

Report on Women in Plasma Physics workshop, 13 November 2023

2024.04.04 Tony Murphy and Anne Mai-Prochnow

A Mini-Workshop for Women in Plasma Physics was held as a Satellite Workshop during AAPPS-DPP2023 (7th Asia-Pacific Conference on Plasma Physics, Nagoya, 12-17 November 2023).

Date and Time of WS: Monday 13th November 2023, Time 19:00-21:00

The workshop was chaired by Dr Anne Mai-Prochnow, who organised the workshop with the assistance of a planning committee (Prof. Bharati Kakad, Prof. Izumi Murakami, Prof. Eunmi Choi, Dr Kanako Seki, Dr Nazish Rubab, Dr Choongki Sung, Dr Lu Wang, Dr Yuxue Zhang, Dr Natsumi Iwata, Prof. Mitsuru Kikuchi, Dr Tony Murphy).

There were about 38 attendees, including 7 men.

The workshop program was as follows.

- Welcome & Introduction Dr Anne Mai-Prochnow, WIPP Committee Chairperson: *Overall scenario related to women in plasma physics (or in research) based on current statistics/reports, etc.*
- Prof. Setsuko Tajima, Vice Chair of AAPPS Working Group for Women in Physics, Osaka University, Japan: *The current status of AAPPS Working Group of Women in Physics*
- Dr Mamiko Sasao, Doshisa University, Japan: *Physics education and unconscious gender bias*
- Dr Daniela Grasso, CNR Institute for Complex Systems and Politecnico di Torino, Italy: *Is it possible organize a gender balanced conference?*
- Prof. Anisa Qamar, Uni. of Peshawar, Pakistan: *Problems of Pakistani women to adopt physics as a career*
- Dr Weixin Guo, Huazhong University of Science and Technology, China: *Be brave enough to pursue your dreams---The growth experience of scientific researcher in universities*
- Open discussion led by WIPP committee member
- Concluding remarks and Vote of Thanks by WIPP Committee member

Dr Mai-Prochnow made several important points in her introduction. She noted that of the 462 participants of AAPPS-DPP2023 (based on contributed papers), only 16% were women. For the Asian countries with a large number of participants (China, Japan, India and Korea), between 11 and 21% were women. Of the prizes offered by the AAPPS-DPP, 7 out of 37 U30 Scientist and Student Award recipients, 4 out of 50 Young Research Award recipients, and none of the 12 Chandrasekhar Prize or 4 Plasma Innovation Prize recipients have been women.

Prof. Tajima presented resolutions adopted by the AAPPS Working Group on Women in Physics in 2023. These included that:

- All member societies should report on gender ratio of membership and board members;
- There should be at least 20% female representation on scientific meeting organising

committees;

- All award committee should have at least 1 women, and more women nominees should be encouraged;
- Awareness of unconscious bias should be increased;
- There should be a minimum ratio of women invited speakers for all scientific meeting;
- The fraction of women on organising and program committees should be reported.

Professor Sasao presented information from the Physics Education Research Committee in Science Council of Japan that showed a 13% gender gap in physics understanding, which decreased to zero after better teaching of concepts. Prof. Sasao noted a large gender gap in enrolment - physics always second last among STEM subjects, with reasons including the masculine image of physics and maths, and gender role stereotypes. Other problems were unconscious bias, the image of physicists, lack of childcare, and difficulties in communication among leaders.

Dr Grasso presented several recommendations for organising a gender-balanced conference, based on her success in organising a conference with equal male and female representation on the committee and as speakers. These included:

- Build up a gender-balanced committee;
- Cross-fertilise with fields where women are better represented if necessary;
- Have clear rules for the gender balance of invited speakers (equal numbers).

Prof. Qamar, who was the first female PhD and first female professor in her province, noted several problems facing Pakistani women seeking a career in physics. These included gender discrimination, cultural and social norms, lack of support, mentorship and role models, lack of access to education, the workplace environment, and the safety and security situation, especially for conferences. She presented recommendations for improving the situation, including exposing mid-career women to training in technology, and the provision of grants for young women.

Dr Guo mentioned initiative to support women researchers in China, including a 3-year increase in the age limit for project applications, and easier recognition for women at a comparable academic level.

In the discussion, participants were asked to enter responses to several questions via an app. The questions and representative answers were as follows.

How can we ensure that there are female members of the Board of Directors?

- Improve the number of women at the conference
- Nomination process needs to ensure gender diversity
- Encourage suitable female candidates to nominate
- The AAPS Working group for Women in Physics should be tasked with making recommendations to the Board that need to be followed
- Nomination process need to consider gender balance.
- Several approaches can be be used:
 - Promote a culture of inclusion
 - Set diversity goals and targets
 - Implement an equal opportunity policy

- Educate and raise awareness
- Mentorship and sponsorship programs

Should there be a link between the Division of Plasma Physics and the AAPPS Working Group for Women in Physics?

- Yes
- Each division could send a member
- Yes - a person could be selected by the Board of Directors, for example (and invited to report at Board meetings)
- The WIP WG should discuss the way to invite the division's WIP.
- Yes, it is good to connect with the WIP WG of AAPPS.
- Yes, it is good to connect between DPP and WIP WG
- Yes

Should there be a DPP prize for women scientists?

- More and more comparable with our percentage
- This seems superficial if women aren't winning the 'normal' prizes
- Sure; fully support and necessary
- Regarding the poster prizes - we need guidelines about the career level and gender balance of the recipients
- Not only do we need guidelines for poster prizes, but we need to be involved in writing the guidelines
- Then there would be only additional competition between women. Highlighting the gender doesn't help the balance between men and women
- Sure, it would encourage female researchers
- Yes, it will enhance women leaders, which will inspire the mid-career women.

Should there be formal targets for female invited and plenary speakers?

- Many more
- There should be a formal agreed upon percentage of women who are giving talks and are part of the conference
- Reasonable and necessary things to push forward!
- Definitely - we should aim for a high target (50%?)
- The program committee should consider gender balance more when nominating invited and plenary speakers.
- In the field of physics, women have been historically underrepresented, and formal targets can help address this imbalance by encouraging event organizers to actively seek out and invite qualified female speakers

How can we encourage men to fight with us for gender equity?

- By showing how the problem affects not just women but all people within society and proving the benefits using research
- Education about the importance of diversity for successful research groups
- Send a survey to all conference attendees
- 1. Encourage men with conversation 2. Celebrate achievements

Summary:

The session was well attended, provocative and enjoyable. Most attendees stayed until the end and took part in informal discussions.

Based on the presentations, discussions and the responses to the questions, the following points can be emphasised.

- 1) There should be women on the Board of Directors; the nomination process should be designed to ensure this.
- 2) There should be a link between the DPP and the AAPPS Working Group for Women in Physics; perhaps the Board of Directors can facilitate this
- 3) There should be a formal target for female invited and plenary speakers
- 4) Organising committees should include female members (at least 20%)
- 5) Men can and should assist to improve the situation for women
- 6) There was no consensus about whether a DPP prize for women researchers should be instituted; however, women should be encouraged to nominate for existing awards and selection committees should have at least one female member.