

Activities for Diversity in the Physics Field in Japan inferred from JPS and JSAP

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Abstract. Current topics on diversity and related issues in The Japan Society of Applied Physics (JSAP) and The Physical Society of Japan (JPS) are introduced. Women members assumed the presidency in both societies for “state years.” There are awards in both societies to encourage activities for women members. The influence of the COVID-19 pandemic is also discussed.

THE JAPAN SOCIETY OF APPLIED PHYSICS AND THE PHYSICAL SOCIETY OF JAPAN

There are two major academic societies related to physics in Japan: the Japan Society of Applied Physics (JSAP) and the Physical Society of Japan (JPS). The former serves as an academic interface between science and engineering and an interactive platform for academia and industry. The latter deepens understanding for nature, enriches our culture, and contributes to human welfare through search for the truth in the field of physics. This paper introduces current topics on diversity and related issues in both academic societies.

The most impressive event is that a woman member became the president in these two societies: Prof. Mutsuko Hatano for JSAP (2020–2021 FY) and Prof. Setsuko Tajima for JPS (2021 FY). Their appointments represent the first time a woman served as president for JSAP and the third time for JPS among 34 and 59 successive presidents, respectively. In JPS the first woman president was Prof. Fumiko Yonezawa in 1996, and the second was Prof. Masako Bando in 2006. Prof. Tajima was appointed the third woman president in April 2021. Prof. Hatano and Prof. Tajima had a common career path, with both having moved from industry to academia. The two presidents have provided the following messages.

President Hatano: In a new-normal era, we should integrate an intellectually virtuous cycle that focuses on diversity and inclusion, such as industry/government/academia and global co-creation, by aiming at the development of new academic fields and innovations. The strength and driving force of JSAP, which have always allowed us to stay ahead of the times, come from our willingness to change, not to create walls between fields, and to innovate. The reason why the JSAP is a more open and liberal society compared to other societies is due to our natural tendency to place a focus on globalization and diversity. However, the number of women members of the JSAP is still small. Women fractions are 7% for all members, 5% for members in private companies, and 8% for those in universities. As a measure, we promote the improvement of the diversity of representatives and the board of directors, which are the venues for decision-making. In order to increase the motivation of young female researchers and female students, we strengthen networking by utilizing the newly constructed place for mutual communication, the “JSAP Cafe.” The COVID-19 pandemic has also accelerated digital transformation to the JSAP. Last autumn and spring annual meeting with about 9,000 participants were

held online. We have noticed the benefits of making it easier for researchers who have difficulty traveling due to childcare and care for parents. Moreover, we feel happy that elementary, junior high, and high school students participated in the meeting. Now, we are challenging to prefer the hybrid (onsite and online) autumn meeting. We believe that the new meeting style has advantages in promoting diversity.

President Tajima: In the past two decades, the Physical Society of Japan (JPS) has been promoting gender equity. However, the proportion of women in the membership did not appreciably increase but reached only 6%. The main challenges are to attract high school girls to the physics world, and to encourage young women researchers to continue their career. In order to encourage high school girls to take physics course, we have been supporting many activities such as the Science Summer Camp for High School Girls for many years. One of our recent actions is the establishment of the “Fumiko Yonezawa” (the name of the first female president of JPS) memorial prize for woman members. In 2019, five young women members first received this prize, and four members were awarded in 2020. Another action is to increase the women directors in JPS. In this year, among sixteen members in the director board including the president and the vice-president, five members are women. This proportion of women (~30%) is large, compared to the proportion in the membership of JPS. One of the two auditors is also a woman. We also carefully consider the gender balance when choosing the selection committee members for several awards such as the best paper award for the Journal of Physical Society of Japan and the Progress of Theoretical and Experimental Physics. In order to foster women leaders, it is effective to intentionally assign women to important positions such as chair, director, dean, and president. The above-mentioned action of JPS follows this strategy. I believe the proverb saying “Experience is the best teacher.” In general, women (in particular, Japanese women) tend to avoid politically important positions. However, once a woman bravely accepts a role of leader for some organization, she will realize that she can do it “unexpectedly.” This was my own experience. If many excellent women will challenge leaders’ positions, they will change the world, eliminating the unconscious bias to women physicists.

NUMBER OF MEMBERS AND AFFILIATION

The number of JSAP members was about 19,000 in 2021. Among these members, 54% belonged to universities, 9% to public research institutes, and 31% to private companies. Women accounted for 7% of all members, 5% of members in private companies, and 8% of those in universities. The member record covers researchers and engineers both in academia and industry. The number of JPS members was about 15,000 in 2020, and about 1,000 were women. The majority of JPS members belonged to either a university or a research institute. The member record covers significant Japanese physics researchers. Each year, more than 1,500 individuals join as new JPS members, and women have been typically about 10% of that number since year 2000.

Figure 1 (left) shows the evolution in the percentage of women members of JPS and that of women directors. The percentage of women directors in JPS has been about the same as the percentage of women members from 2003 to 2015. From 2015, active promotion of women began in JPS in anticipation of the leadership of the women directors. As a result, the percentage of women directors in 2021 became higher than ever, but it was still around 30%. JSAP had a similar trend (Fig. 1, right). The percentage of women members is rising moderately, while that of women directors has increased sharply. The proportion of women in director positions exceeds the proportion of women among members. The pattern is the same for both JSAP and JPS. Women presidents and directors not only promote activities related to gender equality, diversity, and inclusion in each society but also encourage activities in general from the perspective of women, leading to the dawn of a new era.

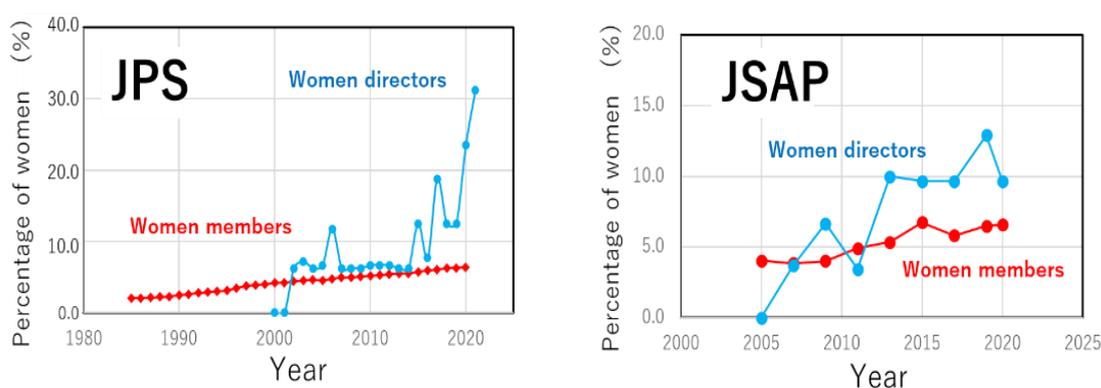


FIGURE 1. Percentages of members and directors who are women in JPS (left) and JSAP (right).

The good news for both JSAP and JPS is that the female proportion of student members is higher than that of all members, as shown in Figure 2. The current proportion of women could increase in the future. However, some students, regardless of gender, withdraw when they graduate from a university and get a job at a private company, so an increase in the female student percentage does not necessarily mean an increase in the proportion of female members in the future. There are many cases in which women withdraw from membership, as reported by the JPS in the 2017 WIP report [1].

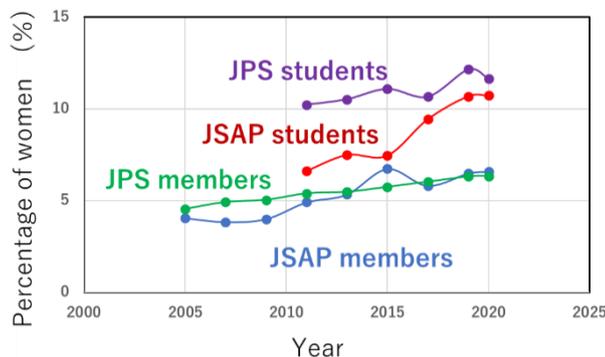


FIGURE 2. Percentage of women members and students in JSAP and JPS.

PROMOTION OF WOMEN RESEARCHERS

The JSAP established the “Promotion and Nurturing of Female Researchers Contribution Award” in 2009 based on a donation from Prof. Kashiko Kodate. Senior and young women researchers with great achievements and members or organizations contributing to nurturing of female researchers are awarded. The “Fumiko Yonezawa Memorial Prize” for women members was established by JPS in 2019 in commemoration of the first woman president of JPS. These prizes are expected to encourage activities of female researchers.

The JPS and JSAP have been recognizing the situation of women in physics. Our activities include (1) summer schools for female junior high and high school students, (2) daycare at annual meetings in both societies, (3) organizing diversity related symposiums in annual meetings, and (4) cooperation with other societies in Japan through The Japan Inter-Society Liaison Association Committee for Promoting Equal Participation of Men and Women in Science and Engineering (EPMEWSE). The liaison conducts a survey among 90 societies, including more than 15,000 researchers in Japan every four years, to propose policies for gender equality to the government.

COVID-19 PANDEMIC

The COVID-19 pandemic has also forced academic societies to fundamentally change systems of academic conferences, committee meetings, and so forth by using online systems. Virtual conferences are now frequently held and some are organized in hybrid style. Sophisticated knowledge and foresight of both presidents have been required for overcoming the crisis. The new meeting style appears to have advantages in promoting diversity, however, the influence of virtual meeting on networking is worrying. Young researchers may be forced to attend only online-style conferences to save on travel expenses. Researchers attending international conferences may work throughout the day due to time differences. Hybrid-style meetings which have the merits of both onsite and online styles should be considered.

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