
IOP | Institute of Physics
Physics Communicators Group

NEWSLETTER

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Chair, Physics Communicators Group

What can we learn from advertising?

Think about the advertising for your favourite brand. Maybe it's your car, a food, or sport's gear. Can you remember the tagline, the slogan used for the brand? Here's a few: 'Just do it', 'Go to work on an egg', 'We live in Financial Times', 'Ideas for life', 'Because we're worth it', 'Love food. Love life'.

Notice that advertising slogans rarely use more than 8 words and that each word earns its place by fighting off the rest. Copy writers working for 24 hour news channels, magazines or newspapers have to be similarly brief. Headlines must convey the essence of the story in less than 10-15 words.

Writing clearly and concisely takes practice and skill, but is perfectly possible. Contrast this with writing research papers for physics journals. It leads to very bad habits. Arxiv.org or Physical Review B have no word length restrictions and give you little guidance on how to present results. More prestigious journals begin to enforce tighter control – you can only have 4 pages for Physical Review Letters or Nature Physics. At the heady heights of Nature or Science, editors at the journal really do need non-specialists to be able to understand at least the first few paragraphs, and a lot of effort is invested by authors and editors to make this so.

Within the Physics Communicators group, we are comfortable thinking about a 'general public', or school students, but we don't often consider the standard of science communication within science itself.

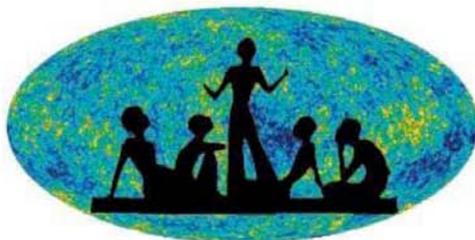
The way we write and present physics to other physicists is becoming more and more important. With digital journals and online searches giving immediate access to research results, often the titles and abstracts are all anyone will read of any paper before skimming to the next. How much time and care do you spend writing the titles and abstracts of your research papers? How much time do you spend on your conference poster? Your presentations? Study advertising and news and you will find many clues on how to make your own research stand out.

We have launched 'The Very Early Career Physics Communicator Award' to recognise excellence in the communication skills of physicists. On 8th November, shortlisted candidates will have a chance to present their work and the winner will receive £250 and an award certificate. Alok Jha, science correspondent at The Guardian will give a keynote lecture on the challenges of turning research into stories understandable by non-specialists.

The deadline for entries is 15th September, so please consider applying or encouraging others to apply.

IOP | Institute of Physics
Physics Communicators Group

Do you inspire others with your
enthusiasm for Physics?



The Very Early Career Physics Communicator Award

seeks to recognise excellence in communication skills of physicists who are at the beginning of a career in physics.

Eligibility

Applicants do not need to be a member of the IOP, but should be one of the following:

- An undergraduate physicist
- A person involved in an appropriate postgraduate study within a few years of a degree qualification (not more than 5 years)
- A person working as a physicist in UK or Eire within the first 5 years of their physics career

Application: Submission of a report of their communication activities which should be no more than 1500 words long. Further details and application form available from

<http://www.iop.org/activity/groups/subject/physcom>

Submission deadline: 15th September 2011

Where: All entries should be submitted by email to the Physics Communicators Group secretary, David Smith: david.smith@brunel.ac.uk

Prize: The winner will receive £250 and an award certificate at an IOP Physics Communicators Group event in November. As well as providing recognition of the winner's work through the prize money, the process will also facilitate networking opportunities for all participants.

Award Ceremony: November 8th at IOP, Portland Place, London

The Very Early Career Physics Communicator Award

Applications now open!

With the launch of our new group prize at the summer meeting by Dr Maggie Aderin-Pocock we invite applications from people at the start of their careers in physics who have undertaken activities that support and encourage excellent communication of physics. Applicants do not need to be a member of the IOP, but should be one of the following:

- An undergraduate physicist;
- A person involved in an appropriate postgraduate study within a few years of a degree qualification (not more than 5 years);
- A person working as a physicist in UK or Eire within the first 5 years of their physics career.

The Prize

The award seeks to recognise excellence in communication skills of physicists who are at the beginning of a career in physics. The winner will receive £250 and an award certificate at an IOP Physics Communicators Group event to be held at the IOP on Tuesday 8th November.

Application

Applicants should submit a report of their communication activities, no more than 1500 words long, including brief details of their academic physics work or study, evidence of communication activities undertaken to encourage others in physics appreciation or the general understanding of physics and the names and contact details of two referees with close knowledge of the applicants work and/or their communication activities. The report should be submitted along with an application form (available from our group web page) and a CV by email to the Physics Communicators Group secretary, David Smith: david.smith@brunel.ac.uk, before the deadline of **15th September 2011**.

Please note:

Any person wishing to nominate another for the prize must enclose the written consent of the nominee. At the award ceremony those shortlisted will be expected to give a short presentation (no more than 10 minutes) after which the winner will be announced. Shortlisted candidates must be prepared to be interviewed by the IOP and appear on IOP websites and within IOP publications.

For full details about the award and to download an application form, please visit our Physics Communicators Group award web page here:

http://www.iop.org/activity/groups/subject/physcom/prize/page_50554.html.

Summer Meeting Review

The Psychology of Communicating Science

The 2011 Physics Communicators Group annual summer meeting was held at the IOP Portland Place headquarters on 8th June 2011. The meeting attracted over 30 participants from a broad range of physics related backgrounds, including PhD students, school science teachers, university academics and researchers, all of whom have a vested interest in promoting physics to the wider community.

Two keynote talks were provided by Jack Klaff, a strong advocate of the public understanding of science who has worked in film, theatre and academia

(<http://www.intelligencesquared.com/people/k/jack-klaff>), and Liz Kalaugher, the editor of the IOP's 'environmentalresearchweb' (<http://environmentalresearchweb.org>).



Jack Klaff's talk was entitled 'Stop visualising!', and through anecdotes, stories and examples, his presentation gave an eye opening account of how scientists are perceived by wider audiences, warning against the many misconceptions scientists introduce when using visualisation and metaphor in discussions. He began with the example of the London Underground map being very good for using the tube, but not a very good representation of the 'real' world. He then pointed out, among many other examples, the unnecessary confusion introduced when scientists talk about 'building blocks' and 'pillars' of knowledge, the 'flow' of electricity, the 'spin' of electrons, the 'fabric' of space-time and the 'uncertainty principle', which is actually very quantifiable!



The talk by Liz Kalaugher on 'The psychology of communicating climate change' provided a wealth of statistics and findings about the perceptions of different groups to climate change and how the climate change debate is influencing different people's views. Her talk opened with the statement that 97% of scientists believe in climate change, compared with only 23% – 80% of the general public, with responses from different groups of people dependent on knowledge of the recent Climate Gate scandal, the current financial outlook, the weather right now, the use of 'climate change' or 'global warming' terminology in the



discussion, political views, gender and age. The discussion of climate science is clearly complex and consideration needs to be given in how the uncertainties involved are presented. Key suggestions given in the talk were to present to groups rather than individuals and to use numbers rather than words, including the following numerical example spoken by the former governor of California, Arnold Schwarzenegger: “If 98 doctors say my son is ill and needs medication and two say ‘No he doesn’t, he is fine’, I will go with the 98. It’s common sense – the same with climate change. We go with the majority, the large majority”.

Liz also provided a table of words with very different scientific and non-scientific meanings that can cause confusion when used in public science debates. Part of the table is shown below and it is adapted from a document available freely online from the Center for Research on Environmental Decisions (CRED) entitled: ‘The Psychology of Climate Change Communication’

(<http://www.cred.columbia.edu/guide>). The document also includes information relevant to many other aspects of Liz’s talk.

<i>Scientific word</i>	<i>Non-scientific meaning</i>	<i>Better word or phrase</i>
Enhance	Improve	Intensify, increase
Uncertainty	Not knowing	range
Risk	Low-probability event	probability
Error	Wrong, incorrect	Uncertainty associated with a measuring device or model
Bias	Unfair and deliberate distortion	Offset from the observed value
Positive trend	A good trend	Upward trend
Positive feedback	Constructive criticism	Self-reinforcing cycle



Our new Physics Communicators Group ‘Very Early Career Physics Communicator Award’ was launched by Dr Maggie Aderin-Pocock (pictured above) and you can read more about the award application/nomination details in this newsletter.

The final session of the afternoon consisted of two parallel discussions, one entitled ‘What do you want – what do you really, really want?’ to debate how the Physics Communicators Group should move forward, and a second discussion entitled ‘Public engagement and the research excellence framework’, where the latest information on the requirements of ‘impact case studies’ that feature public engagement were presented. Each session was well attended with the former discussion generating a number of new ideas and activities that the Physics Communicators Group can develop or become involved with, including: the organisation of new professional workshops for group members to hone their

science communication skills or try out new public engagement activities and talks with an audience of like minded peers; book group style get togethers; the potential presence of the group on the 'TalkPhysics' (<http://www.talkphysics.org>) and 'TeachMeet' (<http://teachmeet.pbworks.com>) discussion forums; a 'useful links' section to be added to the group's IOP web page.

These ideas, and some others, were noted by the group committee and various committee members have subsequently taken on actions to develop them further. More news and information will be circulated soon.

Committee Changes

New committee members and roles

Following the Physics Communicators Group AGM held during the June summer meeting there were a number of changes to the committee membership. Averil Macdonald stood down as Chair after seeing the group grow and find its feet following its formation over three years ago. Our former newsletter editor, Bob Fairbrother and Pete Edwards also stood down as ordinary members of the committee. A big thank you for all the time and energy you all put into the Physics Communicators group in making it what it is today!

After some re-arranging of current committee members, three new ordinary members were welcomed to the group - Ceri Brenner, John Dore and Kevin Mosedale, while Martyn Bull was elected to Chair and David Smith to the role of Secretary. Our Treasurer remains Bob Boutland, who will continue to vigorously keep IOP on their toes with regard to our group finances! Brief biographies of the three new committee members are given below so you can see what they bring to the group:

Ceri Brenner

I am currently in my final PhD year, writing my thesis on the work I have been carrying out in plasma physics over the last three years. I am affiliated to the University of Strathclyde and work at the Central Laser Facility at the Rutherford Appleton Lab. My research work is in the field of high power laser-plasma interactions, with a particular interest in laser-driven particle acceleration. Using the interaction of an ultra-intense laser pulse with a highly ionised medium such as plasma, we can generate very strong accelerating fields which act on ions and electrons in the plasma, producing high quality particle beams that can be used



for many applications, from high resolution imaging to next generation particle beam cancer therapy.

Alongside my research, I have a strong passion for science communication. I have taken part in many varied outreach events so far, such as science fairs, the BBC's Wallace and Gromit demonstration sessions and the SET for Britain poster competition in the houses of parliament. I recently won the 'I'm a scientist, get me out of here' Quantum zone online outreach event which has inspired me to venture into new forms of media such as podcasting and has also given me many opportunities to share the joy of science with the public.

John Dore

I am a retired physicist at the University of Kent and began my career at the University of Birmingham in nuclear structure physics, working at the Rutherford Lab, but after moving to Kent in 1966, I switched to neutron diffraction for the structural study of disordered materials, with a particular interest in water and amorphous ice. This topic has continued with the study of water and ice nucleation under a range of different conditions, i.e. super-cooled water, water in hydrophilic and hydrophobic mesopores and most recently, doubly-metastable water (negative pressures). I still have a number of active international collaborations and am currently co-writing a review on the structural properties of carbon materials, incorporating activated carbons and carbon nanotubes. I have lectured on a number of core physics subjects but have now shifted my interests to various outreach activities including maths as well as science topics. I also run a local junior chess club at UKC.



Kevin Mosedale

I am currently the Head of Physics at Radley College just outside Oxford where I have been since 2004. Prior to that I spent 16 years as a Logistics officer in the Army, having joined straight after university where I read Natural Sciences. My interest in Physics communication arises not just out of my role as a teacher, but also because I enjoy trying to share my enthusiasm and interest with anyone who will listen!



Reaching out and getting started in 'Outreach'

A joint meeting with the IOP Merseyside Branch – Refreshments included.

29th November 2011 18:30 – 20:30

at the University of Liverpool, Surface Science Research Centre*

Dr Andy Newsam and Ann Marks

A free workshop for anyone interested in exciting an interest in physics amongst school pupils and/or the general public – covering a wide range of fun activities including Physicists in Primary Schools and Physics Buskers. Join us to find out how you can get involved, share best practice and be inspired.

(*The SSRC is building 210 on the campus map at <http://www.liv.ac.uk/maps/>).

Feedback

The committee welcomes comments on the activities described above and suggestions for other activities. Please contact the secretary David Smith directly (david.smith@brunel.ac.uk, 01895 266593) or through MyIOP (<http://my.iop.org>).

The Group's webpage is <http://pcom.iop.org>.

Newsletter

If you would like to include something in future editions of this newsletter please send copy to John Dore (J.C.Dore@kent.ac.uk).

Joining the Group

To join the group please log onto MyIOP (<http://my.iop.org>), navigate to the relevant Network for the Group and select *Sign up for this network*. Alternatively please contact the membership department. All groups are free to join, however to join a group you must first be a member of the Institute. Details of how to join the Institute can be found at www.iop.org.

This newsletter is also available on the web and in larger print sizes.

The contents of this newsletter do not necessarily represent the views or policies of the Institute of Physics, except where explicitly stated.

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