10th Meeting of the IUPAP Working Group on Accelerator Science (WG14)

September 27, 2022 15:00 – 17:00 CET
Virtual Meeting

Attendees: Gianluigi Arduini, Maher Attal, Yunhai Cai, Swapan Chattopadhyay, Simon Connell, Liu Lin, Michael Moyers, Sekazi Mtingwa, Simon Mullins, Qing Qin, Thomas Roser, Suzie Sheehy, Liangting Sun, Alessia Valenza, Nikolai Lobanov

Excused: Bob Bingham, Di-Jing Huang, Sylvie Jacquemot, Tadashi Koseki, Mats Lindroos, Vaishali Naik, Lenny Rivkin, Aliz Simon, Minh Quang Tran

Agenda and slides available at 10th WG14 meeting (27 September 2022) · Indico (cern.ch)

Topic 1: Agenda, Minutes and Follow-up of actions (see slides: https://indico.cern.ch/event/1182414/contributions/5060271/attachments/2517002/4328053/Meeting_20220927_Agenda%26Follow-up%20of%20actions_aspresented_27092022.pptx) - G. Arduini

The draft minutes of the previous meeting are approved.
Follow-up of actions:

1. Promotion of Accelerator Science: 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. Action: all WG members to send their ideas to S. Chattopadhyay by the end of July ➔ Presentation today
2. Publications: WG14 should provide a position statement and a plan of action. Caterina (lead), Di-Jing, Gianluigi, Nikolay, Oliver will address this. Action: Caterina, Di-Jing, Gianluigi, Nikolay, Oliver.
3. Interactions with other commissions/committees/WG/Organizations (IAEA/ICFA/ICUIL…) ➔ ICFA-BD panel today
4. IPAC as WG14 Conference and IPAC MoU. Action: Gianluigi (lead), Caterina, Lenny, Lia, Lin, Tadashi to resume the discussions ➔ not able to find a slot with people available. Do we consider this a high priority subject? If yes, Volunteers to help?
5. M. Lindroos believes that the majority of the students of the Lund University MOOC (3000 so far with 1000 getting a formal degree) are from developing countries. He will provide some more information for the next meeting. Action: Mats. C. Darve will report at the next meeting
6. Website: S. Jacquemot suggested to have at least one page about future accelerators (e.g. EUPRAXIA). Gianluigi fully supported this suggestion and asked Sylvie to send a possible picture and text. Action: Sylvie. Ongoing
7. Communication (Web site, etc.). Action: WG members to **pro-actively** contribute to the content of the web page

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Topic 3: News from the IUPAP General Assembly (see slides: https://indico.cern.ch/event/1182414/contributions/5060273/attachments/2516996/4328058/Meeting_20220927_NewsIUPAP_GA_aspresented.pptx) – G. Arduini

Topic 4: Promotional aspects of accelerators science and technology (see slides: https://indico.cern.ch/event/1182414/contributions/5060278/attachments/2516978/4327505/IUPAP%20Accelerator%20Promotion%20slides.pdf) - S. Chattopadhyay

Sekazi mentioned the LAAAMP (Lightsource for Africa, the Americas, Asia, Middle East and Pacific) Project organizes regularly workshops for High School Teachers (https://laaamp.iucr.org/events/high-school-teachers-workshops/STWO2022) and Schools on Synchrotron Light Sources and their Applications (https://indico.ictp.it/event/9645). These schools and workshops could be co-sponsored by IUPAP WG14. Gianluigi fully agrees and suggested that this is done systematically in the future. Action: all WG members to propose schools/workshops for endorsement/sponsoring by IUPAP WG14. Gianluigi reminded that requests for sponsoring by IUPAP need to be submitted before the end of June of the year preceding the event. The application forms can be found at: https://iupap.org/conferences/applications/ .

Liu added that similar courses are organized in Brazil (School on Synchrotron Radiation: https://pages.cnpem.br/er2ls/ and School for High School Teachers: https://pages.cnpem.br/espem/)

Sekazi announced that there will be a webinar by S. Connell on the African Light Source hosted by the APS forum on International Physics. Gianluigi reminded that it would be good to inform the WG members of upcoming events such that they can appear in our web page.

Suzie recommended to make a table/list of different 'audiences' that we want to reach, which 'messages' or information we want to send, which 'action' (if any) do we want people to take and how will we measure that we have been successful. A first step could be a general public survey to capture current knowledge/awareness of accelerators and their applications. For general public (usually we mean 'science interested' public), given our low resources, it is generally a good idea to partner with professional organisations who already have good 'reach' and audience engagement and 'amplify' via that route.

Suggested Actions:

- Identify key 'talent' in our field (solicit suggestions from community): speakers, writers, TV presenters, etc. within our community who already do work in this space. Identify not just senior folks (!) but a diverse range of talent.
    - Realistic suggestion: folks get lots of approaches and invitations, perhaps we could create a small fund that folks can ask to access to 'sponsor' their public-facing work via IUPAP to give major public talks, seed-fund a book proposal etc.? This is probably going to be more successful than a 'top-down' approach.
- Identify organisations with good 'reach' who accept pitches or can be partnered with. Examples:
    - Professional bodies and institutions APS/IoP/Royal Institution, etc.
    - TED and TEDx events, WIRED Live, New Scientist Live
    - High-reach YouTube channels, individuals including physicists with large audiences (Katie Mack, Brian Cox, etc.)
    - The Conversation (publish academic-written articles that can be picked up by other media outlets)

    - Create a contact list of media and PR folks from major labs/organisations (these people are talented and they already exist! Get buy-in from lab heads)
    - Major science festivals worldwide
- Then create a plan to elevate/support/encourage the 'talent' (create a prize/award?) to work with the organisations to create events, articles, videos, etc

Nikolai will send some information concerning talks on accelerators. Action: Nikolai

Thomas pointed out that the topic of global warming/climate change will be more and more important world-wide, particularly for younger people. We should include the use of accelerators for addressing global warming, mainly probably helping to provide carbon neutral energy sources. A summary from the ICFA panel on sustainability is here: arXiv:2203.07423.

Topic 5: Possible collaboration subjects between ICFA BD Panel and IUPAP WG14 (see slides: https://indico.cern.ch/event/1182414/contributions/5060280/attachments/2517319/4328077/ICFA_BDP.pdf) - Y. Cai

ICFA-BD Panel is publishing regular newsletters dedicated to specific topics in Accelerator Science. Yunhai suggested to identify common topics where WG14 could contribute. Common standards in Accelerator Design codes could be one of them.

Thomas noted that an important topic for future colliders is the massive electric power consumption while also providing record luminosities. The Snowmass Implementation Task Force has produced a report to evaluate and compare all of these proposals (arXiv:2208.06030). For this report the luminosities and power consumptions were taken from the proponents. Although these numbers were very well justified a comprehensive independent evaluation is still required to allow the community to decide on a future collider project that is affordable and its environmental impact is acceptable to society. The ICFA panels on beam dynamics and sustainability could collaborate on this task. WG14 might also be interested to be involved. Gianluigi replied that WG14 should definitely contribute to the initiatives on sustainable accelerators and accelerators for sustainability.

Topic 6: Website (see link: https://iupap-wg14.web.cern.ch/)

Gianluigi presented the status of the IUPAP WG14 website. The Working Group Members are encouraged to provide content for the site. Action: all Working Group members.

Michael suggested to add a list of the possible uses of accelerators. He has provided a list earlier (in June). He also announced that the next meeting of the Particle Therapy Co-Operative Group (PTCOG) will take place in Madrid from 12 to 17 June 2023 (https://www.ptcog61.org/) and he noted that WG14 could contribute to define an accelerator session. Gianluigi noted that this is idea should be definitely pursued and asked Michael to liaise with the WG14 members and PTCOG. Action: Michael.

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Gianluigi suggested that we could post on the website newsletters on the activities ongoing in Accelerator Science in the various countries or laboratories. Liangting volunteered to provide an article on activities in China. Action: Liangting.

Simon added that IAEA is maintaining a list of world accelerators (https://nucleus.iaea.org/sites/accelerators/Pages/default.aspx). Gianluigi noted that the list is mostly covering low-energy accelerators, but it can be added as a link to our web page but we should verify that it is publicly accessible.

Topics 6: A.o.B.

Liu has attended the JACoW stakeholders' meeting at IPAC22. She will report at the next WG14 meeting.

Topic 6: Future Meetings

Next meetings are tentatively scheduled on:

- November (week starting November 21) - Zoom
- February (week starting February 13) - Zoom
- May (week starting May 7) – in person at IPAC'23

Notes written by Gianluigi Arduini (03/10/2022)

List of pending actions:

1. Publications: WG14 should provide a position statement and a plan of action. Caterina (lead), Di-Jing, Gianluigi, Nikolay, Oliver will address this. Action: Caterina, Di-Jing, Gianluigi, Nikolay, Oliver. Liu will report on the discussions at the last JACoW stakeholders' meeting at the next WG14 meeting.
2. IPAC as WG14 Conference and IPAC MoU. Action: Gianluigi (lead), Caterina, Lenny, Lia, Lin, Tadashi to resume the discussions ➔ not able to find a slot with people available. Do we consider this a high priority subject? If yes, Volunteers to help?
3. M. Lindroos believes that the majority of the students of the Lund University MOOC (3000 so far with 1000 getting a formal degree) are from developing countries. He will provide some more information for the next meeting. Action: Mats. C. Darve will report at the next meeting
4. Website: S. Jacquemot suggested to have at least one page about future accelerators (e.g. EUPRAXIA). Gianluigi fully supported this suggestion and asked Sylvie to send a possible picture and text. Action: Sylvie. Ongoing
5. Communication (Web site, etc.). Action: WG members to **pro-actively** contribute to the content of the web page

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6. Schools and workshops can be co-sponsored by IUPAP WG.14. Action: all WG members to propose schools/workshops for endorsement/sponsoring by IUPAP WG14.
7. Nikolai will send some information concerning talks on accelerators. Action: Nikolai.
8. WG14 could contribute to define an accelerator session at the next PTCOG meeting. Michael to liaise with the other members of the WG14 members and PTCOG. Action: Michael.
9. Liangting volunteered to provide an article on activities in Accelerator Science in China for the IUPAP WG14 website. Action: Liangting.

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