

## Activity report of Working Group 16 (WG16) – Physics and Industry

### *Summary of WG16 Activities from January 2023 to September 2024*

#### **Mandate**

- Provide recommendations to GA and Executive Council on how to foster international cooperation in physics between industry and academia
- <https://iupap.org/who-we-are/internal-organization/working-groups/wg16-physics-and-industry/>

#### **Objectives**

- Acquire new Corporate Associate Members (CAMs)
- Co-organize Int. meetings, workshops, prizes with commissions and WGs
- Provide resources of interest to industrial physicists and students interested in industrial careers

#### **Actions**

- Invite potential companies and organizations to become CAMs
- Develop a dedicated webpage outlining CAMs benefits & rights and providing specific resources. Cf. <https://iupap.org/who-we-are/internal-organization/working-groups/wg16-physics-and-industry/>

#### **Summary Report and Recommendations**

The WG16 summary report generated in 2021 provided 12 summary recommendations, including the initiation of Corporate Associates and associated benefits, the creation of a commission on Physics and Industry, exploring inter-institutional activities such as with the International Association of Physics Students (IAPS), setting up an international mentoring program, creating a web site with world-wide career resources and opportunities, and creating a web site to inform the public about the contributions of physics to society. Many of these recommendations have been realized as described below.

#### **Presentation and interactions of WG16**

- Christophe Rossel had discussions with Ex. Council officers about creating a new Commission on Physics and Industry in 2024. WG16 will not become a Commission but will be integrated in a new structure with entities more appropriate and flexible than commissions. One reason is that the WG16 is not representing a specific field of physics and its related community.
- C. Rossel presented WG16 to IUPAP General Assembly at CERN, 9 October 2023
- L. Woolf wrote article about WG16 for the December 2023 FIAP newsletter to educate FIAP members
- A. Navin presented WG16 with slides to WG9 and C12

- WG16 members participated in the EPS Forum 2024, Berlin (24-25 March 2024), by inviting plenary speakers and moderating round table discussions in sessions related to physics and industry <https://www.epsforum.org/>
- A satellite event at the BSBF2024 conference is planned on 1 October in Trieste, organized by B. Bruant Gulejova
- New column on WG16 is planned for the IUPAP newsletter

### IUPAP Corporate Associate Members

Through diligent work by WG16 team members, 6 [organizations](#) have so far joined as Corporate Associate Members (CAMs), shown below.

- [Advanced Laser Light Source \(ALLS\)](#) – 2022 (Canada)
- [European Organization for Nuclear Research \(CERN\)](#) – 2022 (Switzerland)
- [Synchrotron-Light for Experimental Science and Applications in the Middle East \(SESAME\)](#) – 2022 (Jordan)
- [Joint Institute for Nuclear Research \(JINR\)](#) – 2023 (Russia)
- [Park Systems](#) – 2023 (South Korea)
- [CAEN](#) – 2024 (Italy)

It has been a challenge to recruit companies and organizations to become CAMs.

- Most contacted candidate CAMs do not respond to invitation letters
- Need more concrete benefits for CAM membership to increase number of CAMs
- Fee structures were set up to accommodate those entities with limited resources.
- Examples of contacted companies with no results: Quantum Design, Riken, Sumitomo, Toshiba, Mitsubishi, Nature Springer, Swatch Co, IBM Research etc.

[Rights and Benefits](#) were defined and presented in letters sent to organizations to solicit their joining IUPAP as CAMs. These benefits are listed here:

- Corporate Associate Members (CAMs) are international or national research organizations and commercial companies
- CAMs can make nominations and hold positions in IUPAP ([Executive committee](#), [Commissions](#), [Working Groups](#))
- IUPAP will connect CAMs with [IUPAP Territorial Members](#) who represent key stakeholders, industry insiders, and decision makers to create partnerships to address societal grand challenges and other topics of interest to the CAMs
- CAMs will be able to submit proposals to other CAMs to collaborate on R&D projects
- CAMs can sponsor [prizes, awards](#), or focused initiatives in their field of interest, which will be publicized to all IUPAP members
- The IUPAP website will link to the CAM's website for visibility of the CAM to all IUPAP members and IUPAP will use a [careers web site](#) where CAMs can post physics employment opportunities as well as [career development guidance](#)

### **Other Activities:**

- WG16 initiated [IUPAP joining the Linked-In](#) industrial social media site; IUPAP now has over 1400 followers.
- A new slide deck for presenting IUPAP to CAMs is available for [download](#).

## **Development of International Resources Relevant to Physics and Industry**

- Resources were collected and posted that describe the benefits of [physics to society and the economy](#). These include resources from the EPS on physics, a collection of essays on the economics of Big Science, APS report on the impact of industrial physics on the US economy, and National Academy of Sciences resources on how basic research provides benefits to humanity.
- Resources were collected and posted on [Jobs in physics](#) that describe how physics education can be more relevant to preparing students for varied careers, including in industry. These resources are from APS, CAP, EPS, Optica, and EPS.
- Resources were collected and posted that describe key physics issues related to international [grand challenges](#). They include resources from the US National Academy of Sciences, Engineering, and Medicine, and from EPS.
- Resources were posted regarding [mentoring programs](#), focusing on the APS IMPact program and free APS membership opportunities

## **WG16 Meetings**

WG16 has been meeting almost monthly via Zoom since March 2020. Since January 2021, 26 meetings were held. For each of them minutes have been recorded and approved by the WG.

## **Members of WG16**

1. Christophe Rossel (IBM Research-Europe, Zurich, Switzerland) (WG16 Chair)
2. Cyrus Walther (International Association of Physics Students, Technical University of Dortmund, Germany) (WG16 Vice Chair)
3. Navin Alahari (GANIL, France) liaison officer to WG9
4. Tariq Ali (University of Liverpool, United Kingdom)
5. Barbora Bruant Gulejova (Uni. Bern, EPFL, CERN, Switzerland)
6. Cinzia Da Via (University of Manchester, United Kingdom)
7. James Kneller (International Association of Physics Students, United Kingdom)
8. K.S. Narayan (Jawaharlal Nehru Centre for Advanced Scientific Research, India)
9. Michel Spiro (IUPAP President, France) (ex-officio)
10. Jens Vigen (CERN, IUPAP Secretary-General, Switzerland) (ex-officio)
11. Lawrence Woolf (General Atomics Aeronautical Systems Inc., Sand Diego, USA)

A new member has just accepted to join and will represent the Middle East. This is:

- Zineb Matouk, Industrial Engagement Lead, Technical Innovation Institute (ITT), Abu Dhabi, UAE

The following members resigned due to too many parallel activities

- Nisha Holla (Centre for Cellular and Molecular Platforms, India)
- Andranik H. Sarkissian, (PLASMIONIQUE Inc., Canada)
- Pablo Garcia Tello (Spain-Belgium-CERN)

The WG16 is seeking more members from North- and South-America, Australia, Asia (China, Japan) to help contacting companies and research organizations in those areas.

C.R. 19.09.2024