

## **Report on the activities of the IUPAP Working Group on Women in Physics**

The Working Group on Women in Physics was formed by resolution of the Atlanta IUPAP General Assembly with the following mandate:

- to survey the present situation and report to the Council and the liaison committees
- to suggest means to improve the situation for women in physics.

Since its creation in 1999 the Working Group has performed a variety of activities to fulfill its mandate. Among them, the International Conferences that have been held every three years since 2002, constitute the main forum where experiences and data from a large number of countries are exchanged. The last International Conference took place in Stellenbosch, South Africa, in April 2011. It had 233 participants (including 20 men and 40 students) from 59 countries, 36 of them developing countries and 20 non-members of IUPAP. At the Conference, 6 plenary talks by successful women physicists were delivered. Attendants were organized in country teams that reported on the situation of women physicists in their countries at a Poster Session. Participants were also able to present their own scientific research at another Poster Session. Five parallel workshops were organized covering the following subjects: Personal Professional Development, Improving the workplace environment for women and Leaving and entering a career in physics, Gender studies and the role of women in physics, Attracting girls to physics, Scientific networking in disciplines. Workshops were highly participative. The last day, the conclusions of the workshops were presented at a final assembly. Based on these conclusions, the resolutions to be presented at the IUPAP General Assembly were put together and voted. Outreach activities constituted an important part of the conference, with talks delivered for the general public and for schools. All plenary talks and other activities were documented by a video produced through a partnership with Dr. Mae Jemison, who sponsored its production, and made available at: <http://physics.yale.edu/4th-international-conference-women-physics>. Thanks to a grant from the Sloan foundation the book "Out of the shadows: Contributions of Twentieth-Century Women to Physics" (N. Byers and G. Williams, eds.) was given to all conference participants.

The fact that the Conference took place in South Africa made it possible for a relatively large proportion of people from African countries to attend it. This participation showed the need to establish an effective network of women physicists in the continent. This is one of the tasks that the Working Group is currently upholding. Another important contribution of the Conference was the presentation of a preliminary analysis of the Global Survey of Physicists. This survey, which was carried out by the American Institute of Physics, was the first one of its type delivered in 8 different languages. It was responded by about 15,000 people from 130 countries, including men and women. A preliminary analysis of its results shows the importance of early educational experiences for both men and women in choosing physics. It also indicates that women physicists may have more difficulty finding professional opportunities than men, including invitations to speak, supervisory experiences, serving on committees or as journal editors. The family and personal lives of women

physicists seem to be more affected by their career than those of men. The attitude of women towards their working environment is also different from that of men, with women being less likely to express dissatisfaction or raise concerns when not comfortable. Women physicists also seem to get discouraged more often than men. Completing the analysis of the survey will clarify some of these points and indicate actions that could be taken.

Other important activities of the Working Group have been the support of women physicists of developing countries to attend scientific conferences outside their own countries through the [IUPAP Travel grants for Women](#) and making useful information available through its web page (currently at <http://wgiwip.df.uba.ar>). Being exposed to the international scientific community and having the opportunity to show its own work is key for the career advancement of any scientist. It is usually harder for women to have this chance and the IUPAP grant seeks to alleviate this inequality. Providing access to useful information is another key component to help women develop their careers.

The Working Group has been very active in trying to advance the agenda of Women in Physics. Much work has been done. This includes:

- Establishing a global network
- Carrying out a global survey with clear results
- Initiating groups in 56 countries

Much remains to be done, including

- Extracting regional trends from the Global survey
- Growing country groups in developing countries
- Growing regional groups across regions with small numbers of physicists, particularly, in Africa
- Promoting the creation of traveling workshops to improve the training of physics educators at all levels
- Disseminating the results of the Global Survey of Physics and take actions based on them
- Becoming involved in the development of new resources useful for women physicists and for the Physics community at large, making them available on the Internet.

It is the aim of the groups we expect will be created in the future to apply what has been learned and demonstrate change.