

C11 Report to IUPAP Commission Chairs and Executive Committee

September 2020

Heidi Schellman, Chair IUPAP-C11 Commission

C11 Officers:

Chair: Heidi Schellman (2011) (2014) (2017) United States

Vice-Chair: Mihoko Nojiri (2014) (2017) Canada

Secretary: Florencia Canelli (2014) (2017) Switzerland

C11 Members:

Zhi-Zhong Xing (2014) (2017) China

Srubabati Goswami (2017) India

Dezso Horvath (2014) (2017) Hungary

Azwinndini Muronga (2017) South Africa

Johan Rathsmann (2014)(2017) Sweden

Antonio Zoccoli (2017) Italy

Raymond Volkas (2014) (2017) Australia

Marie-Helene Schune (2017) France

Sergio F. Novaes (2011) (2014)(2017) Brazil

Alexander Sorin (2017) Russian Federation

Brigitte Vachon (2017) Canada

C11 Associate members:

Sunil Gupta (C4), Eugenio Nappi (C12, continuing)

Since the General Assembly in October 2017, the Commission has concentrated on 3 efforts.

- 1) Selection of the recipients for the C11 Young Scientist Prize
- 2) Engagement with conference organizers to implement the motions on diversity enacted at the General Assembly
- 3) Formation of the Neutrino Panel mandated by the General Assembly.

The Commission has met by phone and met in person at Lepton Photon Symposium in Toronto, August 5-9 2019

Implementation of General Assembly Resolution on Diversity

The ICHEP2016 conference set a benchmark for our field, with 50% of plenary speakers being female and an extremely well attended session on inclusion in HEP. This and the General Assembly resolution have been communicated to the organizers of future conferences, along with recommendations on best practices. In particular, proper reporting on gender and national balance requires that that data be acquired at registration.

Conferences are now also expected to have a posted anti-harassment policy. It is important that the policy and procedures be clear and communicated to participants.

Implementation of the General Assembly Resolution Implementing a Neutrino Panel

The 29th General Assembly RESOLVED to establish the Neutrino Panel, composed of nominees of C4, C11, C12, WG1, WG9 and WG10, under the supervision of those Commissions and Working Groups and coordinated by C11. The Neutrino Panel has a 3-year mandate “ to promote international cooperation in the development of an experimental program to study the properties of neutrinos and to promote international collaboration in the development of future neutrino experiments to establish the properties of neutrinos.”

The Commissions and working groups have met by phone and composed a roster of neutrino physicists spanning the full range of neutrino physics. 3 co-chairs, Nigel Smith, Takaaki Kajita and Manfred Lindner have assembled a committee representative of all aspects of neutrino physics with input from the commissions and working groups.

The Neutrino Panel is close to a first draft of their document but progress has been delayed by COVID-19.

Freedom of movement of Data

The Chair of C11 traditionally summarizes the C11 meeting at a plenary talk on the final day of the major (Type A) conference. This talk normally gets no questions but in 2019, a member of the audience asked about IUPAP’s stance on access to data across national boundaries. The Chair followed up on this question and we discussed it at our 2019 meeting with a recommendation which was circulated and commented on.

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DRAFT: IUPAP Statement on Collaborative Access to Facilities and Data

Physics increasingly involves international collaborations that share in the planning, construction and operation of common apparatus and in the analysis of the resulting data. Such collaboration is most successful when all collaborating scientists have unimpeded access to both physical facilities and to the data that result from their common efforts. We observe a disturbing international trend of restriction of access to facilities, shared data and methods of communication. While nations have legitimate needs to protect their critical facilities and computing systems, they also have a responsibility to find ways to maintain and facilitate access for all international scientific collaborators.”

This was circulated and received useful comments with a second iteration approved by respondents except for one request that the last sentence be strengthened.

Young Scientist Prizes

The 2020 IUPAP C11 Young Scientist Prize was awarded to

Marco Lucchini of Princeton University, *“For his pioneering work in the development of fast crystal sensors for the precision timing of charged particles”*.

Benjamin Safdi of the University of Michigan, *“For groundbreaking theoretical contributions to the search for dark matter, in particular the development of innovative techniques to search for axion dark matter, and to separate dark matter signals from astrophysical backgrounds.”*

Conferences Supervision

Category B: Neutrino, Chicago, USA – remote

Category B: LHCP, Paris, FR – remote

Category A: ICHEP, Prague, CZ – remote

Category C: TIPP, Vancouver, CA – cancelled

International Baldin Seminar, DUBNA, Russia, September 14-19, 2020 - status not known

Upcoming conferences

Category A:

Lepton Photon 2021 (Manchester, UK, August 9-14, 2021)

International Conference on High Energy Physics 2022 (Bologna, Italy, July 6-13, 2022)

Lepton Photon 2023 (Melbourne, AU, dates TBA)

International Conference on High Energy Physics 2024 (Prague, CZ, dates TBA

Category B:

Large Hadron Collider Conference 2021 (Paris, France, dates TBA)

International Conference on Computing in HEP, 2021 (Jefferson Lab, Virginia, USA, May 2021)

Neutrino 2022 (Dates TBA)

The Neutrino conference and the Baldin Seminar occur biannually and have been sponsored by C11 for many years. Technology and Instrumentation in Particle Physics (TIPP) occurs every 3 years while the International Conference on Particle Physics (IPAC) occurs annually. They are usually endorsed but do not receive financial support.

Observations from the conferences

IUPAP C11 had 4 conferences scheduled between May and July 2020. One, TIPP (Technology and Instrumentation in Particle Physics) was scheduled for late May and was cancelled due to COVID-19. But Neutrino 2020 (late May) and LHCP (late May) and ICHEP2020 (early July) continued as virtual conferences. All benefitted from substantial technical support from large laboratories (Fermilab, CERN and CERN) and were judged to be highly successful.

Neutrino 2020 (type B) went to a 2 week format with plenary only talks offered from 1400-1900 CEST. This is close to the optimal time for meetings which include all 3 major regions. Attendance was 3,328, as compared to 810 at Neutrino 2018 which was the previous largest meeting. A virtual reality poster session was offered and was extremely popular.

LHCP 2020 (type B) ran from 1230-1830 CEST but did not extend the schedule beyond the original 5 days. Both parallel and plenary talks were offered. Attendance was 1301 as compared to ~400 at previous meetings.

ICHEP2020 (type A) had 2 4-day sessions across 2 weeks, with 10 parallel sessions in week 1 and 44 plenary talks in week 2. 3,010 participants registered (it was capped to fit a 3,000 person zoom license) as compared to 1,100-1,500 at ICHEP2016 and 2018. To accommodate a wide range of time zones, two “premiere” time slots alternated, one from 1530-2030 CEST (Americas) and one from 0800-1300 CEST (Asia) with talks being recorded and then restreamed during the alternate time slot.

All three conferences were judged to have been extremely successful. Traditionalists missed the in-person interactions, but young people and those with limited travel opportunities – in particular colleagues in South America, Africa and South Asia, were very happy to be able to participate in a conference they normally could not have gone to. The remote nature allowed many more parallel talks to be offered.

None of the conferences ended up charging a registration fee. Neutrino returned the IUPAP contribution, LHCP asked to defer the funding to their next meeting in 2021 and ICHEP2020

used the funds on IT support, partially to provide professional closed-captioning for the plenary talks.

Lessons we learned that apply for the future.

Large Physics laboratories have the technical capacity to support a successful online conference.

All talks should be recorded (individually if possible) and posted online. Professional closed-captioning is feasible and increases accessibility. The increased participation that recording allowed was unprecedented and should be retained.

Frequent breaks, a shortened daily schedule and, if necessary, a longer length in days are needed for an online conference. Without the need for physical rooms, there can be many more sessions in parallel.

The use of commercial conference centers should perhaps be reconsidered. One major hurdle for several conferences was substantial cancellation fees for venues. These were mitigated by agreeing to postpone rather than cancel the use of the venue. But going forward, it is likely that physical attendance at conferences will decrease while virtual attendance will continue to be a useful option. Use of smaller academic facilities, which have lower costs, large numbers of smaller rooms, and better IT infrastructure for recording and streaming video may become the norm.

Organizers might consider charging a nominal fee (50 EU) to remote speakers to cover the costs of IT, proceedings and close captioning with no fee remote registrants without a speaking role.

Conference Solicitation

In 2018, C11 prepared formal guidelines for conferences and, via the IUPAP website, solicited bids for LP2019 and ICHEP2022.

<http://iupap.org/commissions/c11-particles-and-fields/c11-conference-guidelines/>

These guidelines provide advice on a successful conference bid and streamlined the process considerably. In addition to the IUPAP mandates on freedom of access and diversity, we ask about the availability of day care as accompanying persons are now very likely to be children.

The solicitation garnered around 10 approaches from local tourism and conference boards. They were informed that formal approaches needed to come from local universities and given the names of local contacts. This resulted in at least one successful proposal that might otherwise not have happened if the initial connection between the conference board and the institutions had not been made.

Future conferences:

IUPAP C11, Particles and Fields, is soliciting applications from institutions interested in hosting the Lepton Photon Symposium in 2025 and the “Rochester Conference”, ICHEP in 2026. Interested parties should contact the C11 chair. Written applications will be accepted until June 1, 2022.

The application should contain information about the participating institutions, the local organizing committee, likely costs and locations and alternative funding sources. We expect to make a final decision on the locations at our meeting in August 2020. Please see <http://iupap.org/commissions/c11-particles-and-fields/c11-conference-guidelines/> for our full conference guidelines.