
International Union of Pure and Applied Physics Meeting of Executive Council and Commission Chairs, Institute of Physics, London, UK, 31 October – 1 November 2011

REPORTS FROM IUPAP COMMISSIONS

To be added to the minutes: Appendix [A]: Compilation of reports of individual Commissions

The following commission reports were presented by commission chairs or representatives of commission chairs.

1.1 C2: Commission on Symbols, Units, Nomenclature, Atomic Masses and Fundamental Constants-SUNAMCO (Peter Mohr)

- 1.1.1 The commission has not awarded the Young Scientist Prize. There is a possible future revision of the SI units, with possible changes on the definitions of the kilogram, kg, the ampere, A, the kelvin, K and the mole, mol, which are to be referenced, respectively, to the Planck constant, h , the Boltzmann constant k , the elementary charge, e , and the Avogadro constant N_A . Should this be implemented, it will signal a fundamental paradigm shift. The general conference on weights and measurements has given its approval, but it is not yet clear when this will be implemented.

1.2 C3: Commission on Statistical Physics (Henri Orland)

- 1.2.1 The main activity of the C3 Commission since July 2007 has been the organization of the Statphys24 conference which took place on 19 – 23 July 2010, in Cairns Australia. Among the highlights, there were plenary talks by R. Baxter, C.N. Yang (Nobel laureate), M. Freedman (Fields medalist) and W. Ketterle (Nobel laureate). There were about 700 participants, and the conference was very successful.
- 1.2.2 The Boltzmann medal was jointly awarded to John Cardy of Oxford University and Bernard Derrida of Ecole Normale Supérieure, Paris. The formal ceremony of the Boltzmann medal took place during the Statphys24 conference.
- 1.2.3 The Young Scientist Prize was awarded to Davide Marenduzzo from the University of Edinburgh. The formal ceremony of the Young Scientist Prize took place during the Statphys24 conference.
- 1.2.4 After the audition of 3 candidates, it was decided that the next Statphys25 conference would be organized in Seoul, at the Seoul National University, in July 2013.
- 1.2.5 A list of recommendations for the C3 Commission to be conveyed to the IUPAP General Assembly of London 2011 was elaborated.

1.3 C4: Commission on Cosmic Rays (Suresh Tonwar)

- 1.3.1 The 32nd International Cosmic Ray Conference (ICRC 2011), <http://icrc2011.ihep.ac.cn>, co-sponsored by the IUPAP was held at Beijing, China, during August 11-18, 2011. The proceedings of the ICRC 2011 will be available soon. The following prizes were presented during the inaugural session of the ICRC 2011: O'Ceallaigh medal to Alan Watson (UK), Kanwal and Gaurang Yodh prize to W. Vernon Jones (USA), IUPAP-TIFR Homi Bhabha medal and prize to Sir Arnold Wolfendale, Duggal award to Lukasz Stawarz (Poland) and the IUPAP Young Scientist awards to Viviana Scherini (Italy) and Jose Bellido Caceres (Australia). During the C4 meetings held at Beijing during the ICRC 2011, it was decided to organize the 33rd ICRC 2013 at Rio de Janeiro, Brazil, in July 2013. Also, the Commission gave its tentative approval for organizing the 34th ICRC in The Hague in July 2015.
- 1.3.2 The 12th International Conference on Topics in Astroparticle and Underground Physics (TAUP 2011), co-sponsored by IUPAP, was held at Munich, Germany, during September 5-9, 2011. The proceedings of the conference will be published in a forthcoming volume of the Journal of Physics: Conference Series and will be available online.

1.3.3 The Commission reviewed the proposals to organize conferences to commemorate the 100th anniversary in 2012 of the discovery of cosmic rays; and agreed to support the following meetings: "Centenary Symposium 2012 : Discovery of Cosmic Rays" at the University of Denver, USA, in June 2012, "Cosmic Ray Origin: Victor Hess Centennial Anniversary" at Mysore, India, during July 2012 as part of the 2012 COSPAR General Assembly and "100 Years of Cosmic Ray Physics: Anniversary of the Victor Hess Discovery" at Bad Saaraow/Pieskow in Germany rather close to the place where the 5th and the confirming balloon flight of Victor Hess landed in 1912. The next meeting of the commission will take place in the USA at the Celebration of the Discovery of Cosmic Rays

1.4 C5: Commission on Low Temperature Physics (Robert Hallock)

1.4.1 The main activities of the commission include the co-sponsorship of the 26th International Conference on Low Temperature Physics (LT26) held on 10 – 17 August 2011 in Beijing, China with about 1200 participants who included many students from China.

1.4.2 Three IUPAP Young Scientist Prizes were awarded at the LT26 Conference. The recipients were Eunseong Kim, from KIAS in Korea, Max Hofheinz from CEA, Saclay in France, and to Mika SuSillanpaa of Aalto University in Finland.

1.4.3 This year, 2011, is the 25th anniversary of the discovery of high T_c oxide superconductors. In addition to fundamental interest in the mechanism of superconductivity, the prospect for the industrial application of such materials is bright. The year 2011 also marks the centennial discovery of superconductivity by Kammerlingh Onnes. A remarkable amount of work and synthesis of new materials has emerged since then.

1.5 C6: Commission on Biological Physics (Jose N Onuchic)

1.5.1 At the International Conference in Biological Physics, the C6 Commission endorsed the names of candidates to be chosen as C6 members.

1.5.2 The organization of the International Conference on Biological Physics (ICBP) is one of the main activities of the C6 Commission. This is a triennial conference co-sponsored by the International Union of Pure and Applied Physics (IUPAP). The 7th conference (ICBP2011) was hosted by the Center for Theoretical Biological Physics at the University of California, San Diego, June 19-24, 2011. The first three days (June 19-21) of the ICBO2011 included training workshops, and the remaining three days (June 22-24) focussed on research symposia and plenary lectures.

1.5.3 The 7th ICBP meeting was held at a time when biological physics is taking its place as a compelling frontier of research with rapidly growing interest in physical sciences departments worldwide. Three days before the Conference, a workshop was arranged for post-graduate students as part of the Science Virtual Institute launch by the National Science Foundation of the USA to help train students on the Physics of living systems. More information on the 7th ICBP available at the conference website <http://icbp2011.ucsd.edu>. The next symposium will take place in China.

1.6 C8: Commission on Semiconductors (Klaus von Klitzing)

1.6.1 The main activity of the commission is the organization of a type A conference, the International Conference in Physics of Semiconductors (ICPS). The next ICPS2012 will be held in Zurich, Germany, on 29 July – 2 August 2012. Following extensive consultation with colleagues in the USA earlier in 2011, it was also agreed to recommend that the ICPS2014 should be held in Austin Convention Center in Texas, USA, from 10 – 14 August 2014.

1.6.2 On the Young Scientist Prize in Semiconductor Physics (YSP-SP), the commission agreed that the previous process for deciding the prizes, with two prizes chosen from four presentations, has been a very successful model. The next competition will be held with a deadline of January 2012 to enable the shortlist to be passed on to the ICPS2012 program committee.

- 1.6.3 The commission received from national liaison committees recommendations for the future C8 membership, with several further nominations made directly by the present C8 officers in an attempt to maintain a representative body with a wide demographic spread in its membership.

1.7 C9: Commission on Magnetism (Sadamichi Maekawa)

- 1.7.1 One of the main activities of C9 is to organize the International Conference on Magnetism, which is held every three years under the auspices of the IUPAP. The last one, the 18th ICM, took place in July 2009 in Karlsruhe, Germany. The 19th ICM will be held in July 2012 in Busan, Korea. The venue of 20th ICM in 2015 has been decided to be in Barcelona, Spain.
- 1.7.2 The ICM has not been held in North America since 1985. The C9 Committee members have been discussing with representatives of the magnetism community in the USA and in Canada, and with those of the Institute of Electrical and Electronics Engineers (IEEE) about the possibility of ICM being organized in North America in 2018.
- 1.7.3 The ICM Magnetism Award and Neel Medal, and the IUPAP Young Scientist Medal in the field of Magnetism are presented at ICM. The call for nominations for these Awards has been made in August 2011. The winners will be selected by the C9 Committee and presented at the 19th ICM in Korea.

1.8 C10: Commission on the Structure and Dynamics of Condensed Matter (Samuel Bader)

- 1.8.1 C10 announced the winner of its 2012 Young Scientist Prize, Andrew D. Christianson of Oak Ridge National Laboratory in the USA. This is the third year that C10 has made the award. The nominees were received from institutions in 10 countries, with a total of 14 commissioners participating in the evaluation of nominees.
- 1.8.2 The commission voted to allocate its funds, the amount of €6,000 to C13 to subsidize student travel to the African School on Electronic Structure Methods and Applications, to be held in Kenya in 2012. This is regarded by C10 as a worthy programme which the commission has previously endorsed when it was pioneered by C13 Commission on Physics Development and C20 Commission on Computational Physics.
- 1.8.3 C10 proposed one new (type A) conference in 2012 for IUPAP endorsement: The 10th International Conference on Materials and Mechanisms of Superconductivity (M2S2012), Washington DC, USA, July 29 - Aug. 3, 2012.

1.9 C11: Commission on Particles and Fields (Patricia McBride)

- 1.9.1 The annual meeting of the IUPAP C11 Commission was held on August 21, 2011 at TIFR in Mumbai, India on the eve of the 2011 Lepton Photon Symposium. At the meeting, the commission reviewed recently sponsored conferences, discussed the upcoming conferences seeking sponsorship, reviewed progress on upcoming conferences and selected the location for the 3rd Technology and Instrumentation in Particle Physics (TIPP) conference.
- 1.9.2 The 2010 IUPAP C11 Young Scientist Prizes were awarded at the ICHEP 2010 conference in Paris to Florencia Canelli (Enrico Fermi Institute, University of Chicago; and Fermilab) and to Jose Santiago (Departamento de Física Teórica y delCosmos and CAFPE, Universidad de Granada). The 2012 IUPAP C11 Young Scientist Prizes will be awarded at the ICHEP conference in Melbourne. The biennial C11 prizes honour achievement by two young scientists in the fields of experimental and theoretical particle physics.
- 1.9.3 The next International Conference on High Energy Physics (ICHEP), which is occurs on a two year cycle, is planned to be held in Melbourne, Australia from July 4 - 11, 2012 (www.ichep2012.com.au). This will be the first ICHEP conference held in the Southern Hemisphere. It is expected to be a major event for the field with anticipated new results including results from the LHC.

- 1.9.4 The XXV International Conference on Neutrino Physics and Astrophysics, Neutrino 2012, (neu2012.kek.jp) is planned for Kyoto, Japan from June 3-9, 2012. This is the major conference in the field of neutrino physics and normally attracts about 400 participants. The previous conference in this series was held in Athens, Greece in 2010 (www.neutrino2010.gr).
- 1.9.5 The 2013 Lepton-Photon symposium will be hosted by SLAC National Accelerator Laboratory in northern California and the 2014 ICHEP conference will be held in Valencia, Spain.
- 1.9.6 The IUPAP C11 sponsored the 2nd International Particle Accelerator Conference (IPAC) which was held from Sept 4 - 9, 2011 in San Sebastian, Spain. (www.ipac-2011.org)
- 1.9.7 The second IUPAP sponsored Technology and Instrumentation in Particle Physics (TIPP) conference (conferences.fnal.gov/tipp11) was held from June 9 -14, 2011 in Chicago. The conference attracted about 500 registered participants and more than 400 submitted abstracts.

1.10 C12: Commission on Nuclear Physics (Dan-Olof Riska)

- 1.10.1 The annual meeting of C12 was held in Cambridge on 25 July 2011 at the Massachusetts Institute of Technology. The meeting followed the annual meeting of the IUPAP Working group 9 on International Cooperation in Nuclear Physics.
- 1.10.2 At the meeting the Commission selected a full slate of members and officers for C12 for the period 2012-2014, which consisted of continuing members and new members that had been proposed by the National liaison committees.
- 1.10.3 The commission also reaffirmed its candidates for the renewal of the IUPAC-IUPAP Joint working group on evaluation and adjudication of super-heavy elements. The proposed candidates have been communicated to the chief Secretary General of IUPAC, David Black, by IUPAP President-designate Cecilia Jarlskog. As IUPAC has responded with counter-proposals that do not take into account the C12 recommendation, the suggestion is that the C&CC meeting should endorse the position of IUPAP President Sukaketsu Ushioda, that the IUPAP members of the joint working group be selected from the experts proposed by IUPAP/C12.

1.11 C13: Commission on Physics Development (Kennedy Reed)

- 1.11.1 Commission 13 has held a total of three meeting during its current term in contrast to previous practice when only one meeting was held for the entire term. All meetings were held at the offices of the ICTP in Italy. A total of thirteen members attended the last meeting, and these included four associate members.
- 1.11.2 One of the most exciting developments has been the collaboration between C13 and C20 in a very successful partnership which saw the launching of the ASESMA (African School on Electronic Structure Methods and Applications), project. After the launch of the project in Cape Town, Meisenburg, two articles appeared in Nature, and a range of sponsors have since been engaged to provide further support. The next ASESMA will be in Kenya in 2012. There is a challenge though, because the logistics involved in holding the school in Kenya may prove more difficult since South Africa is relatively well resourced.
- 1.11.3 The commission extends its gratitude to the chair of C10, Samuel Bader, for his recommendation to bring the C10 funds to lend more support to the ASESMA project. Despite the promises of funding from a variety of resources, C13 would like to see the IUPAP maintaining ownership of the ASESMA project since it was conceived and launched under its (IUPAP's) auspices. The other exciting project the commission participated in was the launch of the African Physical Society.
- 1.11.4 C13 members have also facilitated contacts with Physicists in Kenya, and Kenya is currently trying to become a member of IUPAP. Links are also being facilitated between Kenyan Physicists and other relevant IUPAP Commissions.

1.12 C14: Commission on Physics Education (Pratibha Jolly)

- 1.12.1 During its current triennium, Commission 14 continued to work proactively towards the fulfilment of its missions and objectives. The commission participated in the organization of the following conferences: viz ICPE 2009: Development and Innovation in Physics Education, held in Bangkok, Thailand, 18-24 October 2009, The X Inter American Conference on Physics Education: Teaching of Modern Physics at Different Levels, University of Antioquia, Medellin, Colombia, 6-10 July 2009, Physics Community and Cooperation, 3rd European Physics Education Conference, University of Leicester, United Kingdom 17-21 August 2009, Teaching and Learning Physics today: Challenges? Benefits? Reims, France, 22-27 August 2010, and ICPE 2011: Training Physics Teachers and Education Networks, Mexico City, Mexico, 15-19 August 2011.
- 1.12.2 The commission plans to participate in the organization of the following future conferences: Eteet World Conference on Physics Education on the theme The Roles of Context, Culture and Representations in Physics Teaching & Learning, Istanbul, Turkey, 1-6 July 2012, XI Inter American Conference on Physics Education: Teaching of Modern Physics at Different Levels, University of Antioquia, Medellin, Colombia, 6-10 July 2013, and the ICPE 2013 which will take place at Charles University, Prague, Czech Republic, in summer 2013
- 1.12.3 The PHYSWARE Educate the Educator Series of Workshops promise to be amongst the most important activities of C14. As a direct follow-up to the World Conference on Physics and Sustainable Development (WCPSD) held in Durban, South Africa, in 2005, the first workshop titled PHYSWARE: A collaborative workshop on low-cost equipment and appropriate technologies that promote undergraduate-level, hands on physics education throughout the developing world was organized at ICTP, Trieste during February 2009. Subsequently, in October 2009, IUPAP (on behalf of C14) signed a 5-year Memorandum of Understanding with ICTP to organize PHYSWARE workshops. The venue will be at ICTP Trieste and a developing country in alternate years.
- 1.12.4 The commission continued to publish its newsletter with regularity, twice a year, primarily in electronic form. A small number of copies are printed and distributed at conferences. Ian Johnston, Professor Emeritus, University of Sydney, continues to be the editor. Commission member Zulma Gangoso, University of Cordoba, Argentina will take charge as the editor from April 2012 issue. It is published twice a year Issues back to 1995 are available at <http://web.phys.ksu.edu/icpe/newsletters/>.
- Grants from IUPAP and UNESCO have enabled C14 to print in India 2000 copies of the book *Connecting Research in Physics Education with Teacher Education, Volume II*, with Matilde Vicentini and Elena Sassi as general editors.
- 1.12.5 IUPAP Young Scientist Prize in Physics Education: The commission has decided to institute this prize. Research will include educational development such as development of instructional materials as well as Physics Education Research; the impact of research/ development will be judged in local contexts. R&D experiences in informal education will be considered at par with work in formal settings. There have been delays in setting up processes for selection.
- 1.12.6 Annual Meetings: In addition to being actively in contact on a regular basis via email and conference calls, the Commission members have met annually on the sidelines of various conferences organized/ supported by the commission. Formal meetings were held on (i) in October 2009 on the sidelines of ICPE 2009 in Bangkok; (ii) in August 2010 on the sidelines of the GIREP-MPTL-ICPE Conference in Reims; and (iii) in August 2011 on the sidelines of ICPE 2011 in Mexico City. All meetings were well attended. The next meeting will be in July 2012 on the sidelines of WCPE in Istanbul.

1.13 C15: Commission on Atomic, Molecular and Optical Physics (Burkhard Fricke)

- 1.13.1 The Commission C15 members have met on 27 July 2010 in Belfast, Northern Ireland during the International Conference on Photonic, Electronic and Atomic Collisions 2011 (ICPEAC). The ICPEAC this year was attended by more than 600 physicists from about 30 countries. A good number of the 200 students were supported by the commission. This makes clear that the commission's involvement and support from the side of IUPAP has been valuable.

- 1.13.2 The field of Molecular and Optical Physics is dominated by the two large International Conferences, *viz* ICAP and ICPEAC, which are held successively every 2 years. From this point of view due to the high self-organization of the physicists in our field, IUPAP does not play as dominant a role as it does in several other fields. This is the reason why the commission only met once a year.
- 1.13.3 Most important for C15 was the selection of the IUPAP Young Scientist Prize in AMO Physics. The overall response with 30 nominations was very good. Ian Spilman from NIST in Gaithersburg and the University of Maryland was selected to be the 2011 prize winner for research on colliding Bose-Einstein condensates.
- 1.13.4 It was decided to have the next Commission meeting during the ICAP in Pailaiseau near Paris next year in July 2012.

1.14 C16: Commission on Plasma Physics (Padma Shukla)

- 1.14.1 The C16 Commission held three formal business meetings, each on the occasion of two major plasma physics conferences sponsored by the commission. These were the International Conference on Phenomena in Ionized Gases (ICPIG), held in Cancun, Mexico (12-17 July 2009), the 15th International Congress on Plasma Physics (ICPP), held in Santigao de Chile, Chile (August 8- 13, 2010), the 30th International Conference on Phenomena in Ionized Gases (ICPIG), held in Belfast, UK on 28 August -2 September 2011. In addition, C16 members, both regular and associate, had frequent and fruitful e-mail exchanges, and discussions at other meetings, e.g. at the 6th International Conference on the Physics of Dusty Plasma, held in Garmisch-Partenkirchen, Germany, 16-20 May 2011, sponsored by IUPAP as a category B conference, for improving the visibility of C.16 at international scales.
- 1.14.2 The commission supported the 6th International Conference on the Physics of Dusty Plasmas (ICPDP), Garmisch-Partenkirchen, Germany, May 16-20, 2011, and International Topical Conference on Plasma Science (ITCPS): Strongly Coupled Ultra-Cold and Quantum Plasmas, Lisbon, Portugal, 12-14 September 2011.
- 1.14.3 One of the most important tasks and perceived assets in the Commission work is the institution by IUPAP of the Young Scientist Prize (YSP) in Plasma Physics. C16 decided to alternate the award on a two year basis between the low-temperature and high temperature plasmas, stemming from its desire to link the award specifically and alternatively to the IUPAP sponsored conferences (*viz* ICPIG and ICPP), and to bestow the award on the occasion of these conferences. The response of the community to this new prize was extremely gratifying. The IUPAP C.16 YSP recipients were Dr Pascal Chabert (2007) of Ecole Polytechnique, Paris, Dr. Michael van Zeeland (2008) of General Atomics, San Diego, USA, Dr. Timo Gans (2009) of Queen's University of Belfast, UK, Dr. Matthiew Hole (2010) of ANU, Australia, and Dr. Iliya Dodin (2011) of Princeton University, USA for their significant contributions to low-and high temperature plasma physics in the early stage of their scientific career.
- 1.14.4 The IUPAP C.16 continued to make major efforts to involve scientists from less favoured countries and female plasma physicists across the globe to its international plasma physics conferences (*viz* ICPIG, ICPP, ICPDP). The scheduled organization of of ICPP 2012 in Stockholm is a further endeavor in this direction. C.16 also insisted on a true internationalization of the Programme Committees of its sponsored conferences.

1.15 C17: Commission on Quantum Electronics (Alan Shore)

- 1.15.1 During the last three years C17 has re-commenced sponsorship of conferences. In addition it has awarded its first Young Scientist prize.
- 1.15.2 C17 acknowledges the assistance of Professor Ken Baldwin, ANU, Canberra, Australia for facilitating the presentation of the prize during the Plenary Awards Ceremony at CLEO Pacific Rim / IQEC, Sydney, Australia.
- 1.15.3 C17 is anxious to modernise its name and looks forward to that being effected as soon as is practicable.

1.16 C18: Commission on Mathematical Physics (Herbert Spohn: Represented by Asao Arai)

- 1.16.1 Most of the activities of C18 were linked to the XVIIth International Congress on Mathematical Physics to be held in Aarhus, Denmark, in July 2012. The International Scientific Committee met end of May at the Institute Henri Poincare, Paris. The committee worked on the list of plenary speakers and on the choice of session organizers. There are 11 sessions ranging from Dynamical Systems, Equilibrium and Non-Equilibrium Statistical Mechanics to Quantum Information Theory, Quantum Field Theory, and Strings. Preceding the congress there will be a 2-days young researcher's symposium. By now this event has a long tradition and is very well accepted by the community. There will be a series of 2 - 3 hours lectures, delivered by well-known experts and covering topics of current interest, aimed at Ph.D. students and postdocs.
- 1.16.2 As was the case three years ago, the commission will decide on the three recipients of the IUPAP Young Scientist Prize in Mathematical Physics. C18 has set up a prize committee. The prize has been announced already through the electronic media. The committee is expected to arrive at a decision by the end of November.

1.17 C19: Commission on Astrophysics (Victoria Fonseca)

- 1.17.1 Past symposia. C19 has supported the biennial Texas Symposia on Relativistic Astrophysics for about a decade, most recently the 25th in Heidelberg, December 6-10, 2010. For 2011, permission was requested and granted to mortgage the odd-numbered year funding to support a meeting in Burkina Faso, on formation and evolution of galaxies, in December 2010. The meeting was attended by about 200 people from 27 countries, including several African nations, with the IUPAP money used to pay for their travel.
- 1.17.2 Future symposia. The next Texas Symposia on Relativistic Astrophysics will take place in December 2010 in Brazil.
- 1.17.3 Young Scientist Prize: There were about a dozen nominations for the 2009 and 2010 prizes. Both were presented, and the prize talks given, at Heidelberg 2009: Poonam Chandra (India/Canada). The Most Distant Explosions in the Universe (radio observations of GRBs and SNe) 2010: Thomas Schweizer (Germany). Crab in Gamma Rays (MAGIC data). We have not checked whether they got their manuscripts in on time for the proceedings.
- 1.17.4 2011-2012: The prizes for 2011 and 2012 will be presented at 2012 Texas symposium and the opportunity to nominate young astrophysicists will be advertised early in 2012.
- 1.17.5 Associate members. The new associate members would normally be appointed in 2012, and C19 should do something to facilitate this process as the current this associate members have been on-board for several terms.

1.18 C20: Commission on Computational Physics (James Gubernatis)

- 1.18.1 The Conference on Computational Physics (CCP2011) was held 30 October–3 November 2011 in Gatlinburg, TN USA with Dr. Malcolm Stocks of the Oak Ridge National Laboratory as the organizer. Topics included: materials/condensed matter theory and nano-science, strongly correlated systems and quantum phase transitions, quantum chemistry and atomic physics, high energy physics, astrophysics and plasma physics, complex systems – chaos and statistical physics, climate modelling, biological physics and soft materials, supercomputing and computational physics teaching, plus computational physics and sustainable energy. The conference website is at <http://ccp2011.ornl.gov/>. The conference proceedings are scheduled to appear early next year.
- 1.18.2 CCP2012 will be held October 14-18, 2012 in Kobe, Japan with Dr. Hideki Takabe (Osaka University) as the organizer. The web site is at <http://www.ile.osaka-u.ac.jp/CCP2012/>. CCP2013 will be held in Moscow, Russia with Prof. Lev Shchur (Landau Institute in Chernogolovka) as the organizer. A proposal to hold CCP2015 in India has been received.
- 1.18.3 Young Scientist Prizes: The Commission awards the Young Scientist Prize yearly. Each recipient receives the certificate and medal at the commission's annual conference where the recipient presents a plenary

lecture on the research which led to the award. The Commission established a policy requiring its conference organizers to invite its Young Scientist Prize recipients to be on the organizing committee of the CCP meetings for up to five years after their award. This policy starts with CCP 2012. The intent of this policy is to tie emerging leaders more strongly to commission activities.

- 1.18.4 The 2009 Young Scientist Prize was awarded to Dr. Amada Barnard (CSIRO Materials Science & Engineering, Australia) for her computational work on nano-materials; Dr. Philipp Werner of the ETH (Switzerland) was the C20's 2010 Young Scientist Prize winner for his work on algorithms for quantum Monte Carlo.
- 1.18.5 C20's 2011 Young Scientist Prize was awarded to Prof. Stefano Curtarolo of Duke University (USA) for his work on high throughput combinatorial computational materials science and his development of thermodynamic models for nano-catalysts.
- 1.18.6 African School: C20 worked with C13 to obtain IUPAP's endorsement of a 10 year, biennial series of African computational physics schools. The school's theme is numerical methods for electronic structure calculations.
- 1.18.7 Conference Proceedings: The Commission entered an agreement with the Journal of Physics Conference Series of the Institute of Physics to publish the proceedings of its future CCP meetings. Changes in the publishing industry make the arrangement in place for the publishing of our proceedings as a special issue of a particular journal difficult for our conference organizers. The new arrangement shifts the proceedings to an on-line publication with no restriction on page length. Preliminary and plenary papers will once again be acceptable, and videos and computers program can now accompany the papers. Our conference organizers will serve as the editor of their meeting's proceedings, and the papers will still be refereed. The papers will be visible to such search engines as Google Scholar. Most importantly, the proceedings will now be freely accessible to anyone who has Internet access; that is, they will now be available to those whose institutions may not have a subscription to the journals published by the Institute of Physics. In return, the Institute of Physics will advertise the meetings as a banner on the web pages of its computationally oriented journals.

1.19 AC1: International Commission for Optics - ICO (Duncan Moore)

- 1.19.1 The commission is undertaking a strategic planning exercise to forecast where the ICO should be in the next 10 years.
- 1.19.2 An entrepreneurship workshop was held two years ago in Cape Town, South Africa where Duncan Moore also gave a presentation.

1.20 AC2: International Commission on General Relativity and Gravitation (Malcolm MacCallum)

- 1.20.1 The Commission sponsored the biennial Amaldi conferences of 2009 and 2011, and the Marcel Grossman meeting of 2009. It also held the latest of its own triennial conferences, the GR19. This took place in Mexico City in July 2010. During the conference, three meetings of the Commission took place, one to review the previous three years, one to select the site for GR20, and one to plan for the next three years. At a General Assembly of the Society, new officers were elected. Malcolm MacCallum was elected President, and Dr Beverly Berger became Secretary. It was agreed that GR20 would be held in Warsaw in 2013.
- 1.20.2 The GR19 was very successful, with a good attendance (over 750), some excellent plenary talks, and well-attended parallel sessions. During the meeting a number of prizes were awarded. The Xanthopoulos Prize (similar to but predating IUPAP Young Scientists Prizes) was presented to Stefan Hollands (Cardiff). The inaugural triennial Ehlers and Bergmann-Wheeler Prizes (for the best PhD theses in classical and quantum gravity respectively) were presented to Nicholas Yunes (Princeton) and Victor Taveras (Louisiana State). The Hartle Prizes, for student presentations at the meeting, were awarded to Amitai Bin-Nun (U Penn), Samuel Gralla (Chicago), Ian Morrison (UC Santa Barbara), Vivien Raymond (Northwestern), David Sloan (Penn State), Jan Steinoff (Jena), Charalampos Markakis (Wisconsin, Milwaukee), Bethan Cropp (Wellington, New Zealand) and Francesca Vidotto (Marseille). The inaugural Chandrasekhar Prizes, for postdoctoral presentations at the meeting, were awarded to Parampreet Singh (Perimeter Institute), Mark Hannam (Vienna), Thomas Corbitt (LIGO Lab, MIT) and

Woei Chet Lim (AEI). AC2 gratefully acknowledge support from FORTH (Greece), Springer-Verlag, the UK Institute of Physics Publishing, and World Scientific for the Xanthopoulos, Ehlers, Bergmann-Wheeler and Chandrasekhar Prizes respectively.

1.21 AC3: International Commission for Acoustics – ICA (Michael Vorlaender) (Commission not represented but report received)

- 1.21.1 The purpose of the ICA is to promote international development and collaboration in all fields of acoustics including research, development, education, and standardisation.
- 1.21.2 The major activity for the ICA is the congress held every 3 years and in 2010 this was held in Sydney Australia. It was a highlight indeed, with respect to a perfect organization, excellent location and venue, and with the participation of around 1,000 acousticians (30% students) from 39 countries. Thanks go to the Australian Acoustical Society for their efforts especially in view of the global financial problems during the lead up to this major event. The ICA 2013 will be held in Montreal, Canada and we look forward to the assistance of IUPAP in promoting this important activity.
- 1.21.3 At the ICA General Assembly in August 2010 Michael Vorländer was elected as the President till 2013. The Vice President is Charles Schmid and Antonio Perez-Lopez will now take care of all financial issues. Samir Gerges continues on the board as the Past-President and Marion Burgess serves another period as the Secretary General. The past Past-President Phil Nelson, past Vice-President Sonoko Kuwano and past Treasurer Hugo Fastl, were sincerely thanked for their valuable contribution to the community of acoustics.
- 1.21.4 The Board of the International Commission for Acoustics is continuing to work on several other activities of international relevance and political impact. One task is to obtain a greater acknowledgement of the role of acoustics with a view to seeking full membership of ICSU. To this end meetings with ICSU management are scheduled for mid-2011. Report to IUPAP ICA activities 2010.
- 1.21.5 The ICA allocates the majority of its annual budget to encourage acoustics activities. The Early Career recognizes excellence in acoustics and the Young Scientist Awards encourage participation in the congress to enhance the experience of acoustics research environment. Annually the ICA provides support for specialist symposia which provide opportunities for those working in particular areas of acoustics to meet. The guidelines for selection require some international involvement and there is priority for developing countries. The range of topic areas for specialist symposia support can be seen from the listing of those offered support 2011, viz Acoustic Challenges in Aquatic Ecosystem Assessment, May 25-27 (Seattle, USA) European symposium on environmental acoustics and on buildings acoustically sustainable, October 26-28 (Caceres, Spain), The International Conference on Applications of Nano technology and Ultrasound, January 12-14 (Trichy, India), Workshop: Noise Issues in Developing & Emerging Countries, September 6 (Osaka, Japan), and the XL Winter School on Wave and Quantum Acoustics, February 27-March 4 (Gliwice, Poland)

1.22 AC4: International Commission on Medical Physics - ICMP (Dr.Fridtjof Nüsslin)

- 1.22.1 The ICMP is currently preparing for the World Congress to be held in Beijing in 2012. The last congress was held in Germany.