Greetings from the President of the Biophysical Society of Japan

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The Biophysical Society of Japan (BSJ) was founded on December 10, 1960, under the presidency of Prof. Masao Kotani. To date, a total of 27 presidents have served the Society, and I am honored to undertake the administrative role as the 28th president for a 2-year term from the end of June 2019 to the end of June 2021. The first annual meeting was held in Osaka over a 3-day period in two parallel sessions, with 50 oral presentations and 4 invited talks. Currently, there are approximately 3000 members. Of these, 65% are regular members, 31% are student members, and 18% are female members.

The Society publishes the online-only journal *Biophysics and Physicobiology* as well as *SEIBUTSU BUTSURI* (bi-monthly, in Japanese) and organizes an annual meeting that provides display stands for instrumentation and a social hour for information exchange. Moreover, the general assembly is held during the annual meeting, when the management of the Society is discussed by the members. The wide variety of topics discussed during the annual meeting includes, but is not limited to, “Structure and function of proteins,” “Structure and function of nucleotides and lipids,” “Electronic states,” “Water, hydration,” “Dynamics of motor molecules,” “Photo-biology,” “Membranes,” “Development and differentiation,” “Function of the brain and nervous system,” “Non-equilibrium biological rhythms,” “Radiation biology,” “Evolution and the origin of life,” “Bio-measurement, bio-imaging,” and “Mathematical biology.” In addition to existing associations with cellular biology, molecular biology, and biochemistry, the Society is stepping into new collaborations with physics, chemistry, and engineering to create a core field of biophysics for the twenty-first century to include structural biology, information biology, and theoretical biology.

Since 2005, BSJ has awarded young BSJ members an “Early Career in Biophysics” award for outstanding presentations showing great potential for contributing to the advancement of biophysics. In the initial judging of these awards, ten candidates will be selected based on the documents submitted. The ten candidates will give oral presentations Biophysical Candidate Presentation Symposium at the annual meeting and up to five Biophysical Early Career Award winners will be selected. In addition, BSJ will award a student presentation award to outstanding presentations provided by students at the annual meeting (Fig. 1).

The BSJ is affiliated to the International Union of Pure and Applied Biophysics (IUPAB) and sends delegates to the International Congress of Biophysics held every 3 years, where several members of the Society enthusiastically participate. In 1978, the 6th IUPAB Congress was held in Kyoto under the leadership of the Society. Approximately 2000 biophysicists from around 30 countries participated, and the event stimulated the development of the Biophysical Society of Japan. The IUPAB Congress has accepted a proposal from the Society, and in 2023, the venue will again be Kyoto. The event appeals to biophysicists both in Japan and overseas and will support the further development of biophysics in the future. We are currently preparing for the congress and actively interacting with biophysical societies in other Asian countries. The 2nd Japan–China Biophysics Symposium was held in Kyoto in 1988, the 1st East Asian Biophysics Symposium was held in Hyogo in 1994, and the 5th East Asian Biophysics Symposium and the 44th Annual Meeting of Biophysical Society of Japan were jointly held in Okinawa in 2006.

At the start of the twenty-first century, the Society began to emphasize international activities, and the number of non-Japanese participants attending the annual meeting, including invited speakers, has considerably increased. From 2005, the Society came to an agreement with the Australian Society for Biophysics to allow the members of both Societies to participate in each other’s annual meetings with mutual recognition of qualifications. Since 2006, the official language of the

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Fig. 1 Photo with winners of the Student Presentation Award at the 57th Annual Meeting in 2019. The author is wearing a “happi” (coat worn at Japanese festival) on the right end of the front row. The left end of the front row is Prof. Yuki Sudo, one of vice presidents of BSJ

annual meeting has been English, encompassing all the presentations in the symposium—oral as well as poster presentations. The annual meeting currently attracts participants from Australia, India, New Zealand, and other Asian and Oceanian countries, and the internationalization of the Society is accelerating.

The growth in the activities of academic societies has necessitated the strengthening of their operational base. Therefore, the Biophysical Society of Japan, as a voluntary organization, was dissolved in 2013 and restarted in January 2014 as a general incorporated association “The Biophysical Society of Japan.” This has allowed the consolidation of the organization’s operations and enabled expansion of its activities.

In 2020, the Biophysical Society of Japan celebrates its 60th anniversary. There have been tremendous advances in the field of biology in these 60 years, including the discovery of several important functional proteins and the genomes of numerous species, including humans, have been sequenced. However, despite these discoveries, we lack sufficient knowledge for a holistic understanding of life. Considerable attention is currently focused on the importance of the spatiotemporal control of gene expression as well as of various physical factors, such as light, force, and temperature, which have long been studied in biophysics and are known to be involved in vital functions. Furthermore, structural biology is gaining importance as a tool for drug discovery. In addition, the combination of experimental biology with other fields, including theoretical biology, computational science, and information science, is undoubtedly essential for the future advancement of life sciences. The expectations placed on biophysics are as high as or even higher now than at the Society’s inception.

The members of the Board of the Biophysical Society of Japan, including me, will continue work to help the Society

serve as a forum for research exchange between members and to assist them in their research. We hope that this Special Issue of *Biophysical Reviews* focusing on the activities of the BSJ might encourage researchers outside of Japan to make contact with the Society so that we can help advance the pace of biophysical discovery together.

About the Author: At the request of the Editor here I briefly introduce my life and career. I am currently working as a professor in the Biology Laboratory at the Institute for Protein Research, Osaka University [<http://www.protein.osaka-u.ac.jp/en/laboratories/nanobiology>]. Currently my laboratory is developing new single-molecule imaging methods using fluorescent diamond nanoparticles (Igarashi et al. 2012) and techniques for measuring intracellular local temperature (Okabe et al. 2012).

I majored in biology at the undergraduate school, and moved from the doctoral course to the laboratory of Prof. Fumio Osawa, Graduate School of Engineering Science, Osaka University. Under the guidance of Prof. Toshio Yanagida, I studied the molecular mechanism of muscle contraction (Harada et al. 1987, Harada et al. 1990) and obtained a Ph.D. After that, I was engaged in the development of single-molecule fluorescence microscopy (Funatsu et al. 1995) in a research project by Prof. Yanagida. After working as a lecturer in the laboratory of Prof. Kazuhiko Kinoshita, Jr. at Keio University for two years from 1998, in 2000, I became an independent researcher at the Tokyo Metropolitan Institute of Medical Science. After that, I worked as a professor at Kyoto University for eight years from 2008 before moving to Osaka University in 2016. In Japan, the proportion of female professors in science and engineering is very low (for example, about 5% at Osaka University), and my career is very rare. I would like to do my best to increase the number of female researchers in the field of biophysics in Japan.

References

- Funatsu T, Harada Y, Tokunaga M, Saito K, Yanagida T (1995) Imaging of single fluorescent molecules and individual ATP turnovers by single myosin molecules in aqueous solution. *Nature* 374:555–559
- Harada Y, Noguchi A, Kishino A, Yanagida T (1987) Sliding movement of single actin filaments on one-headed myosin filaments. *Nature* 326:805–808
- Harada Y, Sakurada K, Aoki T, Thomas DD, Yanagida T (1990) Mechanochemical coupling in actomyosin energy transduction studied by in vitro movement assay. *J Mol Biol* 216:49–68
- Igarashi R, Yoshinari Y, Yokota H, Sugi T, Sugihara F, Ikeda K, Sumiya H, Tsuji S, Mori I, Tochio H, Harada Y, Shirakawa M (2012) Real-time background-free selective imaging of fluorescent nanodiamonds in vivo. *Nano Lett* 12:5726–5732
- Okabe K, Inada N, Gota C, Harada Y, Funatsu T, Uchiyama S (2012) Intracellular temperature mapping with a fluorescent polymeric thermometer and fluorescence lifetime imaging microscopy. *Nat Commun* 3:705

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