

Workshop Program

●Day 1 June 26 (Tue.) 16:00–18:30 (tentative)

1WA

Theme	35th Anniversary of Protein Engineering since 1983 【Session Language: English】
Organizers	Satoshi Akanuma (Waseda Univ.), Ryoichi Arai (Shinshu Univ.)
Outline	This year marks the 35th anniversary since Kevin Ulmer proposed “Protein Engineering”. In this workshop, the history of Protein Engineering from its dawn will be revisited. In addition, the developments and future prospects in the related research area will be openly discussed to innovate a new generation of Protein Engineering.
Speakers	Tairo Oshima (Kyowa Kako Co., Ltd.), Munehito Arai (The Univ. of Tokyo), Shun Hirota (NAIST), Yuki Ohmuro–Matsuyama (Tokyo Tech), Satoshi Akanuma (Waseda Univ.) Several oral presentations will be chosen from the posters

1WB

Theme	Breakthrough of structural biology brought by advanced technology of SACLA 【Session Language: Japanese】
Organizers	Eiichi Mizohata (Osaka Univ.), Eriko Nango (RIKEN)
Outline	X-ray free electron lasers (XFELs) are fourth-generation light sources that have become available only recently. The development of XFEL-based structural analysis has brought about an era in which the conformational change that occurs when a protein functions can be visualized with atomic resolution and fast time resolution. In this workshop, we introduce methods of structural analysis with XFEL, an industrial application research, and latest results of dynamic structural biology.
Speakers	Eriko Nango (RIKEN), Keitaro Yamashita (RIKEN), Mizuki Takahashi (DAIICHI SANKYO RD NOVARE CO., LTD.), Yoshitaka Bessho (Academia Sinica), Takehiko Tosha (RIKEN), Tomohiro Nishizawa (The Univ. of Tokyo) Oral presentations will NOT be chosen from the posters

1WC

Theme	Structure-Based Drug Discovery to Regulate Physiological Function 【Session Language: Japanese】
Organizers	Chojiro Kojima (Yokohama National University), Hidekazu Hiroaki (Nagoya University)
Outline	Physiologically active substances have been an important research target of biology for a long time. In recent years, advanced techniques for structural biology and drug discovery have been developed and open a new era of functional regulation by chemicals. In this workshop, we discuss current status and future presenting the latest researches.
Speakers	Chojiro Kojima (Yokohama National University), Hidekazu Hiroaki (Nagoya University), Tatsuya Sawasaki (Ehime University), Kohji Murase (The University of Tokyo), Several oral presentations will be chosen from the posters

1WD

Theme	Calorimetry of immunological proteins including therapeutic antibodies 【Session Language: Japanese】
Organizers	Susumu Uchiyama (Osaka Univ.), Masayuki Oda (Kyoto Pref. Univ.)
Outline	Calorimetry is an effective method for studying protein-protein interactions and protein stabilities from thermodynamic point of view. In this workshop, we will focus on the proteins related to immunological functions and presenters will demonstrate interpretation of obtained thermodynamic parameters and the relation to protein structure.
Speakers	Susumu Uchiyama (Osaka Univ.), Naoya Shinozaki (Daiichi Sankyo Co., Ltd.), Satoru Nagatoishi (The Univ. of Tokyo), Masayuki Oda (Kyoto Pref. Univ.), Satomi Inaba (JASRI), Masato Kiyoshi (NIHS) Oral presentations will NOT be chosen from the posters

1WE

Theme	Protein aggregation and membrane-less organelles 【Session Language: English】
Organizers	Yoshitaka Nagai (Osaka Univ.), Yutaka Kuroda (Tokyo Univ. Agr. Tech.)
Outline	In the past twenty years, protein aggregation has developed into an important research field because of its implication in drug discovery and life phenomena. Protein solubilization technology of amorphous aggregates has recently attracted much attention because of the high concentrations used in the formulation of therapeutic protein formulations and industrial enzymes. A new paradigm of cell biology has recently been proposed, where proteins and peptides naturally aggregates inside cells would form “membrane-free organelles”. In this workshop, we will discuss new concepts of protein aggregation from biophysical, biochemical and medical viewpoints as well as “membraneless organelle”.
Speakers	Yuji Goto (Osaka Univ.), Vladimir Uversky (University of South Florida), Osamu Onodera (Niigata Univ.), Yoshitaka Nagai (Osaka Univ.), Masato Kato (University of Texas Southwestern Medical Center), Yutaka Kuroda (Tokyo Univ. Agr. Tech.) Oral presentations will NOT be chosen from the posters

●Day 2 June 27 (Wed.) 16:00–18:30 (tentative)

2WA

Theme	Third APPA/PS/PSSJ Joint Workshop – IPR Seminar: Protein Science in the Asia Pacific Region: Building Understanding and Collaboration 【Session Language: English】
Organizers	Jisnusun Svasti (Chulabhorn Research Institute), James Ketudat Cairns (Suranaree Univ. Tech.), Satoshi Takahashi (Tohoku Univ.), Yuji Goto (Osaka Univ.)
Outline	The Asia Pacific Protein Association grew out of the desire of the Protein Science Society of Japan to build knowledge and interaction among protein scientists in the Asia Pacific region. Last year, at the 5th APPA Conference in Thailand, protein communities from 3 more countries joined APPA, making a total of 16 protein communities. As such, this Third APPA–PSSJ Workshop and IPR Seminar would showcase the success of this organization by providing a forum for young and experienced protein scientists who have become involved in the Asia Pacific Protein Association. Studies on protein structure, function and applications from the Asia Pacific region will be described by current APPA council representatives, with a special emphasis on the participation of junior council members and those who have recently joined the APPA.
Speakers	Jisnusun Svasti (Chulabhorn Research Institute) Pimchai Chaiyen (Vidyasirimedhi Institute of Science and Technology) Joe Yoon Ho Sup (Nanyang Technological University) Syed Abid Ali (University of Karachi) Md. Abu Reza (University of Rajshahi) Erinna Lee (La Trobe University) Ming Lei (Ninth People's Hospital, Shanghai Jiaotong University School of Medicine, Shanghai Institute of Precision Medicine) Weontae Lee (Yonsei University) David Hsaio (Academia Sinica) Truong Quoc Phong (Hanoi University of Science and Technology)

2WB

Theme	From protein research to medical and medical technology collaboration 【Session Language: Japanese】
Organizers	Koh Nakata (Niigata Univ. & Dent. Hosp.), Daisuke Tokita (Niigata Univ. & Dent. Hosp.)
Outline	Basic research on proteins has led to clinical research, drug seeds have been advanced, and collaboration between medicine and engineering has activated. We invite researchers who are realizing “bench-to-bedside” from various approach and discuss issues and prospects.
Speakers	Takeshi Ikeuchi (Niigata Univ.), Masaaki Komatsu (Niigata Univ.), Makoto Oishi (Niigata Univ.), Manabu Natsumeda (Niigata Univ.), Suguru Yamamoto (Niigata Univ. & Dent. Hosp.), Kenya Kamimura (Niigata Univ.) Oral presentations will NOT be chosen from the posters

2WC

Theme	Protein science under multimolecular crowding biosystems 【Session Language: Japanese】
Organizers	Itaru Hamachi (Kyoto Univ.)
Outline	In nature, protein molecules show a variety of functions under multimolecular crowding biosystems such as live cells or tissues. In this workshop, we introduce tools, molecules and methods for analysing and controlling proteins structure and functions in such complicated natural environments.
Speakers	Itaru Hamachi (Kyoto Univ.), Akio Ojida (Kyushu Univ.), Eri Chatani (Kobe Univ.), Shinya Hagihara (Nagoya Univ.), Kazuhito Tabata (The Univ. of Tokyo) Oral presentations will NOT be chosen from the posters

2WD

Theme	Development and Application of Research Tools for Analysis of Developmental Dynamics 【Session Language: Japanese】
Organizers	Ryoichiro Kageyama (Kyoto Univ.), Tomoki Matsuda (Osaka Univ.)
Outline	During tissue formation, gene expression dynamically changes to precisely control cell proliferation, differentiation, and migration. To understand the significance of such gene expression dynamics, various research approaches, such as live imaging, simulation, and optogenetic methods, have been developed. In this workshop, we show and discuss research progress made by using such research tools.
Speakers	Tomoki Matsuda (Osaka Univ.), Akihiro Isomura (Kyoto Univ.), Taiji Adachi (Kyoto Univ.), Kazuki Horikawa (Tokushima Univ.), Kazuhiro Aoki (NIBB) Several oral presentations will be chosen from the posters

2WE

Theme	Visualization of all atoms leads to understanding the characteristics of macromolecules 【Session Language: Japanese】
Organizers	Min Yao (Hokkaido Univ.), Taro Tamada (QST)
Outline	Visualization of all atoms using several techniques and quantum beams (mainly neutron) will lead us to the essential understanding of the characteristics of macromolecules. In this workshop, we will show the latest results in this field and discuss its future view.
Speakers	Toyoyuki Ose (Hokkaido Univ.), Shinya Fushinobu (The Univ. of Tokyo), Masaki Unno (Ibaraki Univ.), Sono Sasaki (Kyoto Institute of Technology), Masaru Tateno (Univ. of Hyogo) Several oral presentations will be chosen from the posters

●Day 3 June 28 (Thu.) 9:00–11:30 (tentative)

3WB

Theme	Protein aggregation and anti-aggregation 【Session Language: English】
Organizers	Kenji Sugase (Kyoto Univ.), Yasushi Kawata (Tottori Univ.)
Outline	There is a growing interest in protein stability in cellular (mimicking) environments. Crowded environments and hydrodynamic forces supposedly affect protein stability but the mechanism is not yet thoroughly understood. In this workshop, we discuss various factors affecting protein stability, focusing on protein (anti-)aggregation.
Speakers	Daichi Morimoto (Kyoto Univ.), Yasushi Kawata (Tottori Univ.), Yuji Sugita (RIKEN), Motomasa Tanaka (RIKEN), Erik Walinda (Kyoto Univ.) Several oral presentations will be chosen from the posters

3WC

Theme	Mechanisms of biological energy metabolism systems revealed by high resolution and dynamic structural studies 【Session Language: Japanese】
Organizers	Jian-Ren Shen (Okayama Univ.)
Outline	Energy is indispensable for all lives, and various organisms have gained various energy-acquisition systems. In this workshop, world-top class researchers will introduce their up-to-date results on the major energy metabolism systems including photosynthesis and respiration that are achieved by the use of high-resolution and dynamic structural studies of large membrane-protein complexes.
Speakers	Tomitake Tsukihara (Univ. of Hyogo), Yoshitsugu Shiro (Univ. of Hyogo), Yoshiki Higuchi (Univ. of Hyogo), Michi Suga (Okayama Univ.), Long-Jiang Yu (Okayama Univ.) Oral presentations will NOT be chosen from the posters

3WD

Theme	Expanding the Protein World: Beyond Anfinsen's Dogma 【Session Language: Japanese】
Organizers	Hideki Taguchi(Tokyo Institute of Technology)
Outline	Because it is only in the very recent years that our current conception regarding protein folding and the definition of open reading frames (ORFs) began to be recognized as being narrower than what the reality may be, there remains a largely unexplored field in and around translation process, the final information flow in the central dogma of molecular biology. This workshop aims to introduce recent advances in new field of protein science, expanding protein world.
Speakers	Hideki Taguchi(Tokyo Institute of Technology), Nobuyasu Koga(Institute for Molecular Science), Toshifumi Inada(Tohoku University) Several oral presentations will be chosen from the posters

3WE

Theme	Progress in the study on the mechanism of intramolecular information-transmission of protein 【Session Language: Japanese】
Organizers	Yasushige Yonezawa (Kindai Univ.), Naoyuki Miyashita (Kindai Univ.)
Outline	Allosteric proteins and transporter proteins share common biological role. Namely, they dynamically transfer information through proteins. In this workshop, forefront experimental and theoretical researchers introduce their works with respect to dynamic information transferring mechanism through protein, overlooking this exiting research area.
Speakers	Kouta Katayama (Nagoya Institute of Technology), Hiroko Kondou (Hiroshima City Univ.), Keisuke Saito (The Univ. of Tokyo), Takuma Shiraki (Kindai Univ.), Kouhei Takeshita (Osaka Univ.) Several oral presentations will be chosen from the posters

3WBp

Theme	Protein misfolding diseases looking through the lens of reverse viewpoint 【Session Language: English】
Organizers	Naomi Hachiya (TIRI), Noriko Fujiwara (Hyogo Coll. Med.)
Outline	Misfolding or accumulation of proteins are the molecular etiology of various protein misfolding diseases. This simple and important concept has not been enough discussed from the viewpoint of protein chemistry and clinical aspect. Researchers from different background gathered in this session, and have discussions that build new bridges of understanding.
Speakers	Naomi Hachiya (TIRI), Noriko Fujiwara (Hyogo Coll. Med.), Ryo Endo (RIKEN), Tomonori Kimura (NIBIOHN), Hiroki Miyahara (Shinshu Univ.), Yoshifumi Iwamaru (NARO), Masayuki Yamasaki (Ryukoku Univ.) Several oral presentations will be chosen from the posters

3WCp

Theme	Synthetic biology of Membrane proteins 【Session Language: English】
Organizers	Tomoaki Matsuura (Osaka Univ.), Ai Niitsu (RIKEN)
Outline	Synthetic biology involves designing novel biological molecules and systems. In protein science, it includes protein design and engineering, and evolutionary molecular engineering. This workshop focuses on the challenging target, membrane protein. Presenters including young researchers will share their latest research in computational design, artificial evolution, and cell dynamics control.
Speakers	Ai Niitsu (RIKEN), Patrick Barth (Swiss Federal Institute of Technology), Yoshiaki Yano (Kyoto Univ.), Satoshi Toda (University of California, San Francisco), Tomoaki Matsuura (Osaka Univ.) Several oral presentations will be chosen from the posters

3WDp

Theme	In-cell measurement techniques of biomacromolecules and beyond 【Session Language: English】
Organizers	Daisuke Kohda (Kyushu Univ.), Noritaka Nishida (The Univ. of Tokyo)
Outline	It is still a challenging task to measure the 3D structures and dynamics of biomacromolecules, such as proteins, within living cells. Currently, in-cell NMR method and cryo-electron tomography are highly promising to achieve this goal. We will overview recent technical advances and applications of those measurement techniques to discuss their future prospects.
Speakers	Takuo Yasunaga (Kyushu Institute of Technology), Saeko Yanaka (NINS), Yutaka Ito (Tokyo Metropolitan Univ.), Takashi Nagata (Kyoto Univ.), Kohsuke Inomata (RIKEN) Several oral presentations will be chosen from the posters

3WEp

Theme	Metals and Proteins: When their intimate relationship comes to an end 【Session Language: Japanese】
Organizers	Yoshiaki Furukawa (Keio Univ.), Taiho Kambe (Kyoto Univ.)
Outline	About 30% of total proteins perform physiological functions only after correctly acquiring metal ions. In order to understand essential roles of protein-metal interactions in life, we will compare in vivo dynamics between the "biometals" enabling metalloproteins to be functional and the "harmful metals" expressing toxicity to us.
Speakers	Taiho Kambe (Kyoto Univ.), Hitomi Fujishiro (Tokushima Bunri Univ.), Masatake Fujimura (NIMD), Fumio Kishi (Yamaguchi Pref. Gov.), Yoshiaki Furukawa (Keio Univ.) Several oral presentations will be chosen from the posters