

Workshop

1WBa	June 24 (Mon) 9:00-11:30 (tentative)	<Session Language: English>
Several oral presentations will be chosen from the free papers		
Peptide-ligation based protein design		
Organizers: Shinya Honda (AIST), Koki Makabe (Yamagata University)		
Speakers: Koki Makabe (Yamagata Univ.), Takamitsu Miyafusa (AIST), Yohei Sohma (The Univ. of Tokyo), Ryo Okamoto (Osaka Univ.), Hidehiko Hirakawa (Tsukuba Univ.), Takuya Matsumoto (Osaka prefecture Univ)		
Peptide ligation is a protein engineering technique that connects the backbone of two poly-peptide chains. It expands the limitation of general recombinant protein expression, such as protein cyclization or incorporation of non-natural amino acids. In this workshop, we will discuss the broad perspective of the technique from chemical synthesis of peptides to intein/sortase ligation.		

1WFa	June 24 (Mon) 9:00-11:30 (tentative)	<Session Language: English>
Several oral presentations will be chosen from the free papers		
Structural, functional, and evolutionary analyses of transcription apparatus and RNA architecture		
Organizers: Naruhiko Adachi (KEK), Hisashi Tadakuma (Osaka Univ.)		
Speakers: Shun-ichi Sekine (RIKEN), Kayo Nozawa (The Univ. of Tokyo), Naruhiko Adachi (KEK), Hisashi Tadakuma (Osaka Univ.), Tomohiro Yamazaki (Hokkaido Univ.)		
RNA regulates numerous biological phenomena. Recent evidence suggests that RNA forms membraneless structures in vivo, which are functionally associated with transcriptional activity. Here, we present studies on the structure, function, and evolution of the transcription apparatus and RNA architecture. We will discuss the connection between cell biology and protein science through RNA function.		

1WGa	June 24 (Mon) 9:00-11:30 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Cross-talk between structural biology and synthetic biology of natural products biosynthesis		
Organizers: Shingo Nagano (Tottori Univ.), Tomohisa Kuzuyama (The Univ. of Tokyo)		
Speakers: Haruo Ikeda (Kitasato Univ.), Chitose Maruyama (Fukui Prefectural Univ.), Osami Shoji (Nagoya Univ.), Ayako Yoshida (The Univ. of Tokyo), Shingo Nagano (Tottori Univ.)		
To date, X-ray crystallography has revealed the structures of numerous enzymes involved in the biosynthesis of natural products; this has led to great advances in this field. Natural product biosynthetic pathways provide important targets for synthetic biology-based studies because of their complexity and the modular structure of the natural product biosynthetic machinery. We would like to discuss a novel strategy for the biosynthesis of natural products through a combination of structural and synthetic biology-based techniques.		

1WBp	June 24 (Mon) 16:45-19:15 (tentative)	<Session Language: English>
Several oral presentations will be chosen from the free papers		
Current status and issues of biopharmaceuticals from the view points of protein science and regulatory science		
Organizers: Susumu Uchiyama (Osaka Univ.), Akiko Ishii (National Institute of Health Sciences)		
Speakers: Hiroko Shibata (NIHS), Shinaya Honda (AIST), Satoshi Saitoh (Chugai Pharmaceutical Co., Ltd.), Satoru Nagatoishi (The Univ. of Tokyo), Elena Krayukhina (U-Medico Inc.)		
<p>Though the therapeutic proteins have been widely used recently, further studies on the protein stability and immunogenicity are necessary for developing therapeutic proteins with higher quality and safety. In this session, we will focus on the current status of therapeutic proteins from the viewpoints of protein and regulatory sciences.</p>		

1WCp	June 24 (Mon) 16:45-19:15 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Towards next generation computational drug discovery		
Organizers: Hiroki Shirai (Astellas Pharma Inc.), Mitsunori Ikeguchi (Yokohama City Univ.)		
Speakers: Masateru Ohta (Riken), Masataka Kuroda (Mitsubishi Tanabe Pharma), Kengo Kinoshita (Tohoku Univ.), Daisuke Kuroda (The Univ. of Tokyo), Mitsunori Ikeguchi (Yokohama City Univ.)		
<p>There is an increasing level of research in in silico technologies for drug discovery. However, complex nature of molecular recognition still prevents us from establishing ideal "in silico drug discovery." In this workshop, we will capture the current status, problems, and future aspects of this field from the presentations and discussions by the renowned speakers from academia and industry.</p>		

1WFp	June 24 (Mon) 16:45-19:15 (tentative)	<Session Language: English>
Several oral presentations will be chosen from the free papers		
Organelle Zone: Compartmentalized organelle structure and function		
Organizers: Satoshi Goto (Rikkyo Univ.), Yasushi Tamura (Yamagata Univ.)		
Speakers: Satoshi Goto (Rikkyo Univ.), Yasushi Tamura (Yamagata Univ.), Kazunori Imaizumi (Hiroshima Univ.), Takumi Koshiba (Kyushu Univ.), Masatoshi Yamamoto (Kumamoto Univ.)		
<p>Recent studies have revealed the existence of "organelle zones" that are functionally and structurally specialized organelle regions. In this workshop, we will introduce our recent findings of the organelle zones and discuss the latest pictures of organelles.</p>		

1WGp	June 24 (Mon) 16:45-19:15 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Cooperative regulation of cellular functions by bio-metals and proteins		
Organizers: Yoshiaki Furukawa (Keio Univ.), Taiho Kambe (Kyoto Univ.)		
Speakers: Tomonori Tamura (Kyoto Univ.), Masato Yasui (Keio Univ.), Satoshi Watanabe (Tohoku Univ.), Ayako Fukunaka (Gunma Univ.), Kouhei Tsumoto (The Univ. of Tokyo)		
<p>Various physiological processes are realized by well-organized collaboration between metal ions and proteins in vivo. Breakdown of such collaborative actions will thus result in diseases. In this WS, relevance of metal ions in our physiologies as well as pathologies will be discussed from various perspectives including chemical, biological, and medical points of view.</p>		

2WFa	June 25 (Tue) 8:45-11:15	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
The new horizon of the multiple transmembrane proteins – These structures, multiple functions and new technologies –		
Organizers: Kosei Takeuchi (Aichi Medical Univ.), Atsushi Tamura (Osaka Univ.)		
Speakers: Atsushi Tamura (Osaka Univ.), Shun Nakakamura (Nagoya Univ.), Masayasu Kojima (Kurume Univ.), Takeshi Murata (Chiba Univ.), Yoshito Takeda (Osaka Univ.), Hiroyuki Sasakura (Aichi Medical Univ.)		
<p>The purpose of this workshop is trying to unify the latest studies of GPCR, Tetraspanin and claudin family, to discover clues and elucidate the molecular structure and functions of these multiple transmembrane proteins.</p>		

2WGa	June 25 (Tue) 8:45-11:15	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Biology of state transition of proteins		
Organizers: Kozo Tanaka (Tohoku Univ.), Yasushige Yonezawa (Kindai Univ.)		
Speakers: Masanori Ikeda (Tohoku Univ.), Takuma Shiraki (Kindai Univ.), Kota Kasahara (Ritsumeikan Univ.), Kazuko Okamoto (RIKEN), Motonori Ohta (Nagoya Univ.), Akihiko Muto (Tohoku Univ.)		
<p>The nature of protein function is supposed to exist in state transition originating from the fluctuation of protein structure, rather than the structure itself. In this workshop, we will reconsider the protein function through cell-biological, macro to micro viewpoint as well as structural biological, micro-to-macro viewpoint, to decipher the biological mission of protein.</p>		

2WCp	June 25 (Tue) 16:30-19:00	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Capturing proteins in action~a new era of investigating protein structural dynamics		
Organizers: Eriko Nango (RIKEN), Tomoya Hino (Tottori Univ.)		
Speakers: Toshiaki Hosaka (RIKEN), Daisuke Sato (Soka Univ.), Yasuhiro Matsunaga (RIKEN), Hiroshi Nishimasu (Univ. of Tokyo), So Iwata (Kyoto Univ./RIKEN),		
There is a limit in interpreting protein function based on a protein structure in a static state because structural changes occur in a protein at work. Therefore, a study of protein dynamics is expected as next generation structural biology. In this workshop, we present the latest results of the studies of protein dynamics performed using X-ray free electron lasers, atomic force microscopy, time-resolved X-ray solution scattering, or molecular simulation.		

2WFp	June 25 (Tue) 16:30-19:00	<Session Language: English>
Several oral presentations will be chosen from the free papers		
Protein scientific approaches for understanding mitochondrial functions		
Organizers: Takumi Koshiha (Kyushu University), Koji Okamoto (Osaka University)		
Speakers: Koji Okamoto (Osaka Univ.), Miyu Moriyama (The Univ. of Tokyo), Non Miyata (Kyushu Univ.), Satoko Arakawa (Tokyo Medical and Dental Univ.), Daniel Ken Inaoka (Nagasaki Univ.),		
The mitochondrion, a double-membraned organelle, is the powerhouse of eukaryotic cells which plays an important role in generating ATP and controlling calcium levels. Recent genetic studies in many model species have demonstrated that mitochondria are not just limited to respiration and apoptosis. In this symposium, we invited domestic young investigators, and they will discuss about current topics regarding new aspects of mitochondrial functions and we would like to share this knowledge to get to the next stage of mitochondrial studies.		

2WGp	June 25 (Tue) 16:30-19:00	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
A brand-new way of collaboration; Cell biology x Protein science		
Organizers: Sakane Ayuko (Tokushima University), Tsuchiya Yuko (AIST)		
Speakers: Sakane Ayuko (Tokushima Univ.)-Tsuchiya Yuko (AIST), Takei Kohji (Okayama Univ.)-Uchihashi Takayuki (Nagoya Univ), Katagiri Toyomasa (Tokushima Univ.)-Mizuguchi Kenji (NIBIOHN), Sato Miyuki (Gunma Univ.)-Kosako Hidetaka (Tokushima Univ.)		
Mutual cooperation between cell biology and protein science is indispensable for understanding of the pathogenesis of diseases from the viewpoint of protein structure, protein-protein interplay, and protein modification in the dysregulation of multiple cellular functions. In this workshop, a cell biologist and a protein scientist give a talk in pairs on a brand-new way of collaboration to achieve their goal.		

3WCa	June 26 (Wed) 8:45-11:15 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Maintenance and Dysregulation of Homeostasis in Living Organisms		
Organizers: Ari Hashimoto (Hokkaido Univ.), Chitose Oneyama (Aichi Cancer Ctr. Res. Inst.)		
Speakers: Ohtani Naoko (Osaka City Univ.), Yusuke Ohba (Hokkaido Univ.), Yoshihiro Omori (Osaka Univ.), Chitose Oneyama (Aichi Cancer Ctr. Res. Inst.), Ari Hashimoto (Hokkaido Univ.)		
Multicellular organisms maintain their homeostasis via intricate and sophisticated mechanisms that operate intracellular/intercellular signaling to respond to various environmental factors. In this workshop, we will focus on recent data regarding the associations between signals of homeostatic maintenance, as well as diseases resulting from its dysregulation, to deepen our understanding of the molecular mechanisms underlying the diversity/universality of dysregulated homeostatic maintenance.		

3WDa	June 26 (Wed) 8:45-11:15 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Protein Science Society Archive WS : Joint use facilities to expand research activity of protein science - From "How to use" to latest technologies		
Organizers: Tomoki Matsuda (Osaka University), Maho Yagi (ExCELLS)		
Speakers: Yusuke Yamada (KEK), Nobutaka Shimizu (KEK), Takashi Kumasaka (JASRI), Takanori Kigawa (RIKEN), Koichi Kato (ExCELLS), Kaoru Mitsuoka (Osaka Univ.)		
In this workshop, joint research facilities related to the protein science are introduced by the researchers managing them. Aiming at a broad audience, topics of their talk covers from utilization procedure to cutting-edge technologies. We hope audiences to take back useful information to overcome one's limitations of research by using these outstanding facilities.		

3WGa	June 26 (Wed) 8:45-11:15 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Understanding the signal transduction mechanisms of 1TM receptors based on the molecular and cellular dynamics		
Organizers: Terukazu Nogi (Yokohama City Univ.), Yasushi Sako (RIKEN)		
Speakers: Terukazu Nogi (Yokohama City Univ.), Yasushi Sako (RIKEN), Umehar Ohto (The Univ. of Toky), Shuya Fukai (The Univ. of Toky), Hiroshi Hanafusa (Nagoya Univ.)		
Single-pass transmembrane (1TM) receptors constitute a large family in the cell surface proteins and exhibit pleiotropic functions in eukaryotic cells. This workshop will showcase some advances in research to elucidate the mechanisms of receptor activation and signal transduction from the viewpoint of molecular and cellular dynamics.		

3WCp	June 26 (Wed) 13:50-16:20 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Phase Separation Biology		
Organizers: Kentaro Shiraki (Univ. of Tsukuba), Akira Matsuura (Chiba Univ.), Takeshi Noda (Osaka Univ.)		
Speakers: Kentaro Shiraki (Univ. of Tsukuba), Masahiro Mimura (Univ. of Tsukuba), Tatsuya Maeda (Hamamatsu Univ. School of Medicine.), Hisao Moriya (Okayama Univ.), Tomoshi Kameda (AIST), Takuya Yoshizawa (Ritsumeikan Univ.), Eiichiro Mori (Nara Medical Univ.)		
<p>The concept that liquid-liquid phase separation is one of the organizing principles for cells has emerged, which makes a great impact on the fields of protein science and cell biology. In this workshop scientists studying the topics related to "Phase Separation Biology" will gather to discuss recent advances and future direction of this field.</p>		

3WDp	June 26 (Wed) 13:50-16:20 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Toward rational design of protein crystals		
Organizers: Naoki Kunishima (Rigaku Corporation/RIKEN), Kentaro Tomii (AIST)		
Speakers: Naoki Kunishima (Rigaku Corp./RIKEN), Megumi Kosaka (Okayama Univ.), Miki Senda (KEK), Ryuji Tanimura (Toray Inds.), Shou Maki (Osaka Ohtani Univ.), Kazunori Yamada (Tohoku Univ.)		
<p>Although the protein crystallography is a major tool for the structural biology, obtaining suitable crystals for the structure determination has not yet been straightforward. In this workshop, the rational design of protein crystals and the other technologies that resolve the crystallization problem will be introduced and will be discussed.</p>		

3WEp	June 26 (Wed) 13:50-16:20 (tentative)	<Session Language: English>
Several oral presentations will be chosen from the free papers		
Computer simulations of protein-protein and protein/DNA interactions in cellular environments		
Organizers: Yuji Sugita (RIKEN), Takaharu Mori (RIKEN)		
Speakers: Chales Brooks III (Univ. of Michigan), Wataru Shinoda (Nagoya Univ.), Wonpil Im (Lehigh Univ.), Giovanni Brandani (Kyoto Univ.), Michael Feig (Michigan State Univ.), Yuji Sugita (RIKEN)		
<p>Recent progress of supercomputers have allowed us to study large biological systems, such as biological membrane, membrane proteins, crowding in the cytoplasm, virus, nucleosome, and chromatin, by computer simulations. In these simulations, it is essential to investigate interactions between multiple biomolecules for understanding biological functions in cellular environments. We show new insight obtained by computer simulations and discuss collaboration with experiments.</p>		

3WFp	June 26 (Wed) 13:50-16:20 (tentative)	<Session Language: Japanese>
Several oral presentations will be chosen from the free papers		
Coalition between measurement and information to investigate biomolecular structure and function		
Organizers: Sotaro Fuchigami (Kyoto Univ.), Yasuhiro Matsunaga (RIKEN)		
Speakers: Kazuyuki Nakamura (Meiji Univ. / JST PRESTO), Takuma Kasai (RIKEN), Miwa Sato (Mitsui Knowledge Industry), Sotaro Fuchigami (Kyoto Univ.)		
By combining various experimental measurements with state-of-the-art techniques of information science such as simulation, AI, and machine learning, it is becoming possible to investigate the structure and function of biomolecules in unprecedented detail. This workshop aims to overview the latest developments in such combined methods, and to discuss the usefulness and limitations of these methods.		