

Activities for Diversity in Physics Field in Japan

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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. Woman members assumed the president in the both societies. There are awards in the both societies to encourage activities for woman members. Influence of the pandemic of COVID-19 is also discussed.

THE JAPAN SOCIETY OF APPLIED PHYSICS (JSAP) AND THE PHYSICAL SOCIETY OF JAPAN (JPS)

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 the welfare of human being, 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 women members assumed the president in these two societies: Prof. Mutsuko Hatano for JSAP (2020-2021 FY) and Prof. Setsuko Tajima for JPS (2021 FY). This is the first time for JSAP and the third time for JPS among 34 and 59 successive presidents, respectively. In JPS the first woman president is Prof. Fumiko Yonezawa in 1996, and the second woman president is Prof. Masako Bando in 2006. From April 2021, Prof. Tajima has been appointed as the third woman president. Both presidents, Prof. Hatano and Prof. Tajima, have a common career path that they moved from industry to academia. We have following messages from both presidents.

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 the JSAP Society, 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 researcher 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 women ratio 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 women 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 women ratio (~30%) is large, compared to the women ratio 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 leader's positions, they will change the world, eliminating the unconscious bias to women physicists.

NUMBER OF MEMBERS AND AFFILIATION

JSAP members are about 19,000 in 2021. 54% of the JSAP members belong to universities, 9% public research institutes, and 31% private companies. Women fractions are 7% for all members, 5% for members in private companies, and 8% for those in universities. The member record covers researchers and engineers both in academia and industry. JPS members are about 15,000 in 2020, and about 1,000 are women. Majority of the JPS members belong to either a university or a research institute. The member record covers significant Japanese physics researchers. Each year, more than 1,500 new members join as new JPS members, and the ratio of new women members is typically about 10% since year 2000.

Figure 1 (left) shows the evolution in the ratio 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, expecting the leadership of the women directors. As a result, the percentage of woman director in 2021 becomes higher than ever, but it is still around 30%. JSAP has a similar tendency (Figure 1 (right)). The percentage of women members is rising moderately, while that of women directors increases sharply. The proportion of women in directors exceeds the proportion of women in members. The tendency is the same for both JSAP and JPS. It is expected that women presidents and directors not only promote activities related to gender equality, diversity and inclusion in each society but also encourage all the activities from the perspective of women, leading to the dawn of a new era.

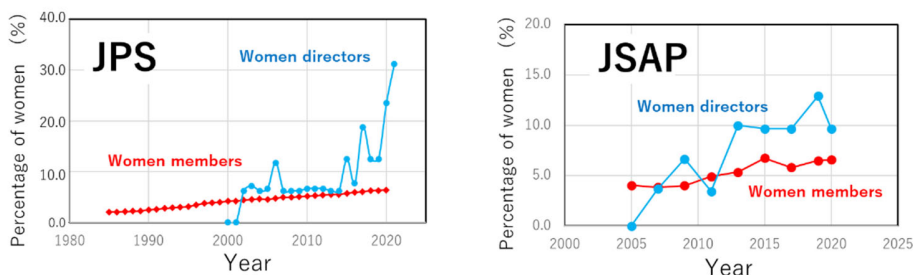


FIGURE 1. Percentage of women members and directors in JPS (left) and JSAP (right).

The good news for both JSAP and JPS is that the woman ratio of student member is higher than that of all members, as shown in Figure 2. It may be expected that the current proportion of women will increase in the future. However, some of students, regardless of gender, withdraw when they graduate from a university and get a job at a private company, so an increase in the woman student ratio does not necessarily lead to an increase in the woman ratio of members in the future. There are many cases where women withdraw from membership, as reported by JPS in the 2017 WIP-report [1].

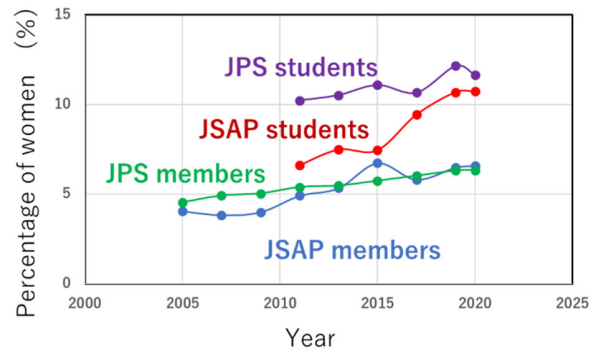


FIGURE 2. Percentage of women members and students in JSAP and JPS.

PROMOTION OF WOMEN RESEARCHERS

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

The JPS and JSAP have been recognizing the situation of the women in physics. Our activities include 1) summer schools for junior high and high school women students, 2) the daycare at annual meetings in both societies, 3) organizing diversity related symposiums in annual meetings 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 survey among 90 societies, more than 15,000 researchers in Japan every four years, to propose policies for gender equality to the government.

UNDER COVID-19 PANDEMIC

COVID-19 pandemic also forces academic societies to fundamentally change systems of academic conferences, committee meetings, etc. using online system. Nowadays virtual conferences are frequently held and some are organized in hybrid style. Sophisticated knowledge and foresight of both presidents are required for overcoming the crisis. It can be inferred that the new meeting style has advantages in promoting diversity, on the other hand, influence of virtual meeting on networking formation is worried. Young researchers may be forced to attend only the online-style conference due to saving travel expenses. Researchers attending international conference may work throughout the day due to time difference. Hybrid-style meeting with merit of both onsite and online styles should be considered.

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