

8th Meeting of the IUPAP Working Group on Accelerator Science (WG14)

February 22, 2022 20:00 – 22:00 CET

Virtual Meeting

Attendees: Gianluigi Arduini, Maher Attal, Chris Barty, Caterina Biscari, Yunhai Cai, Swapan Chattopadhyay, Stuart Henderson, Di-Jing Huang, Sylvie Jacquemot, Oliver Kester, Liu Lin, Mats Lindroos, Nikolai Lobanov, Lia Merminga, Michael Moyers, Sekazi Mtingwa, Simon Mullins, Vaishali Naik, Qing Qin, Lenny Rivkin, Thomas Roser, Mike Seidel, Suzie Sheehy, Aliz Simon, Liangting Sun, Minh Quang Tran.

Excused: Bob Bingham, Tadashi Koseki.

Agenda and slides available at [8th WG14 meeting \(22 February 2022\) · Indico \(cern.ch\)](https://indico.cern.ch/event/1123978/contributions/4718387/attachments/2395901/4096626/Meeting_20220222_Agenda%26Follow-up%20of%20actions_aspresented.pptx)

Topic 1: Introductions - Welcome new members

New members:

- Yunhai Cai, SLAC, USA
- Sylvie Jacquemot, LULI Ecole Polytechnique, France
- Vaishali Naik, VECC, India
- Thomas Roser, BNL, USA
- Suzie Sheehy, Uni. Melbourne, Australia
- Aliz Simon, IAEA, Austria
- Liangting Sun, IMP-CAS, China

Welcome to the new members!

Topic 2: Agenda, Minutes and Follow-up of actions (see slides: https://indico.cern.ch/event/1123978/contributions/4718387/attachments/2395901/4096626/Meeting_20220222_Agenda%26Follow-up%20of%20actions_aspresented.pptx) – G. Arduini

The draft minutes of the previous meeting are approved.

Follow-up of actions:

1. The new mandate/mission (see below with modifications with respect to the initial one highlighted in red) is approved.

Promote the exchange of information and views among the members of the international scientific community in the field of Accelerator Science including, but not limited to, the following:

- *Education and training in Accelerator Physics and Technology*
- *The theory and experiments concerned with the nature and properties of particle accelerators and beam physics*

- *The improvement of international communication in Accelerator Science through the sponsorship of professional meetings*
- *The future of accelerator facilities for various fields that benefit science and society*
- *The industrial, medical, energy production and environmental applications of relevant accelerator technologies*

2. Membership:

- a. Z. Buthelezi declined. Proposal from S. Mullins: Iyabo Usman (University of Witwatersrand, SA). S. Mtingwa proposes Bridine Sendja (from Cameroon, University of Yaounde) . **Action: All WG members to send proposals for African candidates with a few lines of motivation to Gianluigi by 31/3. Gianluigi will circulate the list of candidates for a vote by e-mail.**
 - b. Representative from African Light Source. Proposal from S. Mtingwa: Simon Connell (Univ Johannesburg, SA) → **Action: Gianluigi to invite him to join WG14**
 - c. Representative from Korea → Proposal from O. Kester: Myeun Kwon (Rare Isotope Science Project, Institute for Basic Science). G. Arduini mentioned In-Soo Ko (Pohang accelerator Laboratory) as another possible representative. **Action: All WG members to send proposals for Korean candidates with a few lines of motivation to Gianluigi by 31/3. Gianluigi will circulate the list of candidates for a vote by e-mail.**
 - d. Representative from Russia → G. Arduini contacted E. Shaposhnikova (CERN), V. Shiltsev (FNAL), S. Nagaitsev (FNAL), G. Trubnikov (JINR, Dubna), S. Ivanov (IHEP, Moscow). They proposed the following names: Igor Meshkov (JINR) and Valeri Lebedev (JINR). S. Sheehy proposes to contact Irina Schreiber (CERN) to ask for possible candidates. **Action: All WG members to send proposals for Russian candidates with a few lines of motivation to Gianluigi by 31/3. Gianluigi will circulate the list of candidates for a vote by e-mail.**
3. Promotion of Accelerator Science: Swapan (lead) and Lenny will propose a possible plan of action. **Action: Swapan and Lenny → on the agenda today**
 4. Education: Oliver (lead), Bob, Sekazi will develop a plan of action involving the existing accelerator schools (CAS, JUAS, IAS, ICTP). Possible interactions with C13 (Physics for Development and C14: Physics Education. **Action: Bob, Oliver, Sekazi → on the agenda today**
 5. Publications: WG14 should provide a position statement and a plan of action. Caterina (lead), Di-Jing, Gianluigi, Nikolay, Oliver will address this. **Action: Caterina (lead), Di-Jing, Gianluigi, Nikolay, Oliver.**
 6. Interactions with ICFA/ICUIL: **Action: Gianluigi to bring it up at this meeting**
 7. IPAC as WG14 Conference and IPAC MoU. **Action: Gianluigi (lead), Caterina, Lia, Lin, Tadashi to resume the discussions.**
 8. Communication (Web site, etc.). We should discuss the content at the next meeting (some proposals are made in the slides). **Action: Gianluigi to bring up this point at this meeting**

Topic 3: WG14 and Education in Accelerator Science (see slides: https://indico.cern.ch/event/1123978/contributions/4740753/attachments/2395156/4095161/Meeting_20220222_WG14%20and%20education_IAS_OK.pptx) – O. Kester

Oliver presented the International Accelerator School (IAS – previously called Joint International Accelerator School - [Joint International Accelerator School | The CERN Accelerator School](#)). IUPAP WG14

could act as governing body contributing to support in particular students from less developed countries. IAS is mostly devoted to students that are already involved in Accelerator Physics & Technology (e.g. PhD students or Post-Docs) and aims to train them but also to help them in networking.

IAS is looking for gaining visibility and IUPAP WG14 could help in making the IAS known to a wider audience.

IAS is looking for financial support (e.g. for the forthcoming school on superconducting Technology in Accelerators, 11-21 July 2022 in Saskatoon, Canada) and it has contacted ICFA and IUPAP WG14. S. Henderson mentioned that ICFA does not provide financial support normally.

In occasion of previous exchanges with WG14, Q. Tran suggested to contact the commissions “Physics for Development” (C13) and “Education for Physics” (C14) as they (as Commissions) can support students from developing countries though the process is rather long and the 2022 budget allocation has already been approved.

S. Henderson mentioned that USPAS is funded by the US-DoE. Mats, Stuart, Thomas noted that in general there is a good experience with Distance Teaching.

Several courses are also available on-line, though Suzie noted that in-person courses (in particular laboratory courses) might offer a deeper insight on the subject. She added that several MOOC (Massive Open Online Courses) are available. Gianluigi noted that indeed a lot of educational material is available on accelerator physics and technology and it might be beneficial to provide a collection of the available on-line courses on Accelerator Physics and Technology and to make it available to a wide audience, in particular in the less developed countries.

Sekazi noted that a School on Synchrotron Light Sources and their Applications ([School on Synchrotron Light Sources and their Applications | \(smr 3611\) \(06-17 December 2021\) \(ictp.it\)](#)) has been organized by the Abdus Salam International Centre for Theoretical Physics (ICTP) in conjunction with AfLS (African Light Source) and other institutions.

After the meeting Mats provided the following links:

[NPAP MOOC and Free Online Courses | MOOC List \(mooc-list.com\)](#)

With the following direct links:

- <https://www.coursera.org/learn/introduction-particle-accelerators> (Light sources, spallation sources and colliders)
- <https://www.coursera.org/learn/fundamentals-particle-accelerator-technology> (RF, vacuum, magnets, beam diagnostics)
- <https://www.coursera.org/learn/medical-applications-particle-accelerators> (Medical applications of Particle Accelerators)

Oliver has started to collect a list of accelerator school courses world-wide and will make it available to WG14 members to contribute. **Action: Oliver and all.**

Topic 4: WG14 and promotion of Accelerator Science (see slides: <https://indico.cern.ch/event/1123978/contributions/4718388/attachments/2395157/4095163/IUPAP%20WG%2014%20February%2022%20Accelerator%20Education%20slides.pptx>) – S. Chattopadhyay

S. Chattopadhyay presented a brief set of ideas towards strategy in the Education and Training in Accelerator Science and Technology, as being developed for the US HEPAP Snowmass activities, which

include international considerations, deficiencies in the curricula, various laboratory-university collaborations in the US and Europe and preliminary ideas towards promotion of accelerator science.

T. Roser pointed out the importance of R&D in sustainable accelerators and of training in the associated subjects. S. Henderson added that Accelerator Labs have an important role in the training of technicians and engineers in technologies which are critical and specific for accelerators. M. Moyers highlighted the importance of reliability in the design of accelerators and the need of training accelerator scientists in that direction.

S. Chattopadhyay, in collaboration with L. Rivkin, will develop further the promotional aspects of accelerator science and technology globally and will report on it at a future meeting of WG14. **Action:** Swapan, Lenny

Topic 5: **Discussion** (see **slides:** https://indico.cern.ch/event/1123978/contributions/4744154/attachments/2395902/4096630/Meeting_20220222_PointsforDiscussion_aspresented.pptx)

Gianluigi has discussed with IUPAP Secretary General (J. Vicens) concerning the website. It is proposed to develop an IUPAP WG14 website and to provide a link to it from the main IUPAP website (<https://iupap.org/>). Only basic information (mandate, membership) will be maintained in the main IUPAP website. Gianluigi proposes some items for the website content:

- Links to IPAC Conferences and JACoW Proceedings
- Links to CAS/USPAS/JUAS/ICTP and various Web Courses/MOOCs (Massive Open On-line Course) on Accelerator physics
- Newsletter: publish short articles on accelerator facilities/schools/events by one WG14 member or solicited to other institutes by one WG14 member
- Link to accelerator prizes/theses in accelerator science

Gianluigi is looking for getting support at CERN for hosting the website and asks for volunteers to contribute to define and to provide content for the webpage. **Action: WG members to volunteer**

Due to lack of time discussions on the interactions with ICFA/IAEA/ICUIL are postponed to future meetings.

Topic 6: Future Meetings

Next meetings are tentatively scheduled on:

- May (week starting 30/5)
- September (week starting 19/9)
- November (week starting 21/11)

Notes written by Gianluigi (11/03/2022)

List of pending actions:

1. Membership:
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