

Topics for discussion

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Present Mandate/Mission (as it appears on the web site)

- 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:
 - 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
 - *Missing (?): Education and training in Accelerator Physics and Technology*
 - *To be updated?*

Membership

- Africa:
 - Simon Mullins, BIUST, Botswana
 - *Zinhle Buthelezi (Accelerator Physicist?) - iThemba LABS – South Africa (Proposal from S. Mullins)*
 - *Representative from African Light Source (S. Mtingwa)*
- Americas:
 - Lia Merminga, FNAL, USA
 - Swapan Chattopadhyay, FNAL/SLAC, USA
 - Oliver Kester, TRIUMF, Canada
 - Liu Lin, LNLS, Brazil
- Asia:
 - Di-Jing Huang, NSRRC, Taiwan
 - Michael Moyers, SPHIC, China
 - Tadashi Koseki, KEK, Japan
 - *Somebody from Korea and one more from China?*
 - *India? Thailand?*

Membership

- Europe:
 - Gianluigi Arduini, CERN, Switzerland
 - Bob Bingham, STFC, UK
 - Caterina Biscari, ALBA-CELLS, Spain
 - Mats Lindroos, ESS, Sweden
 - *Pavel Vladimirovich Logatchev, BINP, Russia – did not participate so far. Replacement?*
 - Qing Qin, ESRF, France
 - Lenny Rivkin, PSI, Switzerland
 - Mike Seidel, PSI, Switzerland
 - Minh-Quang Tran, EPFL, Switzerland
- Middle East:
 - Maher Attal, SESAME, Jordan
- Oceania:
 - Nikolai Lobanov - ANU – Australia
 - *Somebody in addition?*

Associate Membership

- IUPAP WG1 (ICFA) Chair: S. Henderson, JLab, USA
- **ICFA Beam Dynamics Panel Chair (from Jan 2022): Yunhai Cai, SLAC, USA**
- ICFA panel on Advanced & Novel acceleration (Chair: Ph. Piot) → Need representative?
- ICFA Panel on Sustainable Accelerators and Colliders represented so far by the Chair (M. Seidel) → **T. Roser**
- WG7 (International Committee on Ultrahigh Intensity Lasers - ICUIL): **Chris Barty, UC Irvine, USA – confirmed**
- IUPAP C12: Nuclear Physics → **Lia established contacts with Alinka Lépine-Szily (Chair 2014-2017) → reciprocal interest (see also C12 web page) → Need to formalize?**
- IUPAP WG12: Energy → **Need representative? Jon Samseth (NTNU/HIOA Norway)?**
- IUPAP C16: represented so far by Plasma Physics Chair (M-Q. Tran) → replacement? **Contacted S. Jacquemot**

Membership

- Africa: 2 (3)
- Americas: 6 (8)
- Asia: 3
- Europe: 9
- Middle East: 1
- Oceania: 1
- Female: 3 (4)
- Male: 19 (21)

Membership (open points)

- Interactions with IAEA:
 - Aliz Simon attended the WG14 meeting during IPAC16
 - IAEA appears to be quite active (thanks to Lenny for providing some links) in keeping a DB of accelerator facilities, organizing conferences on accelerators and their applications, etc:
 - <https://www.iaea.org/topics/nuclear-science/nuclear-research/accelerators>
 - [Home: International Conference on Accelerators for Research and Sustainable Development: from Good Practices Towards Socioeconomic Impact | IAEA](#)
 - Created an accelerator knowledge portal: <https://nucleus.iaea.org/sites/accelerators/Pages/default.aspx>
 - Should we establish a link with IAEA? Associate Membership/Membership? Exploit synergies and contacts?
- Engagement with Industry: in 2017 we agreed to nominate a senior accelerator scientist with experience in interaction with industry: we discussed 4 proposals (G. Anelli – CERN, S. Myers – EVO, K. Peach – Oxford, S. Sheehy – Melbourne Univ.) ➔ **Propose to invite S. Sheehy**

Membership (open points)

- Is the membership covering the various domains/applications of Accelerator Science:
 - Technology?
 - Energy Applications (MYRRAH? CiADS?, WG12 representative?)
 - Others?
 - Should we create a domain/expertise DB for the members?
- Some countries are still underrepresented or not represented: China, Korea, Thailand, India....
- Representation of the Accelerator Schools? Needed?
- Representation of the Learned Societies – Accelerator Groups/Divisions (EPS-AG, APS-DPB, etc.)? Needed?

Modus Operandi (proposal)

- Organize ourselves in teams (with a lead) to develop on some themes/activities → **volunteers needed**
- **Meetings every ~2 months:**
 - Review progress on 1-2 theme/activity
 - Round table covering activities in various regions, developments in the Associate Commissions/WGs at every meeting

Proposed themes/activities

- Promotion of Accelerator Science
- Education
- Publications
- Interactions with ICFA/ICUIL
- Communication (Web site, etc.)

Promotion of Accelerator Science

- Promotion of applications of accelerators (with a particular view to less developed countries)
 - Complementary role to ICFA. Especially in less-developed countries:
 - Photon Sources (synch. Light sources, FELs, Compton scattering, gamma factories..)
 - Neutron Sources (spallation sources, ADS, Waste Transmutation..)
 - Radioactive Ion Beam sources
 - Medical Accelerators (proton and ion therapy, high energy electrons, FLASH therapy)
 - New acceleration techniques and their implications for compact photon and proton/ion accelerators for application
 - But also:
 - accelerators for nuclear physics research that appear not to be covered in ICFA mandate (tbc)

Promotion of Accelerator Science

- Promotion of the advanced technologies underpinning accelerators:
 - High field magnets
 - High Gradient RF
 - New-acceleration techniques (laser/beam plasma wakefield acceleration, etc.)
- How do we do that?
 - Position papers? Roadmaps?
 - Help to establish contacts with the accelerator community?
 - Organize workshops on some cutting-edge accelerator concepts/technologies in collaboration with ICFA panels?
 - Interact with accelerator application community? Medical applications? → Connect with AC4: International Commission on Medical Physics?: (see for example development of robust accelerator design for conventional radio-therapy <https://indico.cern.ch/event/560969/>)
- Subcommittee members:

Education in Accelerator Science

- One of the missions of WG14 should be supporting **education in accelerator science**.
- Re-establish contacts with international schools (CAS, JUAS, USPAS, IAS, ICTP Courses) as proposed earlier
- Profit of the next Accelerator School in Saskatoon, Canada to establish links with the Accelerator Schools
- Invite Accelerator School Directors to become members: might be too much? Define link persons in WG14 instead?
- Interaction with C13: Physics for Development/C14: Physics Education and AC5: International Association of Physics Students?
- What are the benefits for Accelerator Schools to engage with IUPAP:
 - Visibility?
 - Funding?
 - Widen the “audience” e.g. by supporting students from poorer countries
- Subcommittee members:

Publications in Accelerator Science

- Publication policy:
 - IPAC 3-pillars initiative:
 - PRAB + other journals EPJ, NIM
 - JACoW
 - Light Peer Reviewed Section (IoP Conference Proceedings)
- Generally small numbers of publications in peer-reviewed journal penalizing institutes, researchers in occasion of research evaluation exercises
- Need to train new generations? Universities, Institutes, Accelerator Schools, Accelerator conferences?
 - APS Referee and Author Tutorial "Breakfast and Learn" @ IPAC18
 - CERN is providing a course on "Scientific Writing" for Students

Publications in Accelerator Science

- Role of JACoW and its organization:
 - CERN is supporting merging Indico/SPMS to ease longer term support
 - JACoW is not only conference proceedings publication but also infrastructure for Conference organization (SPMS, large DB, et.)
 - Establish a collaboration among Institutes?
 - Is it sustainable? How other fields address this? Alternatives?
 - JINST Conference Proceedings (no cost if all authors are from organizations paying for Open Access)
 - Instruments
 - PoS (used for ICHEP)
- Subcommittee members:

Interaction with ICFA/ICUIL

- Quite a number of discussions. Our mission/mandate is clearly complementary to ICFA:
 - *ICFA, the International Committee for Future Accelerators, was created to facilitate international collaboration in the construction and use of accelerators for high energy physics. (from ICFA web page)*
- Interactions should likely concretize in joint activities/workshops with ICFA Panels:
 - Beam dynamics (BD)
 - Sustainable Accelerators and Colliders (SAC)
 - Advanced and Novel Accelerators (ANA)
- In 2017 we discussed with late Yong-Ho Chin (ICFA BD Panel chair) about the possibility of “re-booting” the Future Light Sources Workshop and jointly co-sponsor/support them. Next of this series on 20/3/2022 (Lucerne). Likely too late to join. To be discussed with new ICFA BD Chair. Contacts with H. Braun (Organizer). Other possibility is the **ERL WS in June 2022 (Cornell)**.
- Could this be a joint WS ICFA SAC/ICFA BD/WG14 (and even ICFA ANA to some extent)?
- Need to develop on the possible interactions with Stuart, Mike, Yunhai, ...
- Continue reciprocal representation at respective meetings (ICFA/WG14)?

Interactions with ICFA/ICUIL

- First of all many thanks to Chris Barty for the numerous suggestions!
 - ICUIL Meetings every 2 years. Next one September 2022 (Korea). WG14 should be represented
 - Joint workshop on compact light sources and gamma factories:
 - X-band FEL, PWF FEL,
 - Compton back scattering
 - Gamma factories with Partially Stripped ions
 - This could be also a common ground with ICFA/BD, ICFA/ANA, ICUIL, WG14
- Subcommittee members:

IPAC as IUPAP WG14 conference

- IPAC is *de facto* **our Conference**
- Discussions with the PAC-OC concerning the revision of the MoU started. Need to continue and review the MoU at this stage?
- Should we postpone this for the time being?
- Do we think that there could be an issue with the acceptance of the IUPAP endorsement by some of the IPAC organizers?
- Interaction of WG14 with IPAC: Need to include IPACCC chair as Associate Member (rotating every year)?
- Need to make sure that IPACs request support by IUPAP (<https://iupap.org/conferences/applications/>):
 - Endorsement (Application any time before the conference) → WG14 can support the request (IPAC10, IPAC11 were endorsed by IUPAP)
 - Sponsorship (application January to June of IPACyear-1) → Need commission support (normally C11). More stringent requirements from IUPAP on the conference organization (IPAC13,IPAC14,IPAC17 were supported by IUPAP)

Website/Indico/Mailing list

- A mailing list has been created to exchange information among WG14 members: iupap-wg14@cern.ch
- An Indico page has been created for our meetings and potential other events (workshops, etc.): <https://indico.cern.ch/category/14659/> → all WG members have the rights to manage the page
- Web site: IUPAP/WG14 web site is outdated. Contacted the Secretary General (J. Vicens) and the President Designate (S. Ponce-Dawson) to see how to proceed:
 - Get write access to the web page
 - Create a different one and link to it from the main IUPAP WG14 page (this is the approach taken by ICFA, ICUIL)
 - ...waiting for a reply...but probably it is easier to create our web site

Content of the web site

- 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?
- Post openings in Accelerator Facilities?
- Map or list of worldwide accelerator facilities? IAEA has one? Needed?
- 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
- Link to ICFA BD Newsletters?
- **Volunteers to help? we could use CERN infrastructure**

WG/Commission

- It appears to me the WG structure is still more flexible and the most adapt in this phase when we are organizing ourselves
- We could aim to review the situation at the end of 2022 / beginning of 2023 to see where do we stand in the developments of the themes and then come back to this point at a later stage

Future Meetings

- Time slot (time of the day, day of the week)
- Meeting every ~2 months:
 - February (week starting 21/2)
 - April (week starting 25/4)
 - June (week starting 20/6)
 - September (week starting 19/9)
 - November (week starting 21/11)
- Continue with virtual meetings for the time being and possibly have face-to-face meetings 1/year (at IPAC? starting from 2023?)