

Conference on Global Approach to the Gender Gap in Mathematical,
Computing and Natural Sciences: How to Measure It, How to Reduce It?,
ICTP, Trieste, November 4-8, 2019

Discussion session on the Gender Gap in Physics

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Introduction

The Discussion session on the Gender Gap in Physics took place at the ICTP, Trieste, on November 5, 2019. It was attended by 18 people from different countries and was coordinated by Gillian Butcher, current chair of the Working Group on Women in Physics of the IUPAP and Silvina Ponce Dawson, Vice-President at Large with Gender Champion duties of the IUPAP. The past president of the IUPAP, Bruce McKellar was present as well.

The session started with a presentation of the main activities that the IUPAP has been organizing to survey and improve the situation of women physicists across the globe. The deep involvement of the IUPAP with the women in physics agenda started in 1999 when its General Assembly approved the creation of the Working Group (WG) on Women in Physics (WiP). What was supposed to be a temporary group to survey and analyze the situation of women in physics and to suggest ways to improve this situation has been in existence since then upon subsequent approvals for its continuation by the IUPAP General Assembly. The Working Group has not only been deeply involved in the organization and dissemination of surveys (from the very first ones, only in English, that collected 1000-2000 responses, through the Global Survey of Physicists delivered in 8 languages and responded by 15,000 people in 2009-2010 to the Global Survey of Scientists that is discussed at large in the present report), but also organized a series of activities that brought the issue upfront and made the physics community aware that there was a problem that called for specific actions. One of the relevant periodic activities of the WG is the organization of the International Conference on Women in Physics (ICWIP) triennially. ICWIPs have been organized in Paris (2002), Rio de Janeiro (2005), Seoul (2008), Stellenbosch (2011), Waterloo, Canada (2014) and Birmingham, UK (2017) and the following one will take place in Melbourne in 2020. Between 200 and 300 physicists from over 60 different countries attend these conferences which constitute the main forum to discuss the ways to improve the situation and increase the number of women physicists, to exchange ideas on science and gender-related issues and to learn from regional differences. The participation is through country teams and financial support is provided to people from countries in need. This has led to the creation of a large network of women physicists that expands all over the world. All ICWIPs finish with an assembly where recommendations and resolutions to be presented to the IUPAP GA are issued. The activities that take place at ICWIPs are documented in Conference Proceedings that have been published by AIP Publishing so far. The resolutions and recommendations can be found at the WG webpage, wgwip.df.uba.ar, which also contains information on country teams and all WG activities. All ICWIPs also hold different types of workshops to equip female physics with tools to advance in their careers. This has inspired the organization of career development workshops in various parts of the world, particularly, at the ICTP in Trieste. The years with no ICWIPs, most of the funds that the WG receives from the IUPAP are used to support the travel of female physics students and physicists from developing countries that are willing to attend a conference, school or workshop

outside their home institution.

During the 5th ICWIP that took place in Waterloo, Canada, in 2014, it was decided to write a declaration of principles drawing inspiration from the Baltimore Charter of the American Astronomical Society. This led to the “Waterloo Charter on Women in Physics”, a declaration of principles endowed with a long list of recommendations to advance towards a more inclusive and diverse practice of physics. This charter will be presented to the 2020 GA of the IUPAP for its approval and endorsement. Its final version is available at the WG webpage.

Besides the creation and continuous renewal of the WG, the IUPAP has undertaken other measures to advance the WiP agenda. In 2011 it decided that one of its Vice-Presidents at Large would be assigned Gender Champion duties. The position was proposed to strengthen connections between the IUPAP commissions and the WG and to assist in tracking the representation of women in all IUPAP activities. Based on all this experience the IUPAP has approved various rules to guarantee that women are represented as organizers, speakers and attendees of IUPAP sponsored and supported conferences and that conference participants receive information on inclusiveness in physics. An anti-harassment policy has also been established for such conferences. In particular, it has been defined that meetings with female participation of less than 10% are not accepted. The organizers of IUPAP sponsored conferences are required to include a plenary session on inclusiveness and diversity in physics and to name advisors to handle cases of harassment that might occur at the conference.

After this introduction that was useful for many participants that did not know about the existence of some of the activities of the IUPAP, the session was then open for discussion. We present in what follows the key points of this discussion and the recommendations that it led to.

Discussion and recommendations

Most of the remaining part of the session was devoted to discussing how to promote the activities that have been organized on a regular basis so far and what new activities could be incorporated to the tools that the IUPAP and the physics communities have been using to increase the pool of women physicists and improve their situation. Participants described activities they knew of and explained the difficulties that they have encountered. As we have already mentioned, career development workshops for female physicists and scientists or with a gender perspective have been organized in various countries. These workshops, however, are far from reaching out to a representative fraction of the physics community unless we are able to have them replicated in most countries on a regular basis. In order to achieve this goal it is indispensable to have people trained to teach in these workshops. It was then suggested that workshops be organized to train trainers. Petra Rudolf, current president of the European Physical Society, mentioned that they are doing that within their society. She also stressed the need of having scientists that knew how to talk to policy makers so that the changes could be implemented into policies with a much larger impact. The discussion also addressed the issue of harassment and of the poor visibility of women's careers and achievements. Everybody agreed that solving the problems associated to these issues is very hard due to behaviors that are deeply rooted in culture and that these difficulties exist even in countries and institutions with specific policies to try to solve them. Getting the community at large involved into the discussion that leads to the devise of policies was mentioned as one option to overcome these difficulties. Ways

to increase the number of female physicists who are awarded prizes and to help establish far-reaching networks were also discussed.

Recommendations

1. It would be good to train scientists to talk to policy makers. That could be done on a regular basis at institutions or as special seminars during scientific conferences.
2. It would be good to train trainers of career development workshops with a gender perspective so that workshops could be organized in as many countries and institutions as possible.
3. It is important to involve the local communities in the discussion of new policies devised to reduce the gender gap and advance towards a more inclusive practice of science. In this way community members can embrace them more easily as their own.
4. It would be good to suggest to all scientific unions that they take measures to guarantee that women are within the pool of people considered for prizes. In this regard, inspiration can be drawn from the European Physical Society which does not allow to give prizes unless there is a certain percent of women among the considered candidates.
5. It would be good to develop an “app” that could help the networking of female scientists and under-represented groups.
6. It would be good to have webinars with the type of activities that are part of career development workshops. In this way anybody with Internet access could benefit from the various types of training sessions. Factoring in a gender-perspective in these workshops could allow us to spread the view of a more inclusive practice of science.