

The members of the Working Group on Communication in Physics are listed below. Each has an interest in physics communication issues, and in many cases have strong connections with physics society publications. The group has been meeting yearly, with meetings in 2012 in CERN and 2013 in Ridge, NY. In 2014, we have a virtual meeting scheduled. The current members are:

Gene Sprouse (Chair)  
Editor in Chief, American Physical Society  
Ridge, NY

Xavier Bouju  
CEMS/CRNS  
Toulouse, France

Enrique Canessa  
Abdus Salam ICTP  
Trieste, Italy

Nicola Gulley  
Editorial Director  
Institute of Physics Publishing  
Bristol, U.K

Li Lu  
Professor and Deputy Director  
Institute of Physics, Chinese Academy of Sciences  
Beijing, China

Sergio M Rezende  
Professor of Physics at the Universidade Federal de Pernambuco  
Former Minister for Science and Technology of Brasil (2005-2010).

Ken-Ichi Ueda  
Institute for Laser Science  
Tokyo, Japan

Jens Vigen  
Head Librarian(CERN).  
Geneva, Switzerland

In 2012, our group had extensive discussions about researcher identifiers, and has made a proposal for the General Assembly to endorse ORCID. ORCID is an open, non-profit, community-based effort to provide a registry of unique researcher identifiers and a transparent method of linking research activities and outputs to these identifiers. ORCID is unique in its ability to reach across disciplines, research sectors, and national boundaries and its cooperation with other identifier systems. Our group proposed the following statement to be adopted by the IUPAP General Assembly:

### **Statement to the IUPAP Council from the Working Group on communication in physics**

The IUPAP Working Group for Communication in Physics acknowledges the long-standing problem of accurately linking researchers with their professional activities, and fully supports ORCID's efforts to create a registry of researcher identifiers and embed these within research workflows.

To support the adoption of ORCID, the Working Group recommends that IUPAP encourage the physics community to adopt ORCID:

- as individuals, by registering for ORCID identifiers(IDs);
- as member organizations, by joining ORCID and integrating ORCID IDs into workflows, for example by
  - o a) integrating ORCID IDs into member registration processes;
  - o b) integrating ORCID IDs into manuscript submission processes; and
  - o c) informing their members of the advantage to them and their community of linking their scholarly activity to their ORCID ID.

In 2013, the Working Group turned its attention to the issue of Data. We met with Chris Biemesdorfer from the AAS, who explained to us various initiatives in Astronomy and other physics fields. After extensive discussions and reports from each member of the committee concerning how data issues are viewed in their location, we developed the following proposal to the IUPAP General Assembly:

### **Statement to the IUPAP Council from the Working Group on communication in physics.**

The working group were asked to consider the benefits and challenges to making research data open for wider reuse. The group recommends that to facilitate the discussions there should be a preferred definition to define data. We propose the following definitions:

Level 0 data – raw data, unprocessed

Level 1 – convert data to standard units; some initial calibrations

Level 2 – some data analysis, such as fit to curves, calibrations etc. Generally the data that will be supporting any figures in published articles and reports

Using this definition the group recommends that Level 2 data could be a good candidate for making openly available. Level 1 and Level 0 data require supporting information and formatting to be of most use and to facilitate accessibility.

There are many good examples of research communities sharing data well and integrating it into publication practices. Data supplementing articles is being published across disciplines, and in the life sciences mandatory publication of data for reproducibility already underpins several disciplines/journals. Research communities such as Astronomy and High Energy Physics have established formatting, linking and archiving protocols for data. However this is not the case across all areas of physics. The working group recognises that there are a number of initiatives and new publications emerging that help to bridge the gaps between the raw data classed as level 0 and the fully processed data at level 2 and that these should be monitored; new services emerging also provide suitable options for authors to index and store their data but the current landscape is still very fragmented.

In conclusion we recommend that IUPAP invite the physics community to provide, whenever and however possible, these data whilst recognising that this will be more complex in some areas than others, with additional supplementary information such as software, for example, required in some cases.

The publishing and library communities can play an instrumental role in this process in designing submission processes and guidelines together with linking mechanisms that can lead to more robust management, discoverability and archiving of the data. The benefits of this would contribute significantly to reducing duplication of effort at a later stage in the future.

We also recognise that by making data available researchers need some assurance that ethical practices will be adopted by others when making use of their data, abiding by any embargo periods or restrictions that may be imposed due to the nature of the data, and suitably acknowledging the original authors.