

Workshop Program

●Day 1 June 7 (Tue.) 16:00–18:30 (tentative)

1WA

Theme	What can be seen through the advanced electron cryo-microscopy?
Organizers	Shuya Fukai (Univ. Tokyo), Hideki Shigematsu (RIKEN)
Outline	Resolution of the single particle analysis by cryo-EM is getting close to the atomic level, which has been achieved mostly by X-ray crystallography. What can be seen through the advanced single particle analysis? What can be potentially revealed by microED and tomography? In this workshop, we will discuss the future of the cryo-EM analysis with the latest topics.
Speakers	Takuo Yasunaga(Kyutech), Koji Yonekura(RIKEN), Kenji Iwasaki(Osaka Univ.), Ryo Nitta(RIKEN), Takashi Fujii(Osaka Univ.), Hideki Shigematsu(RIKEN)

1WB

Theme	Biomolecule analyses based on Sparse Modeling: Extracting the maximum amount of information of biomolecules from limited amount of data
Organizers	Takanori Kigawa (RIKEN), Teppei Ikeya (Tokyo Metropolitan Univ.)
Outline	Sparse modeling (SM) is a method of statistical science, which can maximally extract information from data of natural science to discover hidden rules in it. In this workshop, the recent advancements in SM and its applications to biomolecular measurements will be presented to explore clues to solve their common problems.
Speakers	Shiro Ikeda(The Institute of Statistical Mathematics), Yasuhiro Matsunaga(RIKEN), Yasumasa Joti(JASRI), Florence TAMA(Nagoya Univ.), Takuma Kasai(RIKEN)

1WC

Theme	Oxygen biology decoded from functional modifications of proteins
Organizers	Yasuo Mori (Kyoto Univ.), Motohiro Nishida (OIIB)
Outline	Elucidating the mechanism underlying oxygen perception by protein and its signal transduction to cells is important for understanding how living body sense oxygen and adapt from its environment. In this symposium, we will introduce current topics on the basic mechanisms underlying functional modifications of proteins by oxygen (or oxygen-derived reactive species), and their (patho)physiological significance, and new technologies to visualize oxygen signaling in vivo.
Speakers	Hideki Sumimoto(Kyushu Univ.), Motohiro Nishida(OIIB), Tomohiro Sawa(Kumamoto Univ.), Hiromi Imamura(Kyoto Univ.), Takashi Morii(Kyoto Univ.)

1WD

Theme	Sample purification as a foundation of cutting-edge protein science
Organizers	Toshiya Senda (KEK), Fumiaki Yumoto (KEK)
Outline	Succeeding in sample preparation is essential for structural and functional characterizations in protein science. In this symposium, experts who have extensive experiences in academia or in industry will discuss about sample purification, especially in the cases of challenging targets such as endogenous protein assemblies, recombinant membrane proteins, and drug-target proteins.
Speakers	Junichi Takagi(Osaka Univ.), Takeshi Murata(Chiba Univ.), Yasuhisa Kimura(Kyoto Univ.), Kyoko Itoh-Shinzawa(Hyogo Univ.), Naruhiko Adachi(KEK), Hitoshi Sakashita(AIST)

1WE

Theme	Innovations in studying lipid-protein interactions
Organizers	Shigeru Sugiyama (Osaka Univ.), Shigeru Matsuoka (Osaka Univ.)
Outline	To understand the nature of lipid-protein interaction and reveal its biological significance, it is necessary to solve how poorly water-soluble lipids are treated in aqueous experimental systems. In this workshop, we would like to share and discuss current developments and perspectives of research on hydrophobic biomolecules, including lipids, hydrophobic drugs, and membrane proteins.
Speakers	Shigeru Sugiyama(Osaka Univ.), Shigeru Matsuoka(Osaka Univ.), Takashi Inui(Osaka Prefecture Univ.), Shiro Suetsugu(NAIST), Satoshi Murakami(Tokyo Inst. Tech.), Masashi Sonoyama(Gunma Univ.)

●Day 2 June 8 (Wed.) 16:00–18:30 (tentative)

2WA

Theme	The 1st APPA-PSSJ joint workshop
Organizers	Chojiro KOJIMA (Osaka Univ.) Kaoru Mitsuoka (Osaka Univ.)
Outline	The Asia Pacific Protein Association (APPA), founded in 2004, aims at advancing cooperation and collaboration in all aspects of protein science among countries in the Asia Pacific region (http://www.pssj.jp/APPA/). Participating countries include Australia, China, Chinese Taipei, India, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, and Vietnam. APPA organizes an International Conference that provides an international forum to support communication, cooperation and collaboration. The office of APPA has been placed in the office of the Protein Science Society of Japan. The past Symposia were held at Yokohama, Japan (2004), Cairns, Australia (2008), Shanghai, China (2011), and Jeju Island, Korea (2014). The next symposium will be held in 2017 in Thailand. At the Council Meeting at Canberra, Australia in November 15, 2015, PSSJ kindly proposed to organize a joint workshop as a session during the annual meeting in 2016 at Fukuoka. Councils of APPA appreciated this wonderful proposal and agreed that other regional societies encourage to similarly having APPA sessions at their meetings. We believe that this workshop further contribute to advancing protein science among Asia Pacific region.
Speakers	Yuji Goto (Osaka Univ.) , Kota Mayanagi (Kyushu Univ.) , Jaekyung Hyun (Korea Basic Science Institute) Ping Zhu (Chinese Academy of Sciences) , Mingjie Zhang (Hong Kong University of Science and Technology) , Atsushi Nakagawa (Osaka Univ.)

2WB

Theme	Recent progress in serial femtosecond crystallography at SACLA
Organizers	Toru Nakatsu (Nagoya Univ.), Eiichi Mizohata (Osaka Univ.)
Outline	Serial femtosecond crystallography using X-ray Free Electron Laser occurs some new approaches for protein crystallography. In this workshop, we discuss the future of protein structural study with radiation damage-free crystallography, new phase determination method, time resolved protein crystallography, and membrane protein structural analysis at SACLA.
Speakers	Eiichi Mizohata (Osaka Univ.), Fumiaki Yumoto (KEK), Tatsuro Shimamura (Kyoto Univ.), Eriko Nango (RIKEN), Toru Nakatsu (Kyoto Univ.)

2WC

Theme	New Biocatalysts Using a Protein as a Reaction Scaffold
Organizers	Takashi Hayashi (Osaka Univ.), Osami Shoji (Nagoya Univ.)
Outline	We have recently focused on a protein scaffold in which a catalytic reaction proceeds smoothly and modified various proteins by mutagenetic and/or chemical methods to construct a new biocatalyst with a good reactivity and selectivity. In this workshop, the speakers present their recent results toward the design and preparation of new biocatalysis systems.
Speakers	Akira Onoda (Osaka Univ.), Noriho Kamiya (Kyushu Univ.), Osami Shoji (Nagoya Univ.), Jun-ya Hasegawa (Hokkaido Univ.), Takashi Matsuo (NAIST), Hiroyasu Yamaguchi (Osaka Univ.)

2WD

Theme	New steps of structural bioinformatics on life science big data
Organizers	Kei Yura (Ochanomizu Univ.), Kentaro Shimizu (Univ. Tokyo)
Outline	"Big data" has laid big impact on many fields in science and the field of structural bioinformatics is no exception. However the specific impact of "big data" and its effect on the future direction of the discipline is not clear yet. To elucidate these unclear points, we will invite six researchers in the field and they will review and present the recent advancements in protein informatics based on the big data.
Speakers	Akira Kinjo (Osaka Univ.), Shugo Nakamura (Univ. Tokyo), Hidetoshi Kono (JAEA), Kentaro Tomii (AIST), Hafumi Nishi (Tohoku Univ.), Wataru Nemoto (Tokyo Denki Univ.)

2WE

Theme	Advances in the stability and immunogenicity of therapeutic proteins
Organizers	Susumu Uchiyama (Osaka Univ.), Akiko Ishii (NIHS)
Outline	Recently, as for therapeutic proteins, chemical modifications and formation of aggregates are concerned because of their potential risk of immunogenicity. In this workshop, speakers from academic and industrial researchers will present the current status of the biophysical characterizations of protein modification and aggregates and also evaluation of their immunogenicity. Future prospects of this research topic will be also discussed.
Speakers	Susumu Uchiyama (Osaka Univ.), Jun Hasegawa (Daiichi Sankyo Co., Ltd.), Ryota Abe (Astellas Pharm Inc.), Akiko Ishii-Watabe (NIHS), Yoshiro Saito (NIHS), Tomoyuki Igawa (Chugai Pharmaceutical CO., Ltd)

●Day 3 June 9 (Thu.) 9:00–11:30 (tentative)

3WC

Theme	Reconstitution of cellular events using artificially customized protein molecules
Organizers	Terukazu Nogi (Yokohama City Univ.), Tadashi Satoh (Nagoya City Univ.)
Outline	Post-translational modifications such as phosphorylation and glycosylation are “customizations” to endow polypeptide chains with their specific functionalities. This workshop will focus on advanced technologies to reproduce physiological customizations or to introduce artificial customizations into polypeptide chains, which will accelerate understanding of cellular events in the field of structural life science.
Speakers	Hironobu Hojo(Osaka Univ.), Tadashi Satoh(Nagoya City Univ.), Takahiro Hoshaka(JAIST), Hiroyuki Mori(Kyoto Univ.), Kyohei Arita(Yokohama City Univ.), Kazumi Saikusa(Hiroshima Univ.), Akinori Kidera(Yokohama City Univ.)

3WD

Theme	Chromatin modifications: their reconstitution and functional analyses
Organizers	Takashi Umehara (RIKEN), Motoko Unoki (Kyushu Univ.)
Outline	Chromatin modifications including DNA methylation and histone modifications are keys to the robustness and plasticity of epigenome. Although their precise reconstitution had not been successful, recent technological advancement enabled us to achieve it using designed histone modifications. In this workshop, young scientists studying a variety of chromatin modifications prospect this field through their presentations.
Speakers	Motoko Unoki(Kyushu Univ.), Saori Takahashi(Osaka Univ.), Shinsuke Ito(RIKEN), Shigehiro Kawashima(Univ. Tokyo), Gosuke Hayashi(Univ. Tokyo), Takashi Umehara(RIKEN)

3WE

Theme	Deepening and expansion of protein intrinsic disorder
Organizers	Moronori Ota (Nagoya Univ.), Hidekazu Hiroaki (Nagoya Univ.)
Outline	After the discovery of intrinsically disordered proteins (IDPs) almost 20 years ago, many analytical methods and instruments have been extensively developed to elucidate the structural and functional features of IDPs. In this workshop, we will focus on how these state-of-the-art techniques facilitate to expand and deepen the research of IDPs.
Speakers	Motonori Ota(Nagoya Univ.), Kenji Sugase(Kyoto Univ.), Satoko Akashi(Yokohama-city Univ.), Toshio Ando(Kanazawa Univ.), Koza Tanaka(Tohoku Univ.), Hidekazu Hiroaki(Nagoya Univ.)

●Day 3 June 9 (Thu.) 15:00–17:30 (tentative)

3WCp

Theme	Nascent-chain biology approached by protein science
Organizers	Hideki Taguchi (Tokyo Tech.), Kenji Inaba (Tohoku Univ.)
Outline	All proteins experience states of the nascent peptidyl-tRNAs, defined as “nascent chains”, during the translation. Recently, accumulating evidences have revealed that nascent chains are directly involved in a variety of cellular processes including self-maturation and the quality control system. This workshop aims to introduce recent advances in the nascent-chain biology in regard to structural biology, reconstitution and molecular simulation.
Speakers	Tomoya Tsukazaki(NAIST), Tomonao Inobe(Univ. Toyama), Kunio Miki(Kyoto Univ.), Takeshi Yokoyama(RIKEN), Shoji Takada(Kyoto Univ.), Hideki Taguchi(Tokyo Inst. Tech.), Hiroshi Kadokura(Tohoku Univ.)

3WDp

Theme	Analytic and synthetic approaches to the molecular mechanism of the rotary motor proteins
Organizers	Katsumi Imada (Osaka Univ.), Ken Yokoyama (Kyoto Sangyo Univ.)
Outline	F/V-type ATPases are biological rotary motors. The movement of the ATPase subunits generated by ATP-hydrolysis rotates the central shaft, but the torque generation mechanism is still obscure. In this workshop we will discuss the rotational mechanism of the biological rotary motor revealed by various analytical techniques and recent synthetic approaches.
Speakers	Jun-ichi Kishikawa(Kyoto Sangyo Univ.), Takayuki Uchihashi(Kanazawa Univ.), Kaoru Mitsuoka(Osaka Univ.), Mitsunori Ikeguchi(Yokohama City Univ.), Rikiya Watanabe(Univ. Tokyo), Hiroyuki Terashima(Osaka Univ.)

3WEp

Theme	Artificial design and evolution system to create “neobiological molecules”
Organizers	Ryoichi Arai (Shinshu Univ.), Mitsuo Umetsu (Tohoku Univ.), Naoto Nemoto(Saitama Univ.)
Outline	Biomolecules including proteins, nucleic acids and sugar chains have been evolved for living organisms to survive in various environments. In this workshop, assembled scientists including young researchers, who take on challenges to develop new artificial biomolecules using various approaches, will drive a new trend to create “neobiological molecules”.
Speakers	Masumi Taki(Univ. Electro-Communications), Yoshiko Miura(Kyushu Univ.), Yoko Akazawa-Ogawa(AIST), Takamitsu Hattori(Tohoku Univ.), Takeru Suzuki(Saitama Univ.), Ryoichi Arai(Shinshu Univ.)