



Report of the Working Group on Women in Physics

Working Group 5

2014-2017

1. Working Group

The Working Group met for three days in 2016, and held three meetings Birmingham, UK, in 2017 during the 2017 IUPAP International Conference on Women in Physics.

2. Conference

The International Conference on Women in Physics (ICWIP) is a unique triannual event that brings together women and men in physics from all over the world to discuss the latest research in physics as well as gender and diversity issues in the physics community. The conference is the major mechanism adopted by IUPAP, through its Working Group on Women in Physics, to foster the advancement of women in physics, and the attraction of girls into physics, across the world.



ICWIP2017 was hosted by the IOP¹ in partnership with the Universities of Birmingham, Nottingham and Warwick and held in Birmingham, in the UK, July 2017.

- 48 countries were represented and 212 participants attended
- Roughly 1/3 of the participants, primarily from less developed countries, received Travel Grants from funds raised by the IUPAP Working Group and the LOC
- Nobel Peace Laureate Malala Yousafzai spoke as a guest and interacted with delegates
- 6 Plenary lectures were given by Dr Gabriela Gonzalez, Prof Francisca Nneke Okeke, Prof Xucun Ma, Prof Dame Athene Donald, Prof Halina Rubenstein-Dunlop, and Prof Teresa Lago
- Scientific papers were presented
- Representatives from each country presented a summary of the current status of women in physics in their country
- 5 interactive workshops on education, gender studies, professional development, cultural bias and workplace improvement were organised
- Participants attended the award of the President's Medal of IOP to Prof Dame Jocelyn Bell Burnell
- Prof Dame Julia Higgins addressed the banquet; sponsors Northrop Grumman provided a talk on the James Webb Space Telescope
- a new art exhibit 'Finding Space' featured photos of the delegates, in a soundscape created from sounds recorded in the research labs of female physicists
- the Waterloo Charter for Women in Physics, which provides guidelines for policy and environments, was specifically discussed
- Continual Professional Development workshops were hosted on a new approach to engaging girls with science qualifications and careers, Unconscious Bias, and How to Get Published; and the Quantum Technology Lab hosted tours
- Several travel grant holders spent an extra day in University of Birmingham labs to foster collaboration with researchers
- Recommendations were formulated and will be published
- Press releases were disseminated
- Proceedings will be published, thanks to AIP².

The denial of visas is an ongoing concern for the conference and for the Working Group. Seven visas were denied or delayed long enough to prevent participation. Several bidding enquiries for hosting of an ICWIP Conference in 2020 have been made.

Proceedings of the 5th ICWIP in Canada 2014 have been published by AIP² and are available at <http://scitation.aip.org/content/aip/proceeding/aipcp/1697> . All papers are open access.

¹ Institute of Physics (London)

² American Institute of Physics

3. ICSU Collaborative project on the Gender Gap in Science

The second major mechanism adopted by the Working Group has been to survey the conditions for women in physics across the world. The baseline Global Survey of Physicists (2011) was remarkable for having 14932 respondents in 8 languages.

Instigated by IUPAP Working Group 5, a proposal was developed by IUPAP, IMU³ and IUPAC⁴, and successfully submitted to ICSU⁵. The collaborative ICSU project is led by Prof Marie-Francoise Roy, of IMU, and is called *A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure It, How to Reduce It?*. More can be found at <https://icsugendergapinscience.org/>. The project covers a Joint Global Survey, a bibliometric study of publication profiles, public awareness, particularly in developing countries, and the implementation of good practice.

The project now includes ten partners: IMU, IUPAC, IUPAP, IAU⁶, IUBS⁷, ICIAM⁸, IUHPST⁹ UNESCO¹⁰, GenderInSITE¹¹, and OWSD¹². The ICSU Budget is €100 000 each year for 3 years and the contributing Unions, including IUPAP, provide an additional €5 000 each per year. The funding for Task 1, the Joint Global Survey, is allocated and used for the Workshops listed below and preparation through AIP for the survey.

The first Workshop took place in Paris in June 2017, and plans for the tasks and partners have been drawn up. Four IUPAP representatives are on the Executive committee, of whom 3 attended. The Joint Global Survey questionnaire is being drafted by Rachel Ivie of AIP. Three regional workshops will address regional input and responses for improvement of the draft questionnaire, as well as dissemination and gathering of the results. These workshops are in Africa (AIMS¹³, Cape Town, 1-2 Dec. 2017), Latin America (Bogotá, 22-24 Nov. 2017) and Asia (Taipei, 7-8 Nov. 2017).

4. Travel Grants

Year	2014	2015	2016	2017
Applications	108	100	30	122
Awards	48	26	23	57 (only 49 able to attend)

³ International Mathematical Union

⁴ International Union of Pure and Applied Chemistry

⁵ The International Council for Science

⁶ International Astronomical Union

⁷ International Union of Biological Sciences

⁸ International Council for Industrial and Applied Mathematics

⁹ International Union of History and Philosophy of Science and Technology

¹⁰ United Nations Educational, Scientific and Cultural Organization

¹¹ Gender in Science, Innovation, Technology and Engineering

¹² Organization of Women in Science for the Developing World

¹³ African Institute of Mathematical Sciences

Travel Grants through IUPAP are made to assist women in less developed countries to attend conferences. In ICWIP years (2014 and 2017) funding is raised by the Working Group, particularly by Jackie Beamon-Kiene (APS¹⁴).

5. IUPAP

The WG thanks President Prof Bruce McKellar for his continual attention to real change for women in the physics community of practice. He has prompted several actions from the WG. These include comment on the proposed Big Data Accord, the provision of information about women physicists across the world for commission elections, and drafting of a Harassment Policy for IUPAP, a statement of which is to be required for conferences.

Liaison with Prof Alinka Lépine-Szily, IUPAP Gender Champion, has proved to be very useful indeed, since the Gender Champion provides data on gender within IUPAP activities.

The WG now liaises with commissions as follows:

- C13 (Prof Lilia Meza-Montes): the WG assisted in organising a session at ICPE¹⁵
- C14 (Dr Renee Horton and Dr Dina Izadi).

It is proposed that the International Day of Women in Physics should be 11 February each year, and therefore that it should coincide with United Nations International Day of Women and Girls in Science. WG members prompted physics awareness on 11 February 2017, particularly in Latin America.

6. Special acknowledgements

A special acknowledgement is made to Jackie Beamon-Kiene for her unflagging work for Women in Physics across the world.

The work of Nicola Wilkin (U. of Birmingham) and Jessica Wade (Imperial College London) in organising ICWIP2017 is acknowledged with gratitude.

¹⁴ American Physical Society

¹⁵ International Conference on Physics Education

Appendix: Membership during 2014-2017

Silvina Ponce Dawson, Argentina (Immediate Past Chair) (to 2017)

Manling Sui, China Beijing (to 2017)

Gillian Butcher, UK (Vice-Chair)

Igle Gledhill, South Africa (Chair)

Renee Horton, USA (to 2017)

Dina Izadi, Iran

Lilia Meza Montes, Mexico

Kwek Leong Chan, Singapore

Shohini Ghose, Canada

Prajval Shastri, India

Nicola Wilkin, UK (Associate)

Jackie Beamon-Kiene, USA (Associate)

Apriel Hodari, USA (2017)

Kuijuan Jin, China Beijing (2017)

Francisca Nneke Okeke, Nigeria (2017)