences, Graduate School of Science, The University of Tokyo*, [2]*Institute for Quantitative Biosciences, The University of Tokyo*, [3]*Department of Biophysics, Graduate School of Science, Kyoto University*)

## 10. 水・水和／電解質／10. Water & Hydration & Electrolyte

3Pos058 回折 X 線明滅法を用いた不凍液中の再結晶過程に伴う水分子動態解析
Molecular dynamics analysis of the recrystallization behavior of water in antifreeze solutions by Diffracted X-ray Blinking
**Daisuke Sasaki[1]**, Umena Yasufumi[2], Yuji C. Sasaki[1] ([1]*Department of Advanced Materials Science, Graduate School of Frontier Sciences, The University of Tokyo*, [2]*Synchrotron Radiation Research Center,Nagoya University*)

3Pos059 サブテラヘルツ波照射による DNA 塩基対形成の非熱的促進
Non-thermal acceleration of DNA base-pair rearrangement using sub-THz irradiation
**Masahiko Imashimizu**, Johtaro Yamamoto, Tomoya Inose (*AIST*)

## 12. 発生・分化／12. Development & Differentiation

3Pos060 ショウジョウバエ胚の後腸の捻転と伸長は異なる集団細胞移動によって独立して制御される
Distinct collective cell behaviors independently regulate the rotation and elongation of the embryonic gut in *Drosophila*
**Mikiko Inaki**[1,2], Satoru Okuda[3], Kenji Matsuno[2] ([1]*Grad. Sch. Sci., Univ. Hyogo*, [2]*Grad. Sch. Sci., Univ. Osaka*, [3]*Nano LSI, Kanazawa Univ.*)

3Pos061 細胞性粘菌における細胞分化・脱分化と細胞内 $Ca^{2+}$ 動態の相関分析
Correlative analysis of intracellular $Ca^{2+}$ dynamics with cell differentiation and dedifferentiation in *Dictyostelium*
**Rintaro Aono**, Yusuke V. Morimoto (*Grad. Sch. Comput. Sci. Syst. and Eng, Kyushu Inst. Tech.*)

3Pos062 人工ヒト胚モデルにおけるサイズ依存的なパターン形成：胚葉形成のダイナミクスに関する考察
Size-Dependent Pattern Formation in Engineered Human Embryo Models: Insights into Gastrulation Dynamics
**Miyu Mori**[1], Hazuki Tuboi[1], Ryo Kojima[1], Chihiro Takeuchi[1], Yohei Hayashi[2], Kiyoshi Ohnuma[1] ([1]*Nagaoka University of Technology*, [2]*BioResource Research Center, RIKEN*)

## 13. 筋肉（筋蛋白質・収縮）／13. Muscle

3Pos063 昆虫飛翔筋の回転平均化された 2 次元 X 線回折像からサルコメアの 3 次元構造を復元する
Restoration of the 3D structure of insect flight muscle from a rotationally averaged 2D X-ray diffraction pattern
**Hiroyuki Iwamoto** (*SPring-8・JASRI*)

## 14. 分子モーター／14. Molecular motor

3Pos064 Cilia-like Beating of Clamped Microtubules Driven by Kinesin Motors
**Jane Wanja Karanja**, Douglas K. Ng'ang'a, Takahiro Nitta (*Applied Physics Course, Faculty of Engineering, Gifu University, Gifu 501-1193, Japan*)

3Pos065 Buckling and Trajectory Deflections of Microtubules Driven by Kinesin Motors
**Douglas Kagoiya Ng'ang'a**, Takahiro Nitta (*Applied Physics Course, Faculty of Engineering, Gifu University*)

3Pos066 Cryo-EM visualization of the conformational states of $G_1$-ATPase, a rotary motor driving *Mycoplasma mobile* gliding
**Takuma Toyonaga**[1], Daisuke Unabara[1], Tasuku Hamaguchi[1], Koji Yonekura[1,2] ([1]*IMRAM, Tohoku Univ.*, [2]*RIKEN SPring-8 Center*)

3Pos067 Development of gold nanoparticle-based optical switches for reversible artificial muscles driven by kinesin motor proteins
**Kensei Hori**[1], Taiyo Sato[1], Yuich Hiratsuka[2], Keisuke Morishima[4], Takahiro Nitta[3] ([1]*Grad. Sch. Nat. Sci. & Tech., Univ.Gifu*, [2]*JAIST*, [3]*Univ.Gifu*, [4]*Univ.Osaka*)

3Pos068 二重オプトジェネティックツールによるキネシン 14 のアンカー位置制御を介した微小管運動方向の光制御
Light-controlled directional reversal of microtubule motility via dual optogenetic switches regulating kinesin-14 anchoring
**Masahiko Yamagishi**[1,2], Junichiro Yajima[1,2,3] ([1]*Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo*, [2]*Komaba Institute for Science, The University of Tokyo*, [3]*Research Center for Complex Systems Biology, Universal Biology Institute, The University of Tokyo*)

3Pos069 LOV トロポニンによるアクトミオシンの光制御
Light control of myosin-actin based motility by LOV-Troponin
**Koki Yasuda** (*JAIST*)

3Pos070 脂質二重膜中で機能する ATP 合成酵素のクライオ電子顕微鏡構造解析
Cryo-EM structures of ATP synthases functioning in lipid bilayers
**Atsuki Nakano**[1], Jun-Ichi Kishikawa[2], Christoph Gerle[5], Hideki Shigematsu[4], Kaoru Mitsuoka[3], Ken Yokoyama[1] ([1]*Fac. of Life Sci., Kyoto Sangyo Univ.*, [2]*Applied Biology, Kyoto Institute of Technology*, [3]*Research Center for Ultra-High Voltage Electron Microscopy, Osaka University*, [4]*JASRI*, [5]*RIKEN SPring-8 Center*)

3Pos071 骨格筋の収縮原理を細胞外で模倣したアクトミオシンーフィブリンゲル混合アクチュエータ
Actomyosin–fibrin gel composite actuator mimicking contraction mechanism of skeletal muscle extracellularly
**Takuro Kawasumi**[1], Koki Yoshida[2], Yuichi Hiratsuka[3], Hiroaki Onoe[1] ([1]*Keio University*, [2]*Shibaura Institute of Technology*, [3]*Japan Advanced Institute of Science and Technology*)

3Pos072 情報熱力学による $F_1$-ATPase 内の相互作用の実験的評価
Experimental evaluation of interactions within $F_1$-ATPase based on information thermodynamics
**Ken Takagi**[1], Yohei Nakayama[1], Chun-Biu Li[2], Stefano Bo[3], Takahiro Sagawa[4], Shoichi Toyabe[1] ([1]*Department of Applied Physics, Tohoku University, Japan*, [2]*Department of Mathematics, Stockholm University, Sweden*, [3]*Department of Physics, King's College London, United Kingdom*, [4]*Department of Applied Physics, The University of Tokyo, Japan*)

3Pos073 *Enterococcus hirae* V-ATPase の $Na^+$能動輸送を支える a サブユニットの 2 つのハーフチャネルの非対称な $Na^+$結合親和性
Asymmetric $Na^+$ binding affinities of two half-channels in a-subunit support active $Na^+$ transport of *Enterococcus hirae* V-ATPase
**Akihiro Otomo**[1,2], Yuan-E Lee[3,4], Juliette Lahore[5], Raymond Burton-Smith[2,3,4], Kano Suzuki[6], Takeshi Murata[6], Kazuhoshi Murata[2,3,4], Ryota Iino[1,2] ([1]*Institute for Molecular Science*, [2]*SOKENDAI*, [3]*ExCELLs*, [4]*National Institute for Physiological Sciences*, [5]*Chmie ParisTech*, [6]*Grad. Sch. Sci., Univ. Chiba*)

3Pos074 Elucidating Dynein Velocity Enhancement via Binding Affinity Modulation
**Haruki Kawase**[1,2], Kenta Ishibashi[2], Akane Furuta[2], Ken'ya Furuta[1,2] ([1]*The university of Osaka*, [2]*National institute of information and communications technology*)

## 15A. 細胞生物学的課題：接着／15A. Cell biology: Adhesion

3Pos075 アクチン架橋タンパク質による細胞間境界の力安定性維持機構
Actin Crosslinking Proteins Maintain Force Stability at Cell–Cell Boundaries
**Hiroki Katsuta**[1], Satoru Okuda[2], Nobutomo Fujimoto[3], Duc Doan Manh[1], Hiroaki Hirata[4], Keiji Naruse[1] ([1]*Faculty of Med. Dent. and Pharm Sci., Okayama Univ.*, [2]*Nano LSI, Kanazawa Univ.*, [3]*Dept. Med., Okayama Univ.*, [4]*Dept. Life Sci. and Biotech., KIT*)

3Pos076 Scale-dependent mechanobiological responses of focal adhesions
**Gento Takeshima**, Takumi Saito, Shinji Deguchi (*Grad. Sch. Eng. Sci.Univ. Osaka*)

3Pos077 歯周病菌の Fim 線毛先端タンパク質 FimE の C 末端領域の構造
Structure of the C-terminal region of FimE, a tip protein of the Fim pili from *Porphyromonas gingivalis*
**Hikaru Tanizaki**[1], Norihiro Takekawa[2], Katsumi Imada[2] ([1]*Sch. Sci., Osaka Univ.*, [2]*Grad. Sch. Sci., Osaka Univ.*)

## 15B. 細胞生物学的課題：運動／15B. Cell biology: Motility

3Pos078 Light-Guided Actin Dynamics Drives Protocell Migration
**Hideaki Matsubayashi**[1], Shiva Razavi[2], Daichi Nakajima[3], Hideki Nakamura[4], Tomoaki Matsuura[5], Shin-ichiro Nomura[3], Takanari Inoue[2] ([1]*Frontier Research Institute for Interdisciplinary Sciences (FRIS), Tohoku University*, [2]*School of Medicine, Johns Hopkins University*, [3]*Graduate School of Engineering, Tohoku University*, [4]*Hakubi Center for Advanced Research, Kyoto University*, [5]*Earth-Life Science Institute, Science Tokyo*)

3Pos079 Elucidating the role of *Spiroplasma* fibril protein using synthetic bacterium, JCVI syn3
**Ali Ahsan**, Hana Kiyama, Makoto Miyata (*Grad. Sch. Sci., Osaka Metropolitan Uni.*)

3Pos080 Manipulation of rotational direction of the archaeal flagella motor in *Halobacterium salinarum* by light modulation
**Jumpei Sega**[1], Masaki Mizutani[1], Daisuke Nakane[2], Takayuki Nishizaka[1] ([1]*Gakushuin University*, [2]*University of Electro-Communications*)

3Pos081 クラミドモナス鞭毛におけるマスティゴネマ線維の構造と機能
Strucutre and function of mastigoneme filaments in *Chlamydomonas* cilium
**Toshiki Yagi**, Ryuta Yoshizawa, Kakeru Komori (*Dept. Life and Env. Sci, Pref. Univ. Hiroshima*)

3Pos082 マイクロ構造体を用いた運動性を持つ微生物の運動方向の操作
Manipulation of the direction of movement of motile microbes using microstructures
**Masaru Kojima**[1], Mitsuhiro Horade[2] ([1]*Grad. Sch. Eng.Sci., The Univ. of Osaka*, [2]*Fac. of Sci. and Eng., Setsunan Univ.*)

3Pos083 機械的な力の付加による細胞集団運動の変化から機械走性メカニズムに迫る
Approaching the Mechanism of Mechanotaxis via Collective Cell Migration Induced by Mechanical Force Loading
**Chihori Asano**[1], Keitaro Shibata[2], Shigenobu Yonemura[2] ([1]*Grad. Sch. Med., Tokushima Univ.*, [2]*Grad. Sch. Biomed. Sci., Tokushima Univ.*)

3Pos084 Phototaxis and light-driven accumulation in wild isolates of *Heterosigma akashiwo*
**Naoki Uemura**[1], Shoko Ueki[2], Daisuke Nakane[1] ([1]*Dept. Eng. Sci., Univ. Electro-Communications*, [2]*Inst. Plant Sci. Res., Univ. Okayama*)

## 15C. 細胞生物学的課題：細胞骨格・膜骨格／15C. Cell biology: Cytoskeleton & Membrane skeleton

3Pos085 Dynamic response of keratin assemblies to thermal stress in mutant keratinocytes implicated in Epidermolysis bullosa simplex
**Doyin Rachael Abiola**[1], Tetsuya Kitaguchi[2], Birgitte E. Lane[3], Madoka Suzuki[1] ([1]*Inst. Protein Res., Univ. Osaka*, [2]*Inst. Integr. Res., Sci. Tokyo*, [3]*SRIS, Singapore*)

3Pos086 植物左右ねじれ伸長創発メカニズムの解明
Elucidating the mechanisms of plant chiral growth
**Eiki Meguro**[1], Masayoshi Nakamura[2], Toshifumi Mori[3] ([1]*Grad. Sch. Sci., Nagoya Univ.*, [2]*Grad. Sch. Sci. and Eng., Saitama Univ.*, [3]*Institute for Materials Chemistry and Engineering, Kyushu Univ.*)

3Pos087 出芽酵母アクチンフィラメントの in situ 構造解析に向けた取り組み
Towards in situ Structural Analysis of Actin Filaments in Budding Yeast
**Hiroko Takazaki**[1], Kana Shimamoto[1,2], Stephen Mwaniki[1], Misaki Arie[1], Akira Shinohara[1], Takayuki Kato[1] ([1]*IPR., Univ. Osaka*, [2]*Grad. Sch. Sci., Univ. Osaka*)

3Pos088 ケモメカニカルモデルによる焦点接着斑とアクトミオシン動態の解析
Chemomechanical Model of Focal Adhesion–Actomyosin Dynamics
**Eiji Matsumoto**, Shinji Deguchi (*Graduate School of Engineering Science, The University of Osaka*)

3Pos089 分子シャペロン αBークリスタリンはチューブリン凝集を抑え微小管会合活性を維持する
The molecular chaperone αB-crystallin delays thermal aggregation of tubulin and maintains microtubule polymerization activity
**Shinya Horinouchi**[1,2], Daisuke Inoue[3], Shohei Yamamoto[4], Eri Fujita[5], Miho Shimizu[2], Toshiyuki Watanabe[1], Yoriko Atomi[2] ([1]*Grad. Sch. of Eng., Tokyo Univ. Agric. and Technol.*, [2]*ACRO, Teikyo Univ.*, [3]*Faculty of Design, Kyushu Univ.*, [4]*Grad. Sch. of Pharmaceutical Sci., The University of Tokyo*, [5]*Faculty of Medical Tech., Teikyo Univ.*)

3Pos090 生細胞内における力伝播
Force propagation inside a living cell
**Ayama Tokuyasu**, Hirokazu Tanimoto (*Graduate School of Nanobioscience., Univ. Yokohama city*)

## 15D. 細胞生物学的課題：情報伝達・細胞膜／15D. Cell biology: Signal transduction & Cell membrane

3Pos091 High Hydrostatic Pressure Regulates the TGF-β Signaling Pathway
**Xinxuan Li** (*Okayama University*)

3Pos092 大腸菌のアレイブリンキングにおける活性伝搬の役割
The role of signal transduction in *E. coli* array blinking
**Kaho Yoshinari**, Yong-Suk Che, Akihiko Ishijima, Hajime Fukuoka, Yumiko Uchida (*Grad. Sch. Frontier Biosci. Univ. Osaka*)

3Pos093 大腸菌の走光性情報伝達の FRET 解析
Investigation of blue light-induced phototaxis in Escherichia coli using FRET
**Satomi Itoki**[1], Naoki Hidaka[3], Ikuro Kawagishi[1,2,3], Yoshiyuki Sowa[1,2,3] ([1]*Grad. Frontier Biosci., Hosei Univ*, [2]*Res. Cent. Micro-nano Tech., Hosei Univ*, [3]*Dept. Frontier Biosci., Hosei Univ*)

3Pos094 環状心筋細胞ネットワーク中の伝導障害部位による伝導変化
Conduction Changes at Sites of Conduction Defects in Circular Cardiomyocyte Network
**Moeno Furuya**[1], Momo Akada[2], Tomoyuki Kaneko[1,2] ([1]*FB. Hosei Univ.*, [2]*FB. Grad. Sch. Sci. &Eng., Hosei Univ.*)

3Pos095 近赤外線レーザー光による周期刺激に対する心筋細胞の応答
Cyclic responses of cardiomyocytes induced by periodic near-infrared laser stimulation
**Kanan Tominaga**, Takaaki Nishikawa, Tomoyuki Kaneko (*LaRC. FB. Hosei Univ.*)

3Pos096 心筋細胞と線維芽細胞を縞状に配置した心筋梗塞線維化モデル心筋細胞ネットワーク
Fibrotic heart model cardiomyocyte network with stripes of cardiomyocytes and fibroblasts
Yuna Honda, Kentaro Kito, **Tomoyuki Kaneko** (*LaRC, FB, Hosei Univ.*)

3Pos097 環状心筋細胞ネットワークにおける発火起点からの細胞外電位の振幅の変化
Variation of Extracellular Potential Amplitude in Circular Cardiomyocyte Network from Active Firing Origin
**Momo Akada**, Kentaro Kito, Tomoyuki Kaneko (*FB, Grad. Sch. Sci. & Eng., Hosei Univ.*)

3Pos098 高フレーム撮影による 2 つの心筋細胞の拍動同期解析
Analysis of two Cardiomyocytes beating synchronization with high-frame-rate imaging
**Sasa Shimizu**, Tomoyuki Kaneko (*LaRC, FB, Hosei Univ.*)

3Pos099 近赤外線レーザー照射による心筋細胞の FPD 評価
Variation in Field Potential Duration of cardiomyocytes induced by near-infrared laser irradiation
**Yuka Motoyama**, Tomoyuki Kaneko (*FB. Hosei Univ.*)

3Pos100 Single-molecule imaging analysis of mutual inhibition and positive feedback for Ras excitability in eukaryotic migrating cells
**Satomi Matsuoka**, Koji Iwamoto, Masahiro Ueda (*Grad. Sch. Frontier Biosciences, Univ. Osaka*)

## 16A. 生体膜・人工膜：構造・物性／16A. Biological & Artificial membrane: Structure & Property

3Pos101 脂質凝集体の脂質分子パッキングに対するスクラロースとスクロースの効果の比較
Comparison of the effects of sucralose and sucrose on the lipid molecular packing in lipid aggregates
**Yuki Homma**, Hiroshi Takahashi (*Grad. sch. Sci. Tech. Gunma Univ.*)

3Pos102 ハイドロゲルで被覆されたモデル生体膜アレイ
Model membrane array sealed with a hydrogel layer
**Masako Fujii**[1], Kenichi Morigaki[1,2] ([1]*Grad. of Agri. Sci., Kobe Univ.*, [2]*Biosignal Res. Ctr., Kobe Univ.*)

3Pos103 バイオフィルム脱離因子 DspI が関連する膜リモデリングは緑膿菌バイオフィルムにおける細胞外小胞形成を誘発する
Membrane remodeling by a biofilm dispersion factor DspI enhances vesicle formation in *Pseudomonas aeruginosa* biofilms
**Mizuki Kanno**[1], Hiroyuki Futamata[1,2,3], Yosuke Tashiro[1,2] ([1]*Grad. Sch. Sci. Tech., Shizuoka Univ.*, [2]*Grad. Sch. Integr. Sci. Tech., Shizuoka Univ.*, [3]*Res. Inst. Green Sci. Tech., Shizuoka Univ.*)

3Pos104 人工膜とナノ空間を用いた生体分子・膜小胞解析技術の開発
Analyzing biomolecules and vesicles using model membranes and nanometric gap junction
**Yu Yoshimura**[1], Nanami Nagatsuka[1], Taisei Higashihara[1], Rinshi S. Kasai[2], Kenichi G.N. Suzuki[2,3], Kenichi Morigaki[4] ([1]*Grad. Sch. Agri., Kobe Univ.*, [2]*National Cancer Center Japan*, [3]*iGCORE., Gifu Univ.*, [4]*Biosignal Research Center., Kobe Univ.*)

3Pos105 粗視化分子動力モデルによる SARS-CoV-2 エンベロープ膜の構造と形成の探索
Exploring SARS-CoV-2 envelope structure and formation by coarse-grained molecular dynamics simulation
**Ryo Urano**, Wataru Shinoda (*Okayama Univ. RIIS*)

## 16B. 生体膜・人工膜：ダイナミクス／16B. Biological & Artificial membrane: Dynamics

3Pos106 Curcumin and its derivatives modulate membrane domains and induce IL-6 receptor shedding in monocytes
**Toshiyuki Murai**[1], Yoshikazu Masaki[2], Kazuma Yasuhara[2] ([1]*Grad. Sch. Med., Osaka Univ.*, [2]*Grad. Sch. Sci. Tech., NAIST*)

3Pos107 微細穴にマニュピレートしたヒト培養細胞と基板支持脂質膜間の脂質移行の促進
Enhanced Lipid Transfer Between Micropore-Manipulated Human Cells and Supported Lipid Bilayers
**Asahi Gono**[1], Takayuki Nakaya[2], Reibun Sakane[2], Naoki Shimura[2], Takashi Okuno[3,4] ([1]*Grad. Sch. Sci., Univ. Yamagata*, [2]*Orbray CO., Ltd.*, [3]*Fac. Sci., Univ. Yamagata*, [4]*CID, Univ. Yamagata*)

3Pos108 反応拡散方程式に基づく真核細胞の小胞体におけるタンパク質ドメイン形成に関する数理モデル
Modeling the formation of protein domains on the endoplasmic reticulum in eukaryotic cells with reaction-diffusion equations
**Tomoyo Nishigaki**, Masashi Tachikawa (*Grad. Sch. of Nanobiosci., Yokohama City Univ.*)

3Pos109 無細胞合成されたタンパク質における疎水領域の長さとアミノ酸配列が引き起こすリポソームのエンドサイトーシス様の分裂
Endocytosis-like fission of liposomes induced by the length of hydrophobic domains in cell-free synthesized proteins
**Aika Yamamoto**, Yuki Nagai, Koki Kamiya (*Grad. Sch. Sci. &Tech., Gunma Univ.*)

## 16C. 生体膜・人工膜：興奮・チャネル／16C. Biological & Artificial membrane: Excitation & Channels

3Pos110 Development of a simple method for the reconstitution of ion channels using agarose gel beads
**Mami Asakura[1,2]**, Kohta Takagi[3], Miho Ohnishi[3], Minako Hirano[2], Toru Ide[2] ([1]*Dept. of Comp. Tech. Soln., Okayama Univ.*, [2]*Grad. Sch. Health Sys., Okayama Univ.*, [3]*Fac. Eng., Okayama Univ.*)

3Pos111 脂質-オレオシン非対称膜小胞の内膜湾曲による機械刺激依存性チャネルを介した物質輸送
Molecular transportation via mechanosensitive channel in response to membrane curvature of the asymmetric lipid-oleosin vesicles
**Kotaro Baba**, Koki Kamiya (*Grad. Sch. Sci & Tech, Gunma Univ.*)

## 16D. 生体膜・人工膜：輸送・情報伝達／16D. Biological & Artificial membrane: Transport & Signal transduction

3Pos112 脂質膜で隔てられた DNA 振動子の結合に関する研究
Coupling of DNA oscillators separated by lipid membranes
**Kazumo Takahashi[1]**, Keita Abe[1], Hideaki Matsubayashi[2], Shinichiro Nomura[1], Ibuki Kawamata[3], Satoshi Murata[1] ([1]*Department of Robotics, Graduate School of Engineering, Tohoku University*, [2]*Frontier Research Institute for Interdisciplinary Sciences, Tohoku University*, [3]*Division of Physics, Graduate School of Science, Kyoto University*)

3Pos113 Membrane Translocation of Nucleic Acids via Cholesterol-modified DNA Hybridization
**Rinka Aoki**, Satoshi Murata, Hideaki Matsubayashi, Keita Abe, Shin-ichiro M. Nomura (*Grad. Sch. Eng., Univ. Tohoku*)

## 17. 化学受容／17. Chemoreception

3Pos114 コレラ菌セロトニン走性受容体の同定および機能解析
Identification and characterization of the serotonin chemoreceptor in *Vibrio cholerae*
**Fuga Omori[1]**, Sotaro Asaoka[1], Hirotaka Tajima[2,3], Ikuro Kawagishi[1,2,3] ([1]*Grad. Sch. Sci. and Engin., Hosei Univ*, [2]*Fac. of Biosci. and Appl. Chem., Hosei Univ*, [3]*Res. Cent. for Micro-Nano Tech., Hosei Univ*)

## 18. 神経・感覚（細胞・膜タンパク質・分子）／18. Neuroscience & Sensory systems

3Pos115 GPCR-mediated signaling in heat tolerance of C. elegans
**Shiori Mototake[1,2]**, Yuki Sato[1,2], Kohei Ohnishi[1,2,3], Tohru Miura[1,2,3], Akane Ohta[1,2,3], Atsushi Kuhara[1,2,3,4] ([1]*Dept. Biol., Facul. Sci & Engineer. Konan Univ.*, [2]*Dept. Biol. Grad. Sch. Sci. Konan Univ.*, [3]*Inst. of Integral NeuroBiol. Konan Univ.*, [4]*PRIME AMED*)

3Pos116 培地中 Na+上昇による神経活動変化
Neural Activity by Increasing Concentration of Sodium Ion in Culture Medium
**Kaito Watanabe[1]**, Takumi Yamaguchi[2], Tomoyuki Kaneko[1,2] ([1]*LaRC.FB.Hosei Univ*, [2]*LaRC.FB.Grab.Sch.Sci.&Eng.,Hosei Univ.*)

3Pos117 The synaptic vesicle cluster restricts the diffusion of cytosolic α-Synuclein via boundary confinement

**Kye Kudo**[1], Adekunle T. Bademosi[1], S. Sean Millard[2], Frédéric A. Meunier[1,2] ([1]*Queensland Brain Institute, The University of Queensland*, [2]*School of Biomedical Sciences, Faculty of Medicine, The University of Queensland*)

## 19. 神経回路・脳の情報処理／19. Neuronal circuit & Information processing

3Pos118 ヨーロッパモノアラガイの味覚嫌悪学習に関係する CGC の mGluR を介した抑制作用
Metabotropic glutamate receptor–mediated inhibition of CGCs associated with conditioned taste aversion memory in *Lymnaea*

**Yoshimasa Komatsuzaki**[1], Samui Chiba[1], Ayaka Itoh[2], Ken Lukowiak[3], Minoru Saito[2] ([1]*Grad. Sch. Sci. and Tech, Nihon Univ.*, [2]*Grad. Sch. Integ. Basic. Sci., Nihon Univ.*, [3]*Univ of Calgary, Calgary*)

3Pos119 mGluR1 と GHS-R1a のクロストークによる小脳シナプス可塑性の制御
Cross-talk between mGluR1 and GHS-R1a signaling modulates cerebellar synaptic plasticity

**Moritoshi Hirono**[1], Boyang Zhang[1], Hiroshi Hosoda[2], Masanori Nakata[1] ([1]*Dept. Physiol., Wakayama Med. Univ.*, [2]*Dept. Mol. Pathophysiol., Shinshu Univ.*)

## 20. 行動／20. Behavior

3Pos120 流れ刺激に対するハルテリアの逃避遊泳行動
Flow-induced escape behavior of *Halteria* sp.

**Koki Kanda**[1], Yukinori Nishigami[1,2], Takuya Ohmura[1,2], Katsuhiko Sato[3], Toshiyuki Nakagaki[1,2] ([1]*Graduate School of Life Science, Hokkaido University*, [2]*Research Institute for Electronic Science, Hokkaido University*, [3]*Faculty of Science, University of Toyama*)

## 21A. 光生物：視覚・光受容／21A. Photobiology: Vision & Photoreception

3Pos121 Uncovering light-sensitive mechanism of non-visual opsins

**Seiwa Nakamura**[1], Asato Kojima[1], Kazuhiro Kobayashi[2], Masahiro Fukuda[2], Koki Kawakami[2], Suhyang Kim[2], Takashi Nagata[3], Kota Katayama[4,5], Hideki Kandori[4,5], Keiichi Inoue[3], Hideaki E. Kato[2,6] ([1]*Grad. Sch. Art. Sci., Univ. Tokyo*, [2]*RCAST, Univ. Tokyo*, [3]*ISSP, Univ. Tokyo*, [4]*Life Sci. Appl. Chem., Grad. Sch. Eng., Nagoya Inst. Tech.*, [5]*OptoBio Tech. Res. Cent.*, [6]*Grad. Sch. of Sci, Univ. Tokyo*)

3Pos122 A Structural Approach to the Potassium-Selective Channelrhodopsin HcKCR1 for Its Development as an Optogenetic Tool

**Seiya Tajima**[1], Seiwa Nakamura[2], YoungJu Jo[3,4], Joseph J. Noh[3,5], Peter Y. Wang[3], Antonia Drinnenberg[3], Chelsea Li[3], Masatoshi Inoue[3], Masaki Tsujimura[6], Eamon F. X. Byrne[3], Thanh-Nga C. Shenoy[3], Sung-Soo Jang[7], Ki Eun Pyo[3], Nadya Andini[3], Jenny Shi[3], Kishandra A. Patron[3], Joseph M. Paggi[8], Masahiro Fukuda[1], Yuma Ito[9], Masahiro Sugiura[9], Kota Katayama[9,10], Yuji Furutani[9,10], Hisako Ikeda[1], Charu Ramakrishnan[11], Linlin Z. Fan[3], Sean Quirin[3], Hiroshi Ishikita[1,6], John R. Huguenard[7], Hideki Kandori[9,10], Ron O. Dror[5,8,12], Yoon Seok Kim[3], Karl Deisseroth[3,11,13], Hideaki E. Kato[1,2,14] ([1]*RCAST, Univ. Tokyo*, [2]*Grad. Sch. Arts. Sci., Univ. Tokyo*, [3]*Dept. Bioeng., Stanford Univ.*, [4]*Dept. Appl. Phys., Stanford Univ.*, [5]*Biophys. Prog., Stanford Univ.*, [6]*Grad. Sch. Eng., Univ. Tokyo*, [7]*Dept. Neurol. & Neurol. Sci., Stanford Univ.*, [8]*Dept. Comput. Sci., Stanford Univ.*, [9]*Dept. Life Sci. & Appl. Chem., Nagoya Inst. Technol.*, [10]*OptoBioTechnology Research Center, Nagoya Inst. Technol.*, [11]*CNC Prog., Stanford Univ.*, [12]*Inst. Comput. Math. Eng., Stanford Univ.*, [13]*Dept. Psychiatry & Behav. Sci., Stanford Univ*, [14]*Grad. Sch. Sci., Univ. Tokyo*)

3Pos123 低温ラマン分光法による $Cl^-$ポンプロドプシン(*Mastigocladopsis repens* 由来)の発色団構造変化の解明

Cryogenic Raman Study of Chromophore Structural Changes during the Photocycle of a Light-Driven $Cl^-$ Pump from *Mastigocladopsis repens*

**Kana Miyazaki**[1], Takashi Kikukawa[2], Masashi Unno[1], Tomotsumi Fujisawa[1] ([1]*Fac. Sci. Eng., Saga Univ.*, [2]*Fac. Adv. Life Sci., Hokkaido Univ.*)

3Pos124 細胞性粘菌の発生と細胞骨格に対するレチナールの影響

Effect of retinal on development and cytoskeleton in *D. discoideum*

**Shuhei Tsuchihashi**[1], Kazuki Akiyama[1], Yusuke V. Morimoto[2] ([1]*Grad. Sch. Comput. Sci. Syst. and Eng, Kyushu Inst. Tech.*, [2]*Grad. Sch. Comput. Sci. Syst. and Eng, Kyushu Inst. Tech.*)

3Pos125 有機溶媒中における微生物ロドプシンの物理化学的特性の解析

Comparative analysis of the physicochemical properties of microbial rhodopsins in organic solvents

**Miyu Inokuchi**[1], Keiichi Kojima[2], Yuki Sudo[2] ([1]*Grad. Sch. Med. Dent. & Pharm. Sci., Okayama Univ.*, [2]*Fac. Med, Dent & Pharm Sci., Okayama Univ.*)

3Pos126 微生物ロドプシンによる光駆動型有機アニオン輸送の発見

Discovery of light-powered organic anion transport by microbial rhodopsins

Simiao Shen[1], Kaisei Ohno[2], Takashi Tsukamoto[1,2,3], Kwang-Hwan Jung[4], Yuki Sudo[5], **Takashi Kikukawa**[1,2,3] ([1]*Grad. Sch. Life Sci., Hokkaido Univ.*, [2]*Sch. Sci., Hokkaido Univ.*, [3]*Fac. Adv. Life Sci., Hokkaido Univ.*, [4]*Dept. Life Sci. & Bionano Cent., Sogang Univ.*, [5]*Fac. Med., Dent. & Pharm. Sci., Okayama Univ.*)

3Pos127 一分子蛍光 in situ hybridization 法によるメダカ組織におけるオプシン発現細胞の解析

Single-Molecule FISH Analysis of Opsin-Expressing Cells in Medaka

**Keita Sato**, Hideyo Ohuchi (*Fac. Med, Dent & Pharm Sci., Okayama Univ.*)

3Pos128 Light Intensity-Dependent Reaction Dynamics of the Photoresponsive Enzyme MsLadC

**Dai Takeuchi**, Masahide Terazima, Yusuke Nakasone (*Grad. Sch. Sci., Kyoto Univ.*)

3Pos129 センサリーロドプシン II (SRII) からトランスデューサー (HtrII) への情報伝達におけるシグナリング中間体の同定

Identification of signaling states of sensory rhodopsin II (SRII) in the signal transduction to its cognate transducer protein (HtrII)

**Jun Tamogami**[1], Miki Takeguchi[1], Risa Matsunami-Nakamura[1], Takashi Kikukawa[2], Naoki Kamo[2], Toshifumi Nara[1] ([1]*College Pharm. Sci., Matsuyama Univ.*, [2]*Fac. Adv. Life Sci., Hokkaido Univ.*)

3Pos130 高速原子間力顕微鏡を用いた植物光合成膜におけるタンパク質複合体のダイナミクス解析
Analysis of protein complex dynamics in plant photosynthetic membranes by high-speed atomic force microscopy
**Yudai Nishitani**, Daisuke Yamamoto (*Fac. Sci., Fukuoka Univ.*)

3Pos131 機械学習を用いた光合成タンパク質複合体における環境適応アミノ酸残基の推定
Estimating environmentally adaptive residues in photosynthetic complexes using machine learning
**Atsushi Hijikata[1]**, Ryuhei Minei[2], Satoshi Omori[2], Yuko Tsuchiya[3], Tsuyoshi Shirai[2] ([1]*Tokyo Univ. of Pharm. Life Sci.*, [2]*Nagahama Inst. Bio-Sci. Tech.*, [3]*AIST*)

3Pos132 暗発酵および光発酵による最適化
Optimization by dark and photo fermentation
**Masahiro Hibino**, Kousei Miyamoto (*Div. Sust. Enviro. Eng., Muroran Inst. Tech.*)

3Pos133 光合成タンパク質超複合体の空間分解分光にむけた超解像吸収顕微鏡の開発
Super-resolution absorption microscopy toward spatially-resolved spectroscopy of photosynthetic protein supercomplexes
**Yoshihiro Tojo[1,2]**, Tomomi Inagaki[3], Chihiro Azai[4], Toru Kondo[2,5] ([1]*Dept. of Life Sci. Tech., Science Tokyo*, [2]*NIBB*, [3]*Grad. Sch. of Life Sciences, Ritsumeikan Univ.*, [4]*Grad. Sch. of Sci. Eng., Chuo Univ.*, [5]*ExCELLS*)

3Pos134 網羅的単一分子分光を用いた光阻害修復途上光化学系 II の観測
Observation of photosystem II under repair from photoinhibition by exhaustive single-molecule spectroscopy
**Kyosuke Watanabe**, Shen Ye, Yutaka Shibata (*Graduate school of science, Tohoku Univ.*)

3Pos135 Localization of auxiliary proteins of LHC assembly during its insertion into thylakoid membrane
**Yuiki Shimamura[1]**, Hiroshi Kuroda[2], Yuichiro Takahashi[2], Shen Ye[3], Yutaka Shibata[3] ([1]*Grad. Sch. Sci., Tohoku Univ.*, [2]*Research Institute for Interdisciplinary Science, Okayama University*, [3]*Grad. Sch. Sci., Tohoku Univ.*)

3Pos136 重合脂質膜鋳型法による再構成チラコイド膜のタンパク質込み合いの評価
Evaluation of protein crowding in reconstituted thylakoid membrane supported by polymerized lipid membranes
**Hayata Sakai[1]**, Koki Takagi[2], Kenichi Morigaki[3], Shen Ye[1], Yutaka Shibata[1] ([1]*Graduate School of Science Tohoku Univ.*, [2]*Agricultural Science, Graduate School of Kobe Univ*, [3]*Graduate School of Biosignal Reserch Center Kobe Univ.*)

3Pos137 一分子時間分解蛍光分光測定による光合成光捕集アンテナ複合体のエネルギー移動解析
Single-molecule time-resolved fluorescence spectroscopy of energy transfer in photosynthetic antenna complex
**Shinnosuke Masuda[1,2,3]**, Mai Watanabe[4], Toru Kondo[1,2,3] ([1]*SOKENDAI*, [2]*NIBB*, [3]*ExCELLS*, [4]*Dept. of Science, Tokyo Metropolitan Univ.*)

## 21C. 光生物：光遺伝学・光制御／21C. Photobiology: Optogenetics & Optical control

3Pos138 *Oscillatoria acuminata* 由来の光活性化アデニル酸シクラーゼの C 末端領域による活性制御機構の解明
The role of the C-terminal region in regulating the activity of the photoactivated adenylyl cyclase from *Oscillatoria acuminata*
**Reito Yasui**[1], Masahiko Taguchi[2,3], Syun Sakuraba[4,5], Masumi Takebe[6], Saiko Akizuki[1], Mami Asakura[1,7], Akiya Hukuda[2], Eriko Nango[2,3,8], Hidetoshi Kono[4,5], Toru Ide[1], Minako Hirano[1] ([1]*Graduate School of Interdisciplinary Science and Engineering in Health Systems, Okayama University*, [2]*Graduate School of Science, Tohoku University*, [3]*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University*, [4]*Institute for Quantum Life Science, National Institutes for Quantum Science and Technology*, [5]*Center of Quantum Life Science for Structural Therapeutics, Chiba University*, [6]*Hamamatsu Photonics K.K.*, [7]*Dept. of Comp. Tech. Soln., Okayama Univ.*, [8]*International Center for Synchrotron Radiation Innovation Smart, Tohoku University*)

3Pos139 光活性化アデニル酸シクラーゼの活性調節機構の解明
Regulatory mechanism of photoactivated adenylyl cyclase activity
**Hinase Kondo**[1], Masahiko Taguchi[2,3], Syun Sakuraba[4,5], Masumi Takebe[6], Koki Shimomae[1], Mei Kawamoto[1], Mami Asakura[1,7], Akiya Hukuda[2], Eriko Nango[2,3,8], Hidetoshi Kono[4,5], Toru Ide[1], Minako Hirano[1] ([1]*Grad. Sch. Health Sys., Okayama Univ.*, [2]*Graduate School of Science, Tohoku Univ.*, [3]*IMRAM, Tohoku Univ*, [4]*iQLS, QST*, [5]*cQUEST, Chiba Univ.*, [6]*Hamamatsu Photonics K.K.*, [7]*Dept. of Comp. Tech. Soln., Okayama Univ.*, [8]*SRIS, Tohoku Univ.*)

3Pos140 リジン主鎖同位体標識ロドプシンの赤外分光解析
FTIR Analysis of microbial rhodopsins with $^{15}$N-labeled lysine backbone
**Mako Ooka**[1], Tatsuro Nishikino[1,2], Teppei Sugimoto[1], Yuma Ito[1], Yuji Furutani[1,2], Hideki Kandori[1,2] ([1]*Graduation school of Engineering, Nagoya institute of technology*, [2]*OptoBio Technology Research Center, Nagoya institute of technology*)

3Pos141 低温赤外分光法によるウイルス由来カチオンチャネルロドプシンの構造解析
Structural analysis of viral cation channelrhodopsin using low-temperature FTIR spectroscopy
**Mako Aoyama**[1], Kota Katayama[1,2], Hideki Kandori[1,2] ([1]*Grad. Sch. Eng., Nagoya Inst. Tech.*, [2]*Nagoya Inst. Tech., OptoBioTechnology Research Center*)

3Pos142 短波長応答チャネルロドプシン KnChR の分子機能
Unraveling the Functional Mechanism of KnChR: A Short-Wavelength Absorbing Cation Channelrhodopsin
**Satoshi Tsunoda**[1,2], Koki Natsume[1], Yuzhu Wang[3], Tatsuki Tanaka[3], Shoko Hososhima[1,2], Wataru Shihoya[4], Osamu Nureki[3], Hideki Kandori[1,2] ([1]*Grad. Sch. Eng., Nagoya Institute of Technology*, [2]*OptoBio Technology Research Center, Nagoya Institute of Technology*, [3]*Grad. Sch. Sci., The University of Tokyo*, [4]*Keio University School of Medicine*)

3Pos143 Photocontrol of GTPase Cycle of the small G-protein H-Ras using its regulator RASGRF1 with photochromic moleculer devices
**Isra Lilatul**, Nobuyuki Nishibe, Shinsaku Maruta (*Grad.Sch.Sci.Eng.,Univ.Soka*)

## 23. 生命の起源・進化／23. Origin of life & Evolution

3Pos144 ペプチド液滴による原始的な自己区画の確立
Establishment of Primitive Self-Compartments with Peptide-Droplets
**Yota Tabata**, Tomoyuki Kaneko (*FB, Grad. Sch. Sci. & Eng., Hosei Univ.*)

3Pos145 ベイズ学習と統計力学による進化の理論：タンパク質を例に
An Evolutionary Theory Based on Bayesian Learning and Statistical Mechanics: The Case of Proteins
**Tomoei Takahashi**[1], George Chikenji[2], Kei Tokita[3], Yoshiyuki Kabashima[1] ([1]*Inst. for Physics of Intelligence, Grad. Sch. of Sci., The Univ. of Tokyo*, [2]*Grad. Sch. of Eng., Nagoya Univ.*, [3]*Grad. Sch. of Inf., Nagoya Univ.*)

3Pos146 微生物進化実験を用いた進化可能性ランドスケープと増殖ー死滅トレードオフの定量
Quantifying Evolutionary Landscapes and the Growth–Death Trade-off in Microbial Experimental Evolution
Atsushi Shibai[1], Riku Kamiura[1], Shumpei Sato[1], Shigeyuki Kakizawa[3], **Chikara Furusawa**[1,2] ([1]*BDR, RIKEN*, [2]*UBI, Univ. Tokyo*, [3]*AIST*)

## 24. 合成生物学・人工細胞／24. Synthetic biology & Artificial cells

3Pos147 ミニマル合成細菌 syn3B のゲノムサイレンシング
Silencing a genome of minimal synthetic bacterium syn3B
**Hana Kiyama**[1], Sohkichi Matsumoto[2], Makoto Miyata[1,3] ([1]*Grad. Sch. Sci., Osaka Metropolitan Univ.*, [2]*Grad. Sch. Med., Niigata Univ.*, [3]*OCARINA, Osaka Metropolitan Univ.*)

3Pos148 ミニマル合成細菌 syn3B のゾンビと生き返り
Zombie cells and revival of minimal synthetic bacterium syn3B
**Nanase Oda**[1], Hana Kiyama[1], Yuhei O Tahara[1,2], Masaki Mizutani[3], Shigeyuki Kakizawa[4], Makoto Miyata[1,5] ([1]*Grad. Sch. Sci., Osaka Metropolitan Univ.*, [2]*Grad. Sch. Eng., Osaka Metropolitan Univ.*, [3]*Dept. Phys., Gakushuin Univ.*, [4]*MolBiS, AIST*, [5]*OCARINA, Osaka Metropolitan Univ.*)

3Pos149 Myosin distribution and the deformation and behavior of the droplets formed by phase separation
**Tatsuyuki Waizumi**[1], Hiroki Sakuta[2], Mahito Kikumoto[1], Kanta Tsumoto[3], Kingo Takiguchi[1], Kenichi Yoshikawa[4] ([1]*Grad. sch. Sci., Univ. Nagoya*, [2]*Grad. Sch. Arts and Sci., Univ. Tokyo*, [3]*Grad. Sch. Eng., Univ. Mie*, [4]*Sci Ctr. Self-Organization., Univ. Doshisha*)

3Pos150 Scalable preparation of GUVs using freeze-dried gelatin gel
**Takumi Furusawa**[1], Keita Abe[1], Hideaki Matsubayashi[2], Satoshi Murata[1], Shin-Ichiro Nomura[1], Richard James Archer[3] ([1]*Department of Robotics, Graduate School of Engineering, Tohoku University*, [2]*Frontier Research Institute for Interdisciplinary Sciences, Tohoku University*, [3]*Department of Computer Science, School of Computing, Institute of Science Tokyo*)

3Pos151 巨大リポソーム内でのクラミドモナスの片腕変異株の運動解析
Motion Analysis of Uniflagellate *Chlamydomonas* Mutants inside Giant Liposomes
**Yuka Matsukawa**[1], Koichiro Akiyama[2], Masahito Hayashi[3], Tomoyuki Kaneko[1,2] ([1]*LaRC, FB, Hosei Univ.*, [2]*LaRC, FB. Grad. Sch. Sci. &Eng., Hosei Univ.*, [3]*Dept. Biotech. Life Sci., Tokyo Univ. Agri. Tech.*)

3Pos152 クラミドモナス封入リポソームの運動能力の解明に向けた微小物質の共封入
Co-encapsulation of Micro-objects in *Chlamydomonas*-Encapsulated Liposomes for Motility Characterization
**Hiromasa Shiraiwa**[1], Koichiro Akiyama[1], Shunsuke Shiomi[1], Masahito Hayashi[1,2], Tomoyuki Kaneko[1] ([1]*LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ.*, [2]*Dept. Biotech. Life Sci., Tokyo Univ. Agri. Tech.*)

3Pos153 リン脂質添加による細胞モデル液滴の界面張力変化
Interfacial Tension Changes of Cell-Mimicking Droplets Induced by Phospholipid Addition
**Sota Miura**, Koichiro Sadakane (*Grad. Sch. Life and Med Sci., Doshisha Univ.*)

3Pos154 Insights into Gel-in-Giant Unilamellar Vesicle System as Artificial Cell Model
**Wancheng Zhang**[1], Aileen Cooney[2], Lorenzo Di Michele[3], Yuval Elani[2], Tomoaki Matsuura[1] ([1]*Earth-Life Science Institute, Institute of Science Tokyo*, [2]*Department of Chemical Engineering, Imperial College London*, [3]*Department of Chemical Engineering and Biotechnology, University of Cambridge*)

3Pos155 PEG/DEX 系における相分離に対するリン脂質・界面活性剤等の影響：光散乱測定を用いた解明
Effects of Phospholipids, Surfactants, etc. on Phase Separation in PEG/DEX Systems: Elucidation Using Light Scattering
**Ryuya Bamba**, Koichiro Sadakane (*Grad. Sch. Life and Med Sci., Doshisha Univ.,*)

## 25. ゲノム生物学／25. Genome biology

3Pos156 膜タンパク質の膜—内外領域における同義コドン使用頻度解析：原核ー真核生物の比較
Synonymous Codon Usage Comparison in Membrane Protein Inner/Extra transmembrane Regions Between Prokaryotes and Eukaryotes
**Riki Haida**[1], Makiko Suwa[1,2], Kenji Etchuya[2] ([1]*Biological Science Course, Graduate School of Science and Engineering, Aoyama Gakuin University, Kanagawa, Japan*, [2]*Chem. Biological Science Course, Department. Science and Engineering, Aoyama Gakuin University, Kanagawa, Japan*)

## 26A. 計算生物学: 生命情報学／26A. Computational biology: Bioinformatics

3Pos157 Evaluating Protein Generative AI for Exploring Uncharted Sequence Space
**Hafumi Nishi**[1,2,3] ([1]*Grad. Sch. Info. Sci., Tohoku Univ.*, [2]*Fac. Core. Res, Ochanomizu Univ.*, [3]*ToMMo, Tohoku Univ.*)

3Pos158 Structure prediction of protein complexes using cross-linking mass-spectrometry data with the estimated error rate
**Hiroto Matsubara**, Takaharu Mori (*Tokyo University of Science*)

3Pos159 EpiLoop：説明可能なグラフ・トランスフォーマーによる細胞特異的クロマチンループのストライプ型／ドット型識別と分類
EpiLoop: explainable graph transformer for identifying and classifying cell-specific chromatin loops into stripe or dot structures
**Bingxin Xie**[1,2], Yuichi Taniguchi[1,2,3] ([1]*Grad. Sch. Biostudies, Kyoto Univ.*, [2]*iCeMS, Kyoto Univ.*, [3]*Inst. for Advanced Study, Kyoto Univ.*)

3Pos160 金属イオン結合部位を予測する機械学習モデルの開発
Development of Machine Learning Models for Predicting Metal Ion-binding Sites
Yamato Maehara, **Masafumi Shionyu** (*Grad. Sch. Biosci, Nagahama Inst. Bio-Sci. and Tech.*)

3Pos161 アルツハイマー病特異的タウ線維構造の Inverse folding
Inverse folding of Alzheimer disease-specific tau filaments
**Motoharu Tajitsu**[1], Maria Kano[2], Taeko Kimura[2], Sakura Homma[1], Taisuke Tomita[2], Yasuhiro Matsunaga[1,3] ([1]*Grad. Sch. Sci. Eng., Saitama Univ.*, [2]*Grad. Sch. Pharm. Sci.,Tokyo Univ.*, [3]*RIKEN*)

3Pos162 環境変化と損傷に対するロバストネスの進化
Evolution of Robustness to Environmental Change and Damage
**Mao Sakae** (*Ritsumeikan LifeScience*)

3Pos163 The Impact of Environmental Factors on the Predatory Behavior of Marine Organisms
**Haruki Kawakami** (*Ritsumeikan university*)

3Pos164 深層学習を用いた筋小胞体形態と $Ca^{2+}$濃度の関係の解析
Analysis of the relationship between sarcoplasmic reticulum morphology and $Ca^{2+}$ concentration using deep learning
**Katsuya Saito**[1], Kenji Etchuya[2], Jun Nakamura[3], Chikara Sato[1,3,4,5], Makiko Suwa[1,2] ([1]*Biol. Sci., Grad. Sch. Sci. Eng., Aoyama Gakuin Univ.*, [2]*Chem. Biol. Sci., Dept. Sci. Eng., Aoyama Gakuin Univ.*, [3]*Natl. Inst. Adv. Ind. Sci. Techno. (AIST)*, [4]*Div. Immune Homeostasis, Dept. Pathol. Microbiol., Nihon Univ. Sch. Med.*, [5]*Div. Microbiol., Dept. Pathol. Microbiol., Nihon Univ. Sch. Med.*)

3Pos165 ヌクレオチド三リン酸の長時間結合は細胞質中の蛋白質間相互作用を抑制する
Prolonged Bindings of Nucleoside Triphosphates Reduces Protein-Protein Interaction in Cytoplasm
**Isseki Yu**[1], Michael Feig[2], Yuji Sugita[3] ([1]*Maebashi Institute of Technology*, [2]*Michigan State Univ.*, [3]*Riken*)

3Pos166 光応答性膜モジュレータ分子の分子動力学シミュレーション
Molecular Dynamics of Light-Responsive Twistable Membrane Modulators
**Reo Kadowaki**[1], Huo Wenting[2], Koji Miki[2], Kouichi Ohe[2], Wataru Shinoda[3] ([1]*Grad. Sch. Env. Life and Nat. Sci., Univ. Okayama*, [2]*Grad. Sch. Eng. Sci., Univ. Kyoto*, [3]*Res. Inst. Interdiscip. Sci., Univ. Okayama*)

3Pos167 Binding free energy shift of Barnase-Barstar complex due to single and double mutations
**Kazutomo Kawaguchi**, Hidemi Nagao (*Inst. Sci. Eng., Kanazawa Univ.*)

3Pos168 Molecular Dynamics Study of Potential Inhibitors Targeting VP28 from White Spot Syndrome Virus in Tiger Shrimp
**Fachruddin Hari Anggara Putera**, Kazutomo Kawaguchi, Hidemi Nagao (*Graduate School of Natural Science and Technology, Kanazawa University*)

3Pos169 MD シミュレーションによる脂質フリッパーゼ MurJ の構造変化とイオン相互作用の解析
Analysis of Structural Changes and Ion Interactions of the Lipid Flippase MurJ by Molecular Dynamics Simulations
**Keina Murata**, Takaharu Mori (*Tokyo Univ. of Science*)

3Pos170 Investigation of the Reason Why Ornithine Was Excluded from the Proteinogenic Amino Acids by Quantum Chemical Calculations
**Ayato Mizuno**[1], Tomoki Nakayoshi[1,2], Koichi Kato[1,3], Akifumi Oda[1,4] ([1]*Grad. Sch. Pharm., Meijo Univ.*, [2]*Inst. Adv. Res., Nagoya Univ.*, [3]*Fac. Pharm. Sci., Shonan Univ. Med. Sci.*, [4]*Inst. Protein Res., Osaka Univ.*)

3Pos171 MD 計算によるタンパク質透過チャネル SecY と分泌モニタータンパク質 VemP との相互作用解析
Elucidating the interactions between the protein-conducting channel SecY and translocating VemP via steered MD simulations
**Shunsuke Muraoka**[1], Hiroyuki Mori[2], Takaharu Mori[1] ([1]*Tokyo University of Science*, [2]*Kyoto University*)

3Pos172 分子動力学シミュレーションによる HaloKbp1a$_{635}$ 蛍光タンパク質の理論研究
Theoretical Study of HaloKbp1a$_{635}$ Fluorescence Protein Sensor by Molecular Dynamics Simulations
**Natthanan Kongchu**, Shigehiko Hayashi (*Grad. Sch. Sci., Kyoto Univ.*)

3Pos173 Analysis of water dynamics around antifreeze proteins by molecular dynamics simulations
**Shinnosuke Nakamura**[1], Nao Abe[1], Simon Hikiri[2], Takuya Takahashi[2] ([1]*Grad. Sch. Life Sci., Ritsumeikan Univ.*, [2]*Coll. Life Sci., Ritsumeikan Univ.*)

3Pos174 カーボンドットとがん細胞膜脂質との相互作用に関する Steered 分子動力学シミュレーション
Steered Molecular Dynamics Study of Carbon Dot Interactions with Cancer Cell Membrane Lipids
**Atsunori Yuki** (*Grad. Sch. Bioinformatics. Ritsumeikan University. Shiga*)

3Pos175 水中およびクロロホルム中における鎖状と環状のグリシンペプチドに関する立体構造集団解析
Conformational ensembles of linear and cyclic glycine peptides in water and chloroform
**Koji Umezawa**[1,2], Yoshiyuki Yamaoka[1], Yuzuki Takase[1], Rei Kitajima[1], Jumpei Morimoto[3], Shinsuke Sando[3] ([1]*Agri., Shinshu Univ.*, [2]*Grad. Sch. of Sci. & Tech., Shinshu Univ.*, [3]*Grad. Sch. of Eng., Univ. of Tokyo*)

3Pos176 Thermal Modulation of NOMPC Gating Springs in Aedes aegypti: Insights from Comparative Modeling and MD Simulations

**Roberto Carlos Pestana Nobles**[1], Martin Pavlovich[1], YuMin M. Loh[1,2], Matthew P. Su[1,2,3], Azusa Kamikouchi[1,2], Osamu Miyashita[4], Florence Tama[1,2,4] ([1]*Institute of Transformative Bio-Molecules (ITbM), Nagoya University, Nagoya, Japan*, [2]*Graduate School of Science, Nagoya University, Nagoya, Japan*, [3]*Institute for Advanced Research, Nagoya University, Nagoya, Japan*, [4]*RIKEN Center for Computational Science, Kobe, Hyogo, Japan*)

3Pos177 Analysis of the Interconversion Mechanisms of “CO-in” and “CO-out” Conformations of Ferredoxin Using Molecular Dynamics Simulations

**Tomoki Nakayoshi**[1,2,3], Yusuke Ohnishi[4,5], Hideaki Tanaka[5], Genji Kurisu[5], Akifumi Oda[1], Yu Takano[2] ([1]*Fac. Pharm., Meijo Univ.*, [2]*Inst. Adv. Res., Nagoya Univ.*, [3]*Grad. Sch. Inf. Sci., Hiroshima City Univ.*, [4]*Core Facility Center, Univ. Osaka*, [5]*Inst. Protein Res., Univ. Osaka*)

3Pos178 Distinct Structural Responses of CRY1 and CRY2 to Small Molecule Binding: A Coarse-Grained Molecular Dynamics Simulation Study

**Ajeet Kumar Yadav**[1], Florence Tama[1,2,3] ([1]*Deaprtment of Physics, Nagoya University*, [2]*ITbM, Nagoya University*, [3]*Riken Center for Computational Science*)

3Pos179 Multiscale modeling of spatiotemporal heterogeneity in biomolecular condensates

**Eiji Yamamoto**[1], Kento Fujita[2], Yusuke Takagi[2], Youtaro Takeda[2] ([1]*Dept. Sys. Des. Eng., Keio Univ.*, [2]*Grad. Sch. Sci. Tech., Keio Univ.*)

3Pos180 High-throughput virtual screening and *de novo* design of functionalised nanographenes targeting the FAD binding site of CRY clock proteins

**Ben Cree**[1], Manami Hayashi[2], Masaya Hagai[2], Kazuhiro J. Fujimoto[2], Hideya Kono[4], Kazuma Amaike[4], Takeshi Yanai[2,3], Kenichiro Itami[4], Florence Tama[1,2,3] ([1]*Computational Structural Biology Research Team, RIKEN R-CCS*, [2]*Graduate School of Science, Nagoya University*, [3]*Institute of Transformative bioMolecules, Nagoya University*, [4]*Molecule Creation Laboratory, RIKEN*)

3Pos181 Temperature-Dependent Conformational Changes of Dengue Virus Envelop protein

**Dokainish Hisham**, Yoshimasa Takahashi (*Research Center for Vaccine Development, NIID, Japan Institute for Health Security*)

3Pos182 シスチン/グルタミン酸アンチポーター xCT 輸送体の基質輸送過程の分子シミュレーション
Molecular Simulation of Substrate Transport Mechanisms in the Cystine/Glutamate Antiporter xCT

**Ikumi Mizuno**, Kei Moritsugu (*Grad. Sch. Sci., OMU*)

3Pos183 ALS における SOD1 の構造動態・金属結合部位の反応性・毒性機構に関する理論的解析
Computational Insights into SOD1 Conformational Dynamics, Metal Site Reactivity, and Toxic Mechanisms in ALS

**Shun Fujimaki**[1], Shinya Tahara[2], Takakazu Nakabayashi[2], Norifumi Yamamoto[1] ([1]*Chiba Tech*, [2]*Tohoku Univ*)

3Pos184 D30N/L90M 変異を持つ HIV-1 プロテアーゼにおける薬剤耐性メカニズムの解明：残基間相互作用ネットワーク解析
Unveiling Drug Resistance Mechanisms in HIV-1 Protease with D30N and L90M Mutations: Residue Interaction Network Analysis

**Keidai Yamase** (*Chiba Tech*)

3Pos185 D2-L29/卵白リゾチーム複合体の変異による親和性向上メカニズム
Molecular Dynamics Elucidation of Mutation-Induced Affinity Enhancement in the D2-L29 VHH/Hen Egg Lysozyme Complex

**Rika Munakata**, Motoki Inoue, Takefumi Yamashita (*Univ. Hoshi*)

## 26C. 計算生物学：生体モデリングとシミュレーション／ 26C. Computational biology: Biological modeling and simulation

3Pos186 ニューラルネットワークを用いた溶液系の adaptive QM/MM 法の改善
Enhancement of Adaptive QM/MM Approaches for Solution-Phase Systems via Neural Networks
**Hiroshi Watanabe**, Takuma Ikeda, Haruyuki Nakano (*Dep. Chem., Fac. Sci., Kyushu Univ.*)

3Pos187 Engineering Epithelial Layer Structures via Cell Surface Tension Using a 3D Vertex Model
**Chayanit Thiticharoentam**[1], Satoru Okuda[2] ([1]*Division of Nano Life Science, Kanazawa University*, [2]*WPI Nano Life Science Institute, Kanazawa University*)

3Pos188 Discovery of novel inhibitor candidate compounds using accurate *in silico* screening protocol
**Hiroto Terada**, Kei Moritsugu (*Grad. Sch. Sci., OMU*)

3Pos189 Structural dynamics analysis of actin filament formation using molecular dynamics simulation
**Kenta Omoto** (*Grad. Sch. Sci., OMU*)

## 27. 数理生物学・理論生物学／27. Mathematical & Theoretical biology

3Pos190 変動環境下での代謝恒常性を支える Bowtie 型代謝ネットワーク
Bowtie-Structured Metabolic Networks Maintain Homeostasis under Fluctuating Environments
**Yudai Iyoda**[1], Chikara Furusawa[1,2], Yusuke Himeoka[1] ([1]*Grad. Sch. Sci., Univ. Tokyo*, [2]*BDR, Riken*)

3Pos191 一細胞と組織における力学応答の矛盾を統合する張力ホメオスタシスモデルの構築
Tension homeostasis model integrating contradictory mechanical responses in a single cell and tissues
**Yoshihito Sawazaki**[1], Yohei Kondo[2], Naoki Honda[1,2] ([1]*Grad. Sch. Integr. Life Sci., Univ. Hiroshima*, [2]*Grad. Sch. med., Univ. Nagoya*)

3Pos192 代謝動力学モデルを用いた細胞の低温ストレス応答解析
Analysis of Cellular Responses to Cold Stress Using a Metabolic Kinetics Model
**Atsuki Hishida**[1], Yusuke Himeoka[2], Chikara Furusawa[2,3] ([1]*Grad. Sch. Sci., Kyoto Univ.*, [2]*Univ. Biol. Inst., Grad. Sch. Sci., Univ. Tokyo*, [3]*BDR., Riken*)

3Pos193 液滴勾配による遺伝子誘導の数理モデル
Gene Guidance by Droplet Gradients: A Theory
**Takeshi Sugawara** (*Center for Data Science, Kochi Univ.*)

## 29. 非平衡・生体リズム／29. Nonequilibrium state & Biological rhythm

3Pos194 回帰的な無機膜ダイナミクスで歩行するソフトロボット
A Walking Soft Robot Actuated by Recursive Inorganic Membrane Dynamics
**Ryusei Kubota**, Muneyuki Matsuo (*Graduate School of Integrated Sciences for Life, Hiroshima University*)

3Pos195 擬二次元環境下における繊毛虫テトラヒメナの疎密波形成と伝播
Formation and propagation of the density wave by Ciliate *Tetrahymena* under a Quasi-2D Environment
**Ryuhei Itoh**[1], Kohei Okuyama[1], Ibuki Kawamata[1], Marie Tani[1], Akira Kakugo[1], Masatoshi Ichikawa[1,2] ([1]*Grad. Sch. of Sci., Kyoto Univ.*, [2]*Grad. Sch. Integ. Sci. Life, Hiroshima Univ.*)

## 30. 計測／30. Measurements

3Pos196 Development of a Micro-Acoustic Resonator for Micro-Rheological Measurement of Biomolecular Condensates
**Taichi Yoshikawa**, Hirotsugu Ogi, Kichitaro Nakajima (*Graduate School of Engineering, Osaka University*)

3Pos197 光学的手法を用いた選択的 DNA 増幅技術の開発
Development of selective DNA amplification technology by optical method
**Ren Saito**[1], Hironori Sugiyama[3], Yoshihiro Minagawa[1], Hiroyuki Noji[1,2] ([1]*Dep. Appl. Chem., Grad. Sch. Eng., Univ. Tokyo*, [2]*RIPH., Univ. Tokyo*, [3]*ELSI., Science Tokyo*)

3Pos198 硫酸アンモニウム混合液で加工したナノポアを用いた高解像度一分子構造解析
High-resolution single-molecule structural analysis of nanopore sensing using ammonium sulfate assisted fabrication
**Wataru Tsuchiya**[1], Lin Liu[2], Kyosuke Matsuda[1], Fan-Yan Wei[3], Hirohito Yamazaki[4] ([1]*Grad.Mech.,Nagaoka Univ. of Tech.*, [2]*Grad.Sch.Med,Tohoku Univ.*, [3]*IDAC,Tohoku Univ.*, [4]*Mech.,Nagaoka Univ. of Tech.*)

3Pos199 Vibrational relaxation process of flavin compounds measured by resonance IR method
**Minori Yamakawa**[1], Hirona Takahashi[1,2], Konoka Mifune[1], Makoto Sakai[1,2] ([1]*Graduate School of Science and Engineering, Okayama University of Science*, [2]*Faculty of Science, Okayama University of Science*)

3Pos200 Design of nanodiamonds for subcellular thermal manipulation
**Daisuke Watanabe**[1], Yoshie Harada[1,2] ([1]*WPI-PRIMe, Univ. Osaka*, [2]*QIQB, Univ. Osaka*)

3Pos201 液性相分離を用いたオイルフリーデジタルバイオアッセイ
Oil-free Digital Bioassay with Aqueous Two-Phase Separation
**Yoshihiro Minagawa**[1], Kai Matsumoto[1], Hiroyuki Noji[1,2] ([1]*Dept. App. Chem., Univ. Tokyo*, [2]*RIPH., Univ. Tokyo*)

3Pos202 プログラム可能な DNA 応答型発光センサープラットフォーム：スプリット Cas12a とルシフェラーゼ再構成に基づくシステム
Programmable DNA-responsive bioluminescent sensor platform based on split Cas12a and luciferase reconstitution
**Figueiredo Diogo**[1,2], Mitsuru Hattori[2], Takeharu Nagai[1,3] ([1]*Graduate School of Frontier Biosciences, Osaka University, Suita, Osaka*, [2]*Department of Biomolecular Science and Engineering, SANKEN, Osaka University, Ibaraki, Osaka*, [3]*Trans dimensional Life Imaging Division, Institute for Open and Transdisciplinary Research Initiatives, Osaka University, Suita, Osaka*)

3Pos203 細胞内温度変動を支配する非伝導性熱散逸
Non-conductive heat dissipation governs intracellular temperature variations
**Masaharu Takarada**[1], Takashi Funatsu[2], Kohki Okabe[1] ([1]*Graduate School of Pharmaceutical Sciences, The University of Tokyo,*, [2]*Graduate School of Integrated Sciences for Life, Hiroshima University*)

## 31. バイオイメージング／31. Bioimaging

3Pos204 Development of a Homo-FRET-Based Approach to Monitor Protein Conformational Changes
**Tomoya Mukai**[1,3], Yasushi Okada[1,2,3] ([1]*Grad. Sch. Sci., Univ. Tokyo*, [2]*Grad. Sch. Med., Univ. Tokyo*, [3]*Kobe Inst., Riken*)

3Pos205 蛍光多重イメージングのための，青色と緑色光で光スイッチングする緑色蛍光タンパク質の開発
A green fluorescent protein reversibly photoswitched by blue and teal light for multiplexed imaging
**Ryohei Ozaki-Noma**, Tetsuichi Wazawa, Kazunori Sugiura, Takeharu Nagai (*SANKEN, The Univ. of Osaka*)

3Pos206 鶏卵の孵卵中のレーザースペックル法による血管の可視化に適した露光時間の探索
Searching for Optimal Exposure Time for Visualization of Blood Vessel of Chicken Egg During Incubation Using Laser Speckle Imaging Method
**Hiroki Tamura**[1,2,3], Tetsuhito Suzuki[4], Keiichiro Shiraga[1,5], Naoshi Kondo[1], Yuichi Ogawa[6] ([1]*Graduate School of Agriculture, Kyoto University*, [2]*Distinguished Doctoral Program of Platforms (WISE), Kyoto University*, [3]*JSPS Research Fellowship for Young Scientists DC1*, [4]*Graduate School of Bioresources, Mie University*, [5]*PRESTO, JST*, [6]*Department of Medicine, Hyogo Medical University*)

3Pos207 XY クロストークを低減した高速 AFM スキャナーの開発
Development of a high-speed AFM scanner with reduced XY crosstalk
**Sora Nishida**[1], Kenichi Umeda[2], Noriyuki Kodera[2] ([1]*Grad. Sch. Math & Phys., Kanazawa Univ.*, [2]*WPI-NanoLSI, Kanazawa Univ.*)

3Pos208 Correlation Analysis of Intracellular Temperature Heterogeneity and Subcellular Structures
**Keisuke Fujita**[1], Yoshie Harada[1,2] ([1]*WPI-PRIMe, Univ. Osaka*, [2]*QIQB, Univ. Osaka*)

3Pos209 急速凍結ディープエッチングレプリカ電子顕微鏡を用いた滑走細菌のペプチドグリカン層の可視化
Visualization of peptidoglycan layer of gliding bacteria by using quick-freeze deep-etch replica electron microscope
**Yuhei Tahara**[1,2], Makoto Miyata[2] ([1]*Grad. Sch. Eng., Osaka Metropolitan Univ*, [2]*Grad. Sch. Sci., Osaka Metropolitan Univ*)

3Pos210 電子顕微鏡における複素観測：シェルツァー限界を超える
Complex Observation in Electron Microscopy : Surpassing the Scherzer Limit
**Kuniaki Nagayama** (*Science Communication Laboratory LLC*)

3Pos211 Non-invasive Evaluation of iPSC-derived Cardiomyocytes Using Deep Learning
**Taishi Kakizuka**[1,2], Taro Ichimura[2], Takeharu Nagai[1,2] ([1]*SANKEN, Univ. Osaka*, [2]*OTRI, Univ. Osaka*)

3Pos212 赤外 STED と共焦点顕微鏡の組み合わせによる，細胞周期と細胞内の構造の同時計測
Observation of cell cycle and fine structures by using the combination of confocal and Infrared STED microscopy
**Kaoru Katoh**[1,2,3], Totai Mitsuyama[1,2] ([1]*ExCELLS, National Institutes of Natural Sciences*, [2]*AIRC, AIST*, [3]*SIGMA, Univ Tsukuba*)

3Pos213 High-speed in-line force mapping - imaging of mechanical properties from microtubules to bacteria
**Christian Ganser**[1], Shigetaka Nishiguchi[2], Feng-Yueh Chan[3], Takayuki Uchihashi[1,3] ([1]*National Institutes of Natural Sciences, Exploratory Research Center on Life and Living Systems*, [2]*National Institute of Advanced Industrial Science and Technology, Department of Life Science and Biotechnology*, [3]*Nagoya University, Department of Physics*)

## 32. バイオエンジニアリング／32. Bioengineering

3Pos214 Fabrication of Periodic Inorganic Nanoparticles Using a Fusion Protein of Dps and Nanofiber-Forming Peptide
**Mitsuhiro Okuda**[1,2,3], Gabriela Pretre[2,3] ([1]*Meiji Univ.*, [2]*CIC nanoGUNE*, [3]*Komie Corp.*)

3Pos215 淘汰圧制御に向けた溶液交換技術の開発
Development of Solution Exchange Technology for Controlling Selection Pressure
**Nanato Takaso**[1], Yoshihiro Minagawa[1], Hiroyuki Noji[1,2] ([1]*Graduate School of Engineering, The University of Tokyo*, [2]*Research Institute of Planetary Health (RIPH), The University of Tokyo*)

3Pos216 キネシン-微小管系を内包したゲル人工筋肉の収縮特性評価
Characterization of contractile behavior of artificial muscle gel incorporating Kinesin-Microtubule networks
**Shuichi Ishino** (*JAIST*)

3Pos217 油気界面における生体分子からなる膜状構造の形成とその応用
Film-like biomolecular structures at the oil-air interface and their potential application
**Daichi Tominaga**[1], Shogo Hamada[2], Yusuke Sato[1] ([1]*Grad. Sch. Com., Kyushu. Inst. Tech*, [2]*Grad. Sch. Com., Inst. Sci. Tokyo*)

## 34. Miscellaneous topics その他／34. Miscellaneous topics

3Pos218 The Role of Fluid Dynamics in Active Phase-Separating Systems
**Charu Datt**[1,3], Jonathan Bauermann[2,3], Nazmi Burak Budanur[3], Frank Julicher[3] ([1]*Department of Mechanical Engineering, Keio University*, [2]*Department of Physics, Harvard University*, [3]*Max Planck Institute for the Physics of Complex Systems, Dresden*)

3Pos219 OptoChaperone – A biohybrid tool for regulating protein condensates in cells and *in vitro*
**Thanh Tuan Do**, Motonori Matsusaki, Soichiro Kawagoe, Hiroyuki Kumeta, Tomohide Saio (*Division of Molecular Science (Saio's Lab), Institute of Advanced Medical Sciences, Tokushima University, Tokushima, Japan*)

3Pos220 Attenuation of TDP-43 proteinopathy by graphene quantum dots in amyotrophic lateral sclerosis
**Yunseok Heo**, Yuxi Lin, Young-Ho Lee (*Korea Basic Science Institute*)