Workshops

WS1	June 7(Tue)16:10-18:40(tentative)	<Session Language: Japanese>
Japan Proteome Society and Protein Science Society Japan Joint Session		
Organizers: Susumu Uchiyama(Osaka Univ.), Hidetaka Kosako(Tokushima Univ.)		
Speakers: Nobuaki Takemori(Ehime Univ.),Koshi Imami(Kyoto Univ.),Hidetaka Kosako(Tokushima Univ.),Takashi Nakazawa(Nara Women's University),Kayo Nozawa(The University of Tokyo),Susumu Uchiyama(Osaka University)		
Proteome research has been extensively developed recently, especially for large-scale protein identifications and post-translational analysis. Meanwhile, detailed understandings of protein-protein interaction and structural analysis for individual system are now possible. In this joint session, recent research will be introduced from speakers of both societies, summarize current status and discuss about further development by the combination of different approaches.		

WS2	June 7(Tue)16:10-18:40(tentative)	<Session Language: Japanese>
Molecular engine engineering: Novel functions realized by fiddling around protein molecular machines		
Organizers: Takeshi Murata(Chiba University), Ryota Iino(Institute for Molecular Science)		
Speakers: Takeshi Murata(Chiba Univ.),Ryota Iino(IMS),Ryuji Kawano(Tokyo Univ. Agri. Tech.),Ken'ya Furuta(NICT),Nobuyasu Koga(ExCELLS),Yuki Sudo(Okayama Univ.)		
Proteins are molecular machines that work at the nanoscale and show sophisticated functions. An important category of protein molecular machines is the "molecular engines," which realize energy conversion through mechanical motion. In this workshop, we will have lectures by researchers who are realizing non-natural functions by fiddling around protein molecular engines by using computational design and function prediction, and hybridization with different biomolecules and artificial molecules.		

WS3	June 7(Tue)16:10-18:40(tentative)	<Session Language: Japanese>
Computational protein science in supercomputer Fugaku era		
Organizers: Mitsunori Ikeguchi(Yokohama City Univ.), Takefumi Yamashita(The University of Tokyo)		
Speakers: Hidetoshi Kono(QST, iQLS),Yasuhiro Matsunaga(Saitama Univ.),Satoru Nagatoishi(The Univ. of Tokyo),Takefumi Yamashita(The University of Tokyo),Mitsunori Ikeguchi(Yokohama City Univ.)		
A new era of computational science has begun with the launch of supercomputer “Fugaku”, which greatly updated the highest computing performance in the world. How should we utilize the enormous computational resources of "Fugaku” in protein science? Young leaders who actively perform research in this field get together and discuss about future directions of computational protein science.		

WS4	June 8(Wed)16:20-18:50(tentative)	<Session Language: Japanese>
Innovative technologies to elucidate the function and dynamics of biomolecules		
Organizers: Keiko Shinoda(The University of Tokyo) Takeshi Murakawa(Osaka Medical and Pharmaceutical University)		
Speakers: Eiichi Mizohata(Osaka University),Mitsuo Shoji(University of Tsukuba),Ryuhei Harada(University of Tsukuba),Motoyasu Adachi(National Institutes for Quantum Science and Technology),Takeshi Murakawa(Osaka Medical and Pharmaceutical University)		
Time-resolved serial femtosecond crystallography (TR-SFX), which captures the structural changes of biomolecules using microcrystals, has made it possible to create “molecular movies”. In this workshop, invited speakers will present various approaches (TR-SFX, neutron crystallography, and computational science) for understanding the function and dynamics of biological macromolecules.		

WS5	June 8(Wed)16:20-18:50(tentative)	<Session Language: Japanese>
Observing protein structures in cells		
Organizers:Masahide Kikkawa (Univ. of Tokyo), Kenji Inaba (Tohoku Univ.)		
Masahide Kikkawa (University of Tokyo), Ryo Nitta (Kobe University), Keisuke Miyazawa (Kanazawa University), Zhao Qingci (Chiba University), Yuji Sugita (RIKEN), Satoshi Watanabe (Tohoku University)		
To truly understand physiological functions of proteins, we need to reveal their structures and dynamics in cells.However,this is far from easy since it is extremely hard to reproduce the intracellular environment in test tubes.Given the special situations inside cells and organelles, which are surround by membranes and imports and exports many kinds of substances via membrane transporters, protein structures and dynamics are expected to be significantly different from those obtained by in vitro experiments. In this workshop, scientists who tackle this important issue by developing cutting-edge measurement technologies will provide their latest insights into in-cell protein structure and dynamics.		

WS6	June 8(Wed)16:20-18:50(tentative)	<Session Language: Japanese>
Unraveling life by kinetics		
Organizers: Tomohide Saio(Institute of Advanced Medical Sciences Tokushima University) Masaki Okumura(Frontier Research Institute for Interdisciplinary Sciences, Tohoku University)		
Speakers: Tomohide Saio(Institute of Advanced Medical Sciences Tokushima University), Nakasone Yusuke(Graduate School of Science, Kyoto University),Tetsunari Kimura(Kobe University, Graduate School of Science),Muraoka Takahiro(Department of Applied Chemistry, Graduate School of Engineering,Tokyo University of Agriculture and Technology),Masaki Okumura(Frontier Research Institute for Interdisciplinary Sciences, Tohoku University),Satoshi Arai(Nano Life Science Institute (WPI-NanoLSI), Kanazawa University)		
Despite the importance of the kinetic aspects in the biological events, the mechanisms of the kinetic-driven processes are poorly understood. This workshop gathers the top scientists investigating kinetic aspects of molecules, proteins, organelles, and cells to cultivate the cross-disciplinary discussion and future innovation.		

WS7	June 9(Thu)8:45-11:15(tentative)	<Session Language: Japanese>
Molecular simulations in the era of AlphaFold		
Organizers: Song-Ho Chong(RIKEN), Hiraku Oshima(RIKEN)		
Speakers: Daisuke Kuroda(The University of Tokyo),Shun Sakuraba(National Institutes for Quantum Science and Technology),Kei Terayama(Yokohama City University),Tomoshi Kameda(AIST),Takahiro Kosugi(Institute for Molecular Science)		
Machine learning approaches such as AlphaFold are imparting significant impacts on various scientific fields. Molecular simulations are no exception. In this workshop, we will argue "what is and will be true progress that cannot not be achieved without machine learning approaches" and "how AlphaFold will impact the future of molecular simulations".		

WS8	June 9(Thu)8:45-11:15(tentative)	<Session Language: Japanese>
Oral presentations will NOT be chosen from the free papers		
Frontline of interdisciplinary research on "Biometal Science"		
Organizers: Yoshiaki Furukawa (Keio Univ.), Taiho Kambe (Kyoto Univ.)		
Tomonori Tamura (Kyoto University), Yasuo Uchida (Tohoku Univ), Takehiko Tosha (RIKEN), Norifumi Muraki(ExCELLS, NINS) Makoto Nakakido(The Univ. of Tokyo), Yuta Amagai (Tohoku Univ.), Ayako Fukunaka(Gunma University)		
To decipher tactics of how life utilizes bio-metals, the IBmS project aims to establish a new interdisciplinary research field "Biometal Science" by integrating a variety of scientific fields dealing with bio-metals. In this session, you will find frontline of the Biometal Science from promising researchers in various fields.		

WS9	June 9(Thu) 8:45-11:15(tentative)	<Session Language: Japanese>
Multifaceted protein world - from translation to liquid-liquid phase separation		
Organizers: Hideki Taguchi（Tokyo Institute of Technology）		
Yuhei Chadani (Tokyo Institute of Technology),Hiroshi Kadokura (Tohoku Univ.),Kodai Machida (Univ. of Hyogo),Yuko Fujioka (Institute of Microbial Chemistry),Shunsuke Matsumoto (Kyushu University) ,Yoshikazu Tanaka (Tohoku University)		
Recent discoveries and technological innovations have challenged the conventional view of proteins, and we are beginning to see many previously unexplored faces in the protein world (multifaceted protein world). In this workshop, researchers revolutionizing the conventional views of proteins share their latest exciting topics, providing an insight into the novel protein science.		

WS10	June 9(Thu)8:45-11:15(tentative)	<Session Language: Japanese>
Toward intra-cellular protein science		
Organizers: Yohei Miyanoiri(IPR, Osaka Univ.) Koh Takeuchi(Grad. Sch. Pharm. Sci., The Univ. of Tokyo,)		
Speakers: Daiju Kitagawa(Grad. Sch. Pharm. Sci., The Univ. of Tokyo),Noritaka Nishida(Grad. Sch. Pharm. Sci., Chiba Univ.),Masaki Matsumoto(Niigata Univ. Grad. Sch. Med. and Dent. Sci.),Hiromasa Yagi(RIKEN, BDR),Yoshie Harada(IPR, Osaka Univ.)		
The intracellular environment is extremely heterogeneous and dynamic. Thus, it is necessary to observe the structure and dynamics of proteins directly in the intracellular environment or in an environment similar to that in vivo. In this workshop, we aim to clarify the potential and limitation of current approaches to accelerate the research that pushes the horizon toward “intracellular protein science”.		

WS11	June 9(Thu)13:50-16:20(tentative)	<Session Language: Japanese>
Study of megadalton-scale molecular dynamics aiming to establish "structural life system science"		
Organizers: Kayo Nozawa(The University of Tokyo), Yutetsu Kuuma(Japan Agency for Marine-Earth Science and Technology, X-Star)		
Speakers: Yutetsu Kuuma(Japan Agency for Marine-Earth Science and Technology, X-Star),Tomoya Tsukazaki(Nara Institute of Science and Technology),Kayo Nozawa(The University of Tokyo),Ryoji Miyazaki(Nara Institute of Science and Technology),Kazunari Kaizu(RIKEN BDR),Takaharu Mori(RIKEN CPR)		
As the understanding of biomolecules advance rapidly, research targets are shifting to complex megadalton-sized molecular systems. In this workshop, we will introduce an attempt to analyze the esoteric life systems comprising genome and membrane proteins by fusing cutting-edge structural biology with artificial cell research. This fusion study, in collaboration with new computational science and technology, will approach the mechanism by which the dynamics of the system express life phenomena.		

WS12	June 9(Thu)13:50-16:20(tentative)	<Session Language: Japanese>
Be fastidious about the methodolgy and master cryo-electron microscopy!		
Organizers: Toshio Moriya(High Energy Accelerator Research Organization (KEK)) Takeshi Yokoyama(Tohoku University, Graduate School of Life Sciences)		
Speakers: Toshio Moriya(High Energy Accelerator Research Organization (KEK)),Daisuke Miyamoto(Amazon Web Services Japan G.K.),Takeshi Yokoyama(Tohoku University, Graduate School of Life Sciences),Yoko Fujita-Fujiharu(Kyoto University, Institute for Frontier Life and Medical Sciences),Koji Kato(Okayama University, Research Institute for Interdisciplinary Science),Jun-ichi Kishikawa(Osaka University, Institute for Protein Research)		
Recently, many high-end cryo-EMs have been installed in Japan, the efficiency and automation of data acquisition has been improved, and the users are increasing. With cryo-EM, being fastidious about the methodolgy often leads to breakthroughs. Here, presenters will share the "ingenuity" that led to the success of their structural analysis.		

WS13	June 9(Thu)13:50-16:20(tentative)	<Session Language: Japanese>
Self-condensation of intrinsically disordered proteins driven by dynamic solution environments		
Organizers: Naotaka Sekiyama(Kyoto Univ.), Kenji Sugase(Kyoto Univ.)		
Speakers: Naotaka Sekiyama(Kyoto Univ.),Kenji Sugase(Kyoto Univ.),Hideki Nakamura(Kyoto Univ.),Norio Yoshida(Kyushu Univ.),Takakazu Nakabayashi(Tohoku Univ.),Kohji Mori(Osaka Univ.)		
Intrinsically disordered proteins undergo liquid-liquid phase separation and amyloid fibrillation in response to the surrounding solution environment. This series of self-condensation processes is a phenomenon in which proteins interact with each other at the atomic level to form macroscopic condensates at the cellular level. In this workshop, we will discuss the latest results and future developments of the self-condensation process.		