



NEWS BULLETIN, July 2013

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This Bulletin gives a brief account of some events that have taken place since the latest General Assembly (GA), 31 October - 4 November 2011, London, and some news. The items included are:

Contents

1	MEETINGS	2
2	PERSONNEL ISSUES	2
3	COMMISSIONS AND WORKING GROUPS	2
4	CONTACTS WITH ICSU	3
5	IUPAP & GLOBAL SCIENCE FORUM (GSF)	4
6	REPORT ON ICSU UNIONS MEETING, PARIS, 28-30 APRIL, 2013, BY BRUCE MCKELLAR	4
7	REPORT ON AN AFRICAN SCHOOL (ASS- ESMA) BY KENNEDY REED	6
8	CONFERENCES	8
9	THE MISSION OF IUPAP	8
10	ACKNOWLEDGEMENTS	8

1 Meetings

- The next meeting of General Assembly (GA) will be held

5 - 7 November 2014 in Singapore.

It will be hosted by Institute for Advanced Studies (IAS) together with National University of Singapore (NUS).

- The next meeting of the IUPAP Council and Commission Chairs (referred to as C&CC meetings) will take place at CERN, October 1-2, 2013.

2 Personnel issues

- On 12 June 2012 Robert (Bob) Kirby-Harris retired from Institute of Physics (IOP) and at the same time he stepped down from his position as the Secretary General of IUPAP. A presentation and retirement lunch for Bob was organised by The Institute of Physics where he also received a presentation and a thank you letter on behalf of IUPAP.

- On 29 June 2012, Stuart Palmer, who is the Honorary Secretary of IOP, was unanimously elected by our Council, as our new Secretary General. For information about him see:

[http://en.wikipedia.org/wiki/Stuart_Palmer_\(physicist\)](http://en.wikipedia.org/wiki/Stuart_Palmer_(physicist))

3 Commissions and Working Groups

By tradition, the Commission Chairs submit written reports on their activities at the C&CC meetings. [I have not received any urgent information from any Commission to transmit.]

- **Working Group on Energy (WG12)** transmits the following information, through its Chair Jon Samseth:

The IUPAP working group on energy was initiated at the 27th General Assembly in London 2011 and formally established at the Executive Committee meeting in Rio de Janeiro in October 2012.

The mandate proposed by WG12, as of July 2013, reads:

The working group (WG 12) shall review current energy issues and through International Union of Pure and Applied Physics (IUPAP)

make briefs available for the global physics community and policy makers as well as the public at large.

The group meets once or twice a year to review selected topics taking advantage of local experts where the meeting is held.

The topics considered should include energy supply, carriers, storage and use. Both advanced and low tech systems shall be looked into.

This proposal will be presented at the C&CC meetings in October.

4 Contacts with ICSU

ICSU (<http://www.icsu.org/>) is our “mother organization” and as such we pay a yearly fee to her and respond to her frequent questions and requests even though we are not sure of the impact of our input. Examples of work that we have done or are doing are:

- Free circulation of scientists (prompted by difficulties faced by a researcher at SESAME). I (CJ) was charged to deal with this issue and contacted ICSU which has a Committee on Freedom and Responsibility in the Conduct of Science (CFRS). See

<http://www.icsu.org/publications/cfrs>

At the end I was disappointed that all my efforts were in vain. ICSU couldn't help. I was informed by a representative from ICSU that:

We also noted that the sanctions list procedures were highly problematic from a human rights perspective, because they did not allow for an appeal by an independent court, and that this had been criticised repeatedly by the legal community, but to no avail.

- I have been asked by ICSU to provide an input on “open access and evaluation by metrics”. Currently this is a hot and widely discussed issue at the academic environments. As an example, after a number of enquiries I was informed that the Global Science Council has already produced a document on this issue. See <http://www.globalresearchcouncil.org/>

In IUPAP we have a Working Group (WG2) on “Communication in Physics” Therefore I have asked its Chair, Gene Sprouse, to advice us on how to pursue this matter. Gene is since 2007 the Editor-in-Chief of the the American Physical Society, a body which early on looked at the issue of open access and its Council in 2009 adopted the following statement:

The APS supports the principles of Open Access to the maximum extent possible that allows the Society to maintain peer-reviewed high-quality journals, secure archiving, and the Society's long-term financial stability, to the benefit of the scientific enterprise.

See http://www.aps.org/policy/statements/09_2.cfm)

- In order to strengthen our relations with ICSU, our President-Designate Bruce McKellar and our Secretary General took part in an ICSU meeting in April this year. A report on this meeting (written by Bruce and slightly modified by Stuart) is found further down in this Bulletin.

5 IUPAP & Global Science Forum (GSF)

On the renewed request by the Global Science Forum, addressed to me, I have started a dialogue with them concerning how IUPAP can contribute with its know-how in the field of astroparticle physics and interact with their Astroparticle International Forum (APIF). See also "Item14b" presented at the GA in London and

<http://www.oecd.org/sti/sci-tech/theastroparticlephysicsinternationalforumapif.htm>

After some discussions, I contacted Michel Spiro, who initially suggested our involvement, through creation of an IUPAP committee [see pages 11 and 44 in

<http://www.oecd.org/sti/sci-tech/47598026.pdf>

He will chair our APPIC (AstroParticle Physics International Committee). He has received all the relevant correspondence and documents, and has been asked to consult with the Chairs of C-4, C-11, C-12 and C-19.

6 Report on ICSU Unions Meeting, Paris, 28-30 April, 2013, by Bruce McKellar

The Secretary-General, Stuart Palmer, and the President-Designate, Bruce McKellar, represented IUPAP at the International Council of Science (ICSU, see <http://www.icsu.org>), meeting with its Member International Scientific Unions in Paris from 28 to 30 April, 2013.

The purpose of the meeting was three-fold

To encourage the Unions and the International Council of Science (ICSU) to know each other better,

To advise the Unions of the major activities of ICSU and to encourage their participation,

To give Unions the opportunity to provide their advice to ICSU on its activities.

ICSU groups its Unions into clusters, the Mathematical, Physical and Chemical Sciences Cluster, the Geosciences Cluster, and the Biological Sciences Cluster. The full list of the Unions is at

<http://www.icsu.org/about-icsu/our-members/?icsudocid=scientific-unions>. While it has been a regular feature of these meetings that the the Geosciences Cluster, and the Biological Sciences Cluster have met as a group, this time Stuart organised the first ever meeting of the “Physical, Mathematical and Chemical Sciences cluster” of ICSU. It was a getting to know you meeting, and explored the different ways the Unions were organised, and ways in which we may be able to work together in the future. Amongst our cluster IUPAP is the only one who is very heavily dependent on subscription payments to fund our activities.

ICSU has a number of relatively new interdisciplinary programs, which it is encouraging all of its Unions to become involved with as appropriate.

1. Integrated Research on Disaster Risk (IRDR)

(<http://www.icsu.org/what-we-do/interdisciplinary-bodies/irdr/>) is a decade-long, interdisciplinary research programme sponsored by ICSU in partnership with the International Social Science Council (ISSC), and the United Nations International Strategy for Disaster Reduction (UN-ISDR). It is a global initiative seeking to address the challenges brought by natural hazard events, mitigate their impacts, and improve related policy-making mechanisms.

2. Programme on Ecosystem Change and Society (PECS)

<http://www.icsu.org/what-we-do/interdisciplinary-bodies/pecs/>) is a new research endeavour that integrates social and natural science and aims to provide the understanding needed for wise stewardship of landscapes and seascapes. This programme is jointly sponsored by ICSU and UNESCO to the question “how do policies and practices affect resilience of the portfolio of ecosystem services that support human well-being and allow for adaptation to a changing environment?”

3. Health and Well-being in the Changing Urban Environment

(<http://www.icsu.org/what-we-do/interdisciplinary-bodies/health-and-wellbeing-in-the-changing-urban-environment/>)

is the newest interdisciplinary program. It intends to use systems analysis to guide the study of the interaction factors influencing our Health and Well-being in Cities. The establishment of the programme was approved at the ICSU General Assembly in 2011 and it is still under development.

4. Future Earth (<http://www.icsu.org/future-earth>) is a new 10-year international research initiative that will develop the knowledge for responding effectively to the risks and opportunities of global environmental change and for supporting transformation towards global sustainability in the coming decades. Future Earth will mobilize thousands of scientists while strengthening partnerships with

policy-makers and other stakeholders to provide sustainability options and solutions in the wake of the UN Conference on Sustainable Development (Rio+20) held in Rio de Janeiro in 2012.

The Future Earth Program is the central part of the ICSU future plan and it would be very appropriate for IUPAP to find ways to join in. Our new Working Group on Energy could develop appropriate interactions, but there will be other opportunities for us to get involved.

A very encouraging outcome of the meeting was the discussions with other Unions exploring possibilities for co-operation in science for development in collaboration with ICSU and its regional offices. The IUMRS, International Union of Materials Research Societies, the IAU, International Astronomical Union and the IUCr, International Union of Crystallography are among those with whom further discussion will occur.

7 Report on an African School (ASSESMA) by Kennedy Reed

The former Chair of C13 (Commission on Physics for Development), Kennedy Reed, has kindly contributed an invited article to this Bulletin. His report is found here below:

African School on Electronic Structure Methods and Applications (ASESMA)

The African University of Science and Technology in Abuja, Nigeria has been selected to host the next African School on Electronic Structure Methods and Applications (ASESMA). ASESMA 2014 will be the third school in an IUPAP-endorsed series that is planned biennially from 2010 to 2020. The ASESMA series was jointly initiated by the Commission on Physics for Development (C13) and the Commission on Computational Physics (C20), with the objective of helping to build a critical mass of computational materials science expertise and capabilities in Africa.

This School Series is based on theory and computational methods for predicting and understanding properties of materials through calculations at the fundamental level of electronic structure. With the development of faster and cheaper computers, the availability of open source software, and improving networking infrastructure in Africa, it is becoming possible for African researchers to be contributing participants at the forefront in international research efforts on important problems in materials science. The ASESMA series builds upon this progress and focuses on the issues in materials science most relevant to Africa.

The format of the Schools is a combination of theoretical lectures and hands-on calculations using workstations, together with evening lectures on topical issues. There is an effort to have coordinated talks on theory, computation, and on special research projects relevant to the School. Every student executes a calculation at the Centre for High Performance Computing (CHPC) in Cape Town, a facility made available for all African scientists.

The inaugural school in the series, ASESMA 2010, was held at the African Institute for Mathematical Sciences (AIMS) in Cape Town, South Africa and was a huge success by all measures. Articles on this inaugural school were published in *Nature Physics* [*Nature Physics*, 6, 830 (2010)], and *Physics Today* [*Phys. Today* 64, 28 (2011)]. ASESMA 2012, the second school in the series, was held at Moi University in Eldoret, Kenya, and was also hugely successful. Kenya's role in organizing and hosting ASESMA 2012 was instrumental in Kenya becoming a member of IUPAP. Much of the success of the schools in 2010 and 2012 was due to an innovative program of mentors, supported by the International Center for Materials Research (ICMR) in Santa Barbara, U.S.A. The mentors are mainly post-doctoral fellows who worked with the participants one-on-one during the School.

A mini-workshop organized as a follow-up activity to ASESMA 2012 was held in January of 2013 at Khartoum University in Khartoum, Sudan. One of the important outcomes of this mini-workshop was the start of collaborations between Sudanese scientists and participants from South Sudan. This is noteworthy considering the recent history of conflict and tension in that region. A second follow-up mini-workshop was held in Braazaville, Congo in April of 2013.

The International Center for Theoretical Physics (ICTP) is the major partnering sponsor of the ASESMA series. Other sponsors have included the American Physical Society (APS), the U.S. Liaison Committee, and many others. The International Council for Science (ICSU) and the Chinese Supercomputing Research Centre (CSRC) provided substantial support for ASESMA 2012 .



8 Conferences

- Our Gender Champion, Marcia Barbosa, informs us that the Proceedings of the **4th IUPAP International Conference on Women in Physics** are now available on the internet. See:

<http://proceedings.aip.org/resource/2/apcpcs/1517/1?isAuthorized=no>

- For a list of IUPAP Commission Conferences in 2013 see

<http://www.iupap.org/> and http://www.iupap.org/conferences/approved/page_59700.html

9 The mission of IUPAP

Last but not least I would like to quote some excerpts from our mission that we should all keep in mind:

to assist in the worldwide development of physics;

to stimulate and promote international cooperation in physics;

to help in the application of physics toward solving problems of concern to humanity.

Please note that a considerable fraction of our income goes to sponsorship of suitable international meetings.

The success of our organization in meeting its mission depends crucially on the work done at our Commissions and Working Groups. I hope that all the members of our Council, Commissions and Working groups will feel like IUPAP - ambassadors. Thank you for keeping up the good work.

10 Acknowledgements

I wish to thank several members of the IUPAP Council, in particular Marcia Barbosa, Stephen Lea, Robert Lambourne, and Victor Zadkov, for sharing their thoughts, about the structure of this News Bulletin, with me. Above all, I am grateful to our President-Designate, Bruce McKellar for his remarkable dedication to IUPAP and for his very useful suggestions.