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ICPE Chair's Corner



It is my great pleasure to publish the ICPE Newsletter after a long interval. ICPE has invited Professor Manjula Sharma to be the new editor. The Newsletter will aim to be more compact but more informative. Also, ICPE has decided to publish its Newsletter only electronically.

Meanwhile our commission is in another three year term (November 2014 to October 2017). ICPE (IUPAP C14) is organized by 14 members from across the globe:

- Hideo Nitta (Chair, Japan),
- Leoš Dvořák (Vice-Chair, Czech Republic),
- Zulma Gangoso (Secretary, Argentina),
- Ian Bearden (Denmark),
- Qiang Chen (China),
- Lotten Glans (Sweden),

- Dmitry Khokhlov (Russia),
- Priscilla Laws (USA),
- Eilish McLoughlin (Ireland),
- Deena Naidoo (South Africa),
- Roberto Nardi (Brazil),
- Gorazd Planinsic (Slovenia),
- Jayashree Ramadas (India); and
- David Sands (UK).

In addition we have four associate members:

- Alex Mazzolini (Australia),
- Sarojiny Saddul-Hauzaree (Mauritius),
- Fatih Taşar (Turkey); and
- Manjula Sharma (Australia).

An important mission of ICPE is to organize or support international conferences on physics education. This summer, 2-7 July 2017 in Dublin, ICPE will organize the annual international conference with GIREP (Groupe International de Recherche sur l'Enseignement de la Physique) and the Physics Education Division of the European Physical Society (EPS). More detail is provided below by the Chair, Eilish McLoughlin. I hope to see you there.

Professor Hideo Nitta, ICPE Chair
Tokyo Gakugei University,
Division of Natural Sciences, Japan

In this Issue:

- [ICPE Chair's Corner](#)
- [Introducing the New Editor and Assistant Editor](#)
- [Article: Regional centres for physics teachers in the Czech Republic - example of a possible kind of informal in-service teacher training](#)
- [Report: Teacher Development Project in South Africa](#)
- [Second World Conference on Physics Education - 2016](#)
- [Welcome to ICPE in Partnership with GIREP and EPEC](#)
- [2015 ICPE Medal Awardee - Professor Kaihua Zhao](#)

Introducing the New Editor and Assistant Editor



Message as Editor

Over the years I have overseen several newsletters, such as those for SaMnet and ASELL Schools.

I have been 'in charge' of conference proceedings for the Australian Conference for Mathematics and Science Education for 7 years and am the Chief Editor for the International Journal for Innovation in Science and Mathematics Education.

I hope I can use my experiences to produce, shape and hand over an

Professor Manjula Sharma, The University of Sydney, Australia (Associate Member-2015)

Editor - ICPE Newsletter

I completed my Bachelors at The University of the South Pacific, Fiji Islands and my PhD and MEd (research methods) at The University of Sydney. Currently, I head the Sydney University Physics Education Research (SUPER) group. Nationally, I lead the Science and Mathematics network of Australian University Educators, SaMnet, and Advancing Science and Engineering through Laboratory Learning, ASELL Schools. As a change agent, I invest in leadership development, curriculum initiatives and building capacity in science and mathematics education across the school and university sectors.

I have some 100 refereed publications and book chapters and the findings of my research are being translating into practice and informing decisions. I have been awarded the Australian Institute for Physics Education Medal in 2012, Australian Learning and Teaching Council Team Citation for Outstanding Contributions to Student Learning in 2008 and The University of Sydney Vice-Chancellor's Award for Excellence in Teaching in 2006. I am a recipient of the Australian Government Office for Learning and Teaching National Teaching Fellowship and am a Principal Fellow of the UK Higher Education

ICPE Newsletter which will serve the ICPE Community well.



Message as Assistant Editor

My prior experiences have included being editor of the SaMnet and ASELL Schools newsletters and contributing editor of the Australian Council of Deans of Science: Science and Maths Teaching & Learning newsletter.

I look forward to using my experiences to help shape and deliver the ICPE Newsletter befitting the ICPE community as it moves into the 21st century.

Academy.

Students who did their postgraduate studies with me are excelling. One of my most recognised students is Dr Derek Muller, creator of the [Youtube channel Veritasium](https://www.youtube.com/user/1veritasium) (<https://www.youtube.com/user/1veritasium>) with nearly 4 million subscribers. His PhD work is summarised in a [TEDxSydney talk](https://tedxsydney.com/talk/derek-muller-the-key-to-effective-educational-science-videos/) (<https://tedxsydney.com/talk/derek-muller-the-key-to-effective-educational-science-videos/>).

Gabriel Ha Nguyen, The University of Sydney, Australia

Assistant Editor - ICPE Newsletter

While loving science since I was young, I started my association with physics at the International Science School (ISS) in 2007 at the University of Sydney. The influence of ISS brought me to the University of Sydney as a Combined Science/Law student in 2008, undertaking TSP and astrophysics projects in my undergraduate years.

However, since ISS I was fascinated by physics education and science communication. I became actively involved with the Young Scientists of Australia, Sydney Chapter; tutored HSC and 1st Year Physics students since 2011; and completed an Honours project with the SUPER Group, digging into people's views of the scientific method. I have also worked as the Science Communicator (Physics) at the University of Sydney, managing and delivering outreach programs for the School of Physics.

Currently, I am a current PhD student with SUPER in 2015 under the supervision of Professor Manjula Sharma, determining how university science education affects and develops student understanding of scientific inquiry. In my spare time, I am an avid photographer, always seeking ways to capture the human experience in the world around us.

Article: Regional centres for physics teachers in the Czech Republic - example of a possible kind of informal in-service teacher training

Leoš Dvořák

Charles University in Prague, Czech Republic

In-service teacher training can have various forms. One type of it evolved in last few years in the Czech Republic proved to be really appreciated by physics teachers. Hopefully, at least some of its aspects could be inspiring also for physics educators in other countries.

Regional centres for physics teachers started in 2013 as a part of a project “Elixir for Schools” of the foundation “Depositum Bonum”. They are financially supported by this foundation so all their activities are free of charge for teachers. Nevertheless, we are convinced that money is not the main “engine” pushing the project further and that many activities could be organized with very limited financial support or even without it.

Nowadays, there are 21 regional centres. Each centre is located at some school (higher or lower secondary school) and is led by an experienced physics teacher. Once a month, an afternoon meeting is organized for physics teachers from a nearby region. Meetings are devoted to physics experiments, creating simple tools usable in physics teaching, discussing how to teach some parts of physics etc. Sometimes, excursions to scientific institutions or science centres are organized or experts, for example from universities, come to give a lecture. What we see as very important is the fact that a community of physics teachers developed in each centre and some participants also lead parts of the meetings.

Teachers come to centres on a voluntary base. (There has been no strict system of teacher career development in our country up to now for which visiting the centres would provide some credits to teachers.) Therefore, apart from some formal feedback, the fact that teachers come back to further meetings is the best proof that regional centres fulfil their needs.

In fact, teachers from other towns and sub-regions also expressed their interest in such activities. Therefore, about a year ago the most experienced leaders of centres started to go to other places and led meetings similar to those in their centres. Informally, we call this activity “flying centre”; at each place, a meeting repeats about 3 times a year. Together, centres and flying centres affect more than seven hundred physics teachers (quite reasonable number for a country like ours).

It is important that the whole system of centres is “rooted in schools” and the leaders are experienced teachers who know the needs of their colleagues. Of course, the leaders are not left alone; after a series of introductory seminars in the beginning of the project there are now special weekend seminars for them, three per year. They share their experience also by other means, including a special web discussion group. Also, there is a common conference for all teachers participating in the project once a year. (Unfortunately, due to technical reasons, the number of participants is limited to about two hundred.)

The system of regional centres is still evolving – and maybe in some future similar centres will be organized also for teachers of other subjects. In case you are interested you can find some further details in a paper published in the Proceedings of the conference GIREP –MPTL 2014 (Dvorakova I., Dvorak L.: “Elixir for Schools” – a new initiative supporting Czech physics teacher”), current state of the project is described in the paper that will be published in the Proceedings of the conference WCPE 2. Also, you can contact us; it will be our pleasure to share our experience and to learn from your own.

Report: Teacher Development Project in South Africa

Deena Naidoo

University of Witwatersrand, South Africa



Royal Highness Prince Edward interacting with learners, UJ Science Faculty personnel and SAIP representatives at the Soweto Science Centre.

The [South African Institute of Physics \(SAIP\)](http://saip.org.za/) (<http://saip.org.za/>) initiated a Teacher Development Project in partnership with the Institute of Physics (UK) and the University of Johannesburg (UJ), South Africa. Through funding leveraged from the British High Commission, a series of teacher professional development workshops were coordinated leading to the achievement of significant milestones.

Inspired by the critical need to foster holistic teacher professional development, the workshops primarily focus on the development of content knowledge as well as pedagogical content knowledge. The Teacher Development Project was recently recognized as the best managed and impactful project in the category of Science and Innovation by the British High Commission.

In addition, teacher workshops have become a key feature of the SAIP annual conference with a view to add an innovative dimension to meaningful enhancement of teacher professional development within the broader South African context.

The Teacher Development Programme is currently one of the main projects of the SAIP which is planned to be expanded nationally. In 2018, teacher workshops will be one of the main themes of the International Conference on Physics Education (ICPE) which will be held in Johannesburg, South Africa. More details will follow in subsequent newsletters.

In addition, the [African Physics Education network \(AfPEN\)](http://afpen.saip.org.za/) (<http://afpen.saip.org.za/>) is a fairly new initiative to inform teachers and instructors.

Second World Conference on Physics Education - 2016

Chair - Maurício Pietrocola



In 2012, the GIREP and ICPE held for the first time a joint conference, which was the World Conference on Physics Education. The second joint conference was held in São Paulo/Brazil from 10 to 15 July 2016. Assembling more than 350 participants, including physics educators, high school and College physics teacher and pre-graduate and graduate physics students, the conference discussed the theme:

Contemporary Science Education and Challenges in the Present Society: perspectives in Physics Teaching and Learning.

The Plenary Sessions were given by:

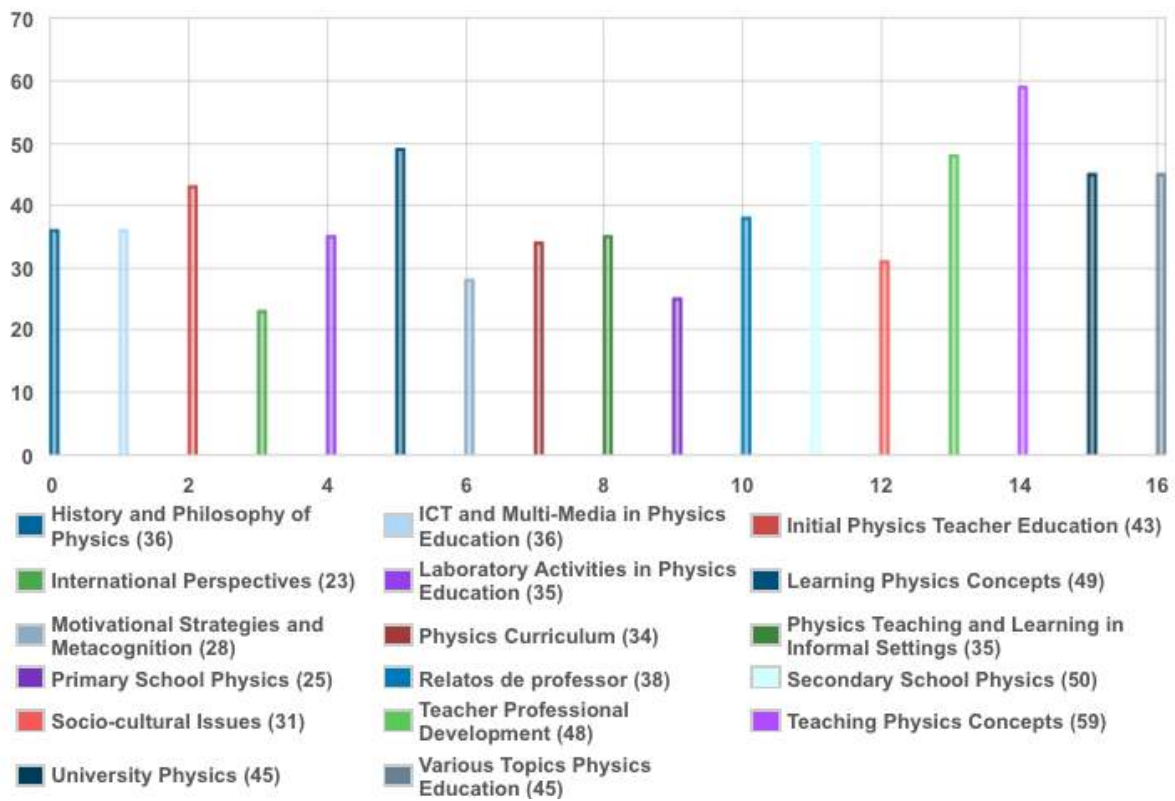
- Ian Laurence, Institute of Physics, UK,
- Prof. Ton Ellermeijer, Foundation CMA, Netherlands,
- Prof. Paula Heron, University of Washington, USA,
- Prof. Leoš Dvořák, Faculty of Mathematics and Physics, Charles University, Czech Republic,
- Laurence Viennot, University Paris Diderot, France,
- Hideo Nitta, Tokyo Gakugei University, Japan.

The scientific program incorporated *almost 300 presentations* organized in Oral Presentations, Posters Presentations, Teacher Reports. The chart below shows the distribution of the presented works by subject:

The Brazilian agencies (CNPq, CAPES and FAPESP), IUPAP, GIREP, AAPT's Len Jossen Fund offered financial support in order to help participants from twenty nine countries of all continents to attend the conference.

The works presented at the Second WCPE conference will originate three kinds of publication:

- Selected Papers in the *Euro-Asian Journal of Science and Mathematics Education* with full texts.
- The Proceedings of the conference with reduced texts (3 to 5 pages each)
- A Book published by Springer with the keynote speaker and symposium contributors.



GIREP-ICPE-EPEC 2017



3rd-7th July 2017,
Dublin City University, Dublin, Ireland



Welcome to ICPE in Partnership with GIREP and EPEC

Chair - Eilish McLoughlin

Dublin City University, Ireland is proud to be the host venue for the international collaboration of three conferences in Physics Education from 3rd – 7th July 2017.

The GIREP-ICPE-EPEC 2017 conference will be hosted by the Centre for the Advancement of STEM Teaching and Learning (CASTeL) at Dublin City University and is jointly organised by **International Research Group on Physics Teaching (GIREP)**, **International Conference on Physics Education (ICPE)** of the Commission C14 of the **International Union of Pure and Applied Physics (IUPAP)** and the **European Physical Society - Physics Education Division (EPS PED)**.

The theme of this conference will be:

*Bridging Research and Practice in Physics
Teaching and Learning*

The conference programme will include a range of presentation types, including keynote speakers, single and symposium oral presentations, poster presentations and workshops. Further information and registration is available on <http://www.girep2017.org/>

IMPORTANT DATES

Date	Details
1st March 2017	Close of Abstract Submissions
3rd April 2017	Accepted Authors Notified
13th April 2017	Close of Early Bird Registration Fee
12th May 2017	Close of Standard Registration Fee
12th May 2017	Accepted Authors Registration Deadline Close of Standard Registration Fee Open Late Registration Fee

2015 ICPE Medal Awardee - Professor Kaihua Zhao

Message to community



It is my great honor to be awarded an ICPE Medal. As a past member of ICPE some twenty years ago I keep consistently nice feelings to the colleagues in ICPE those days and to the organization as well. I would like to express my deep gratitude to ICPE for the award and the representation cited by Prof. Hideo Nitta.

After the conference I had a pleased journey around Brazil. It was the first time I got there. Before this visit in my concept Brazil is merely a farmost country located at the antipodal end of the globe, good at football and Samba.

The experience of the Conference and the travel after, the high level of academy and education of Brazil impressed me very much.

The people everywhere I met were kind and polite. I started to share the Brazilian culture and history. The tropical rainforest of Amazon and waterfalls in Iguassu are marvellous and unique, and it seems, ecological protection has been paid much attention.

All in all I should thank the conference organizer with the only Portuguese word I just learned, obrigato.

Professor Kaihua Zhao

Citation



Professor Kaihua Zhao is awarded the ICPE Medal for 2015 in recognition of his sustained efforts in physics education over more than a half century, both domestically and internationally.

Kaihua Zhao graduated from Beijing University in 1950 and received a doctorate from Moscow State University in 1958. Dr. Zhao immediately became a faculty member of Beijing University, becoming Professor in 1978. From 1983 to 1990 he was the Dean of the Department of Physics and was the Vice Chair of the Chinese Physical Society from 1991 to 1999.

For more than 50 years Professor Zhao has taught tens of thousands of students. He has compiled and composed 23 textbooks on various physics topics.



These textbooks have played fundamental roles in physics education in the Chinese Universities and become key reference books for teachers and students in a vast number of schools. Especially he has actively promoted the integration of scientific research achievements into teaching and learning. His textbooks have won the highest level National Textbook Award three times and twice the prize of the State Education Commission.

In 1984 China started to join the International Physics Olympiad (IPhO). Professor Zhao was one of the early organizers of Chinese teams. In 1994, he presided the 25th IPhO held in Beijing, which enhanced greatly the international influence on physics education in China.

Professor Zhao was the pioneering person to introduce the physics teaching in China to the international community. Also, he made many efforts to organize international conferences on physics education, such as the US-China-Japan International Conference on Physics Teaching.

Today the International Commission on Physics Education takes great pleasure in recognizing Professor Zhao's devotion to Physics Education and uncountable number of students and teachers.



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