



IUPAP

INTERNATIONAL UNION OF PURE AND APPLIED PHYSICS

C₁₄ COMMISSION – PHYSICS EDUCATION

REPORT

2nd C&CC Meeting – Vilnius, Lithuania,
31st Oct – 2nd November 2018

PROF. DR. ROBERTO NARDI
C14 Commission – Chair (2018-2020)
UNESP – State University of São Paulo, School of Sciences
Education Department - Bauru Campus
São Paulo, Brazil

Brazilian Society of Physics (SBF)
São Paulo, 10/10/2018.

INTRODUCTION

This document is a report of the main activities in which Prof. Dr. Roberto Nardi, chair of the C₁₄ Commission – Physics Education, and representing the Brazilian Society of Physics (SBF) in this Commission, participated in the year 2018.

The main subjects of this report are:

1. The C₁₄ Commission and its members
2. International Conferences and events organized by the Commission and held in 2018
3. Participation in the 1st C&CC IUPAP Meeting
4. Other events participated not officially as C14 chair
5. Publications of the ICPE Newsletter
6. Looking forward

C14: PHYSICS EDUCATION

<http://iupap.org/commissions/>

The C14 Commission is one of the 20 IUPAP's commissions. It was established by the IUPAP in 1960, to promote the exchange of information and views among the members of the international scientific community in Physics Education. The officers in the period 2018-2020 are:

POSITION	NAME	GENDER	COUNTRY	EMAIL
Chair	Roberto Nardi	M	Brazil	r.nardi@unesp.br
Vice-Chair	Deena Naidoo	M	South Africa	Deena.Naidoo@wits.ac.za
Secretary	David Sands	M	United Kingdom	d.sands@hull.ac.uk
Member	Mayank Vahia	M	India	vahia@tifr.res.in
Member	Eilish McLoughlin	F	Ireland	eilish.mcloughlin@dcu.ie
Member	Jenaro Guisasola	M	Spain	Jenaro.guisasola@ehu.es
Member	Julio Benegas	M	Argentina	jbenegas@unsl.edu.ar
Member	Naoshi Takahashi	M	Japan	naoshi@ed.kagawa-u.ac.jp
Member	Nathalie Lebrun	F	France	nathalie.lebrun@univ-lille1.fr
Member	David Sokoloff	M	United States	sokoloff@uoregon.edu
Member	Manjula Sharma	F	Australia	manjula.sharma@sydney.edu.au
Member	Zuzana Jeskova	F	Slovakia	zuzana.jeskova@upjs.sk
Member	Tetyana Antimirova	F	Canada	antimiro@ryerson.ca
Member	Ian Bearden	M	Denmark	bearden@nbi.ku.dk

The Associate Members (mandate finishing in 2018) are:

Sarojiny Saddul-Hauzaree
Department of Science Education - Mauritius Institute of Education,
Mauritius

Mehmet Fatih Taşar
Gazi Üniversitesi - Gazi Eğitim Fakültesi – Ankara
Turkey

Alex Mazzolini
Australia

International Conferences and events

Organized by the C₁₄ Commission (2018)

The International Conference on Physics Education (ICPE-SAIP-WITS 2018)

(1 – 5 October 2018) – Misty Hills Hotel and Conference Centre – Muldersdrift - Johannesburg – South Africa

<http://events.saip.org.za/conferenceDisplay.py?ovw=True&confId=93>



Local Organising Committee

Professor Deena Naidoo – Chair, University of the Witwatersrand, South Africa
Mr Brian Masara, South African Institute of Physics Office, South Africa
Professor Jonathan Kearthland, University of the Witwatersrand, South Africa
Dr Sam Ramaila, University of Johannesburg, South Africa
Professor Saalih Allie, University of Cape Town, South Africa
Professor Cedric Linder, Uppsala University, Sweden
Professor Sarojiny Saddul-Hauzaree, Mauritius Institute of Education, Mauritius
Professor Aletta Zietsman-Thomas, University of the Witwatersrand, South Africa
Dr Femi Otulaja, University of the Witwatersrand, South Africa
Professor Andrew Forbes, University of the Witwatersrand, South Africa
Dr Douglas Clerk, University of the Witwatersrand, South Africa
Dr Jeanne Kriek, University of South Africa, South Africa
Dr Miriam Lemmer, North-West University, South Africa
Dr Mahomed Moolla, University of the Witwatersrand, South Africa
Dr Colleen Henning, St John's College, South Africa
Dr Elsa Lombard, Education and Training Coordinator, CT LAB (PTY) LTD, South Africa
Dr Kevin Govender, IAU Office of Astronomy for Development, South Africa
Dr Krish Reddy, University of Johannesburg, South Africa
Professor Alan Cornell, University of the Witwatersrand, South Africa
Mr Itumeleng Phage, Central University of Technology, South Africa

Conference Logistics Management

CARLAMANI CONFERENCES AND EVENTS

Programme Committee

Professor Deena Naidoo – ICPE 2018 Chair, University of the Witwatersrand, South Africa
Mr Brian Masara, South African Institute of Physics Office, South Africa
Professor Jonathan Kearthland, University of the Witwatersrand, South Africa
Dr Sam Ramaila, University of Johannesburg, South Africa
Professor Saalih Allie, University of Cape Town, South Africa
Professor Cedric Linder, Uppsala University, Sweden
Dr Douglas Clerk, University of the Witwatersrand, South Africa
Professor Jeanne Kriek, UNISA, South Africa
Dr Krish Reddy, University of Johannesburg, South Africa
Dr Femi Otulaja, University of the Witwatersrand, South Africa

Scientific Advisory Committee:

Professor Roberto Nardi (UNESP/FC - Campus de Bauru, Brazil)
Professor Leos Dvorak (Charles University, Czech Republic)
Professor Hideo Nitta (Tokyo Gakugei University, Japan)
Professor Priscilla W. Laws (Dickinson College, USA)
Professor Ian G. Bearden (University of Copenhagen, Denmark)
Professor Gorazd Planinsic (University of Ljubljana, Slovenia)
Professor David Sokoloff (University of Oregon, USA)
Professor Eilish McLoughlin (Dublin City University, Ireland)
Professor Zulma Gangoso (Argentina)
Professor Manyank Vahia (India)
Professor Jenaro Guisasalo (Spain)
Professor Julio Benegas (Argentina)
Professor Naoshi Takahashi (Japan)
Professor Natalie Lebrun (France)
Professor Manjula Sharma (Australia)
Professor Zuzana Jeskova (Slovakia)
Professor Tetyana Antimirova (Canada)

ICPE 2018 was a truly International Conference!! with delegates from around the globe: South Africa, Botswana, Nigeria, Congo, Australia, USA, Brasil, UK, India, Argentina, Sweden, Norway, Thailand, Spain, Italy, Canada, Switzerland, Japan, China, Czech Republic, Germany, Uganda comprising of physics educators, postgraduate students, teachers, researchers and policy makers working in physics education research and in physics education, from schools, colleges, universities and governments.

Scientific Programme: 100 Single Oral Presentations, 25 Poster Presentations, 8 Invited Plenary Talks, 4 Workshops.

Social Events: Welcome Reception, Carnivores Dinner, Tour to the University of the Witwatersrand, Lion and Safari Park, Lesedi Cultural Village and Conference Banquet.

Meetings/Interactions: C14 meeting, IoP, IUPAP and Women in Physics, C13.

Summary: In addition the highlight of conference was the constant interaction between delegates resulting in potential network and collaborators.

CONFERENCE PROGRAMME OUTLINE

Sunday 30 September 2018

15h00 – 18h00 Registration

Monday 1 October 2018

07:30 onwards Registration
09:00 – 10:00 Opening Ceremony
10:00 – 18:00 Full day conference programme

19:00 – 21:00 Welcome Function

Tuesday 2 October 2018

08:30 – 18:00 Full day conference programme

19:00 – late Carnivores Dinner

Wednesday 3 October 2018

08:30 – 17:00 Conference site visits to Wits University, Lion & Safari Park

18:00 - 21:00 Off-site dinner at Lesedi Cultural Village

Transport will return delegates to Misty Hills Hotel +- 21:00

Thursday 4 October 2018

08:30 – 18:00 Full day conference programme

19:00 – late Conference Banquet

Friday 5 October 2018

08:30 – 14:00 Half-day conference programme and Closing Ceremony

The GIREP-MPTL INTERNATIONAL CONFERENCE - 2018

(ICPE-SAIP-WITS 2018)

San Sebastián, Spain, 9-13 July 2018

C14 Chair's participation in the Scientific Committee and presenting research outcomes. The report below was prepared by the chairs of this meeting and was published in the ICPE Newsletter # 67.

Jenaro Guisasola and Kristina Zuza

(On behalf of the local organizing committee of the GIREP-MPTL 2018 Conference)

The GIREP-MPTL 2018 international conference offered the opportunity for 257 delegates from 42 countries to come to San Sebastian, 9 - 13 July, to share their knowledge and experiences under the theme of "Research and Innovation in Physics Education: two sides of the same coin".

The Conference was organized by the Donostia Physics Education Research Group (DPER) at the University of the Basque Country (UPV/EHU) in cooperation with: the Conference of the International Research Group on Physics Teaching (GIREP), Multimedia Physics Teaching and Learning (MPTL) and Cursos de Verano-Udak Ikastaroak at UPV/EHU.

The Conference was sponsored by: Real Sociedad Española de Física, European Physics Society-Physics Education Division (EPS-PED), City Hall of San Sebastian, the Provincial Council of Guipuzcoa and the International Conference on Physics Education (ICPE) of the Commission C14 of the International Union of Pure and Applied Physics (IUPAP). The Conference organizers gratefully appreciate the patronage received from the Department of Education of the Basque Government for this conference.

Altogether, there were 181 oral presentations, 49 poster presentations, 10 workshops, six plenary sessions, two plenary dialogues, and five GIREP Thematic Group contributions - across the seven conference topics:

1. Physics teaching and learning at Primary and Secondary Education
2. Physics teaching and learning at University
3. Pre-service and in service physics teachers education
4. Physics education in non-formal settings
5. Physics into STEM teaching and learning
6. ICT and multimedia in Physics Education
7. Nature of Science, gender and socio-cultural issues in physics education

Participants came from the following countries:

Argentina (5), Australia (4), Austria (5), Belgium (4), Brazil (14), Canada (2), Colombia (1), Czech Republic (14), Denmark (2), Ecuador (2), Finland (4), France (3), Germany (19), Greece (2), Hungary (6), Ireland (6), Israel (12), Italy (24), Japan (2), Malta (3), Mexico (11), Netherlands (12), New Zealand (1), Norway (1), Poland (7), Portugal (3), Romania (2), Russian Federation (1), Slovakia (2), Slovenia (3), South Africa (1), Spain (38), Sweden (2), Switzerland (3), Thailand (2), Turkey (5), United Kingdom (11), United States (10), Chile (1), Uruguay (3), Venezuela (1), Vietnam (1).

The Conference provided an opportunity to recognize outstanding individuals in Physics Education. Professor Gorazd Planinšič from the University of Ljubljana (Slovenia) received the GIREP medal for his relevant contributions in Physics Education.

57 PhD, Masters degree and undergraduate students participated in the conference, presenting posters and oral presentations. A “Best PhD Student Oral Presentation Prize” was awarded by the Real Sociedad Española de Física and a “Best PhD Student Poster Prize” was awarded by the European Physical Society.

The six invited speakers were:

- Dr. Gorazd Planinšič
- Dr. Claudio Fazio
- Dr. Terhi Mäntylä
- Dr. Trinh Ba Tran
- Dr. Antxon Santamaria
- Dr. Mila Kryjevskaja

The idea of a “Dialogue” involves two experts with a leader who gives a brief feedback on the subject and proposes to the two experts questions for the discussion. The two invited dialogues were:

Dialogue 1: Primary, Secondary and University pre-service physics teacher Education. Leader: Marisa Michelini. Invited speakers: Knut Neumann and Gabriela Lorenzo.

Dialogue 2: The actual and potential impact of physics education research in students’ learning. Leader: Mieke De Cock. Invited speakers: Jaume Ametller and Paula Heron.

The Conference included seven workshops, two invited by GIREP, one invited by EPS and one invited by MPTL. The Conference program also included three symposiums and one workshop from the GIREP Thematic Group (GTG) organized through international cooperation. The Conference also provided an opportunity for the international exchange focus at two sessions: European Projects Corner and Early Career Topical Discussions. In the “European Projects Corner”, on going European projects and ideas to find synergies and possible partners were presented. In the “Early Career Topical Discussion”, postdocs, new faculty, and other junior Physics Education Research (PER) members were invited to this topical discussion to meet and discuss common issues.

The second and third day of the Conference were dedicated to celebrating the teachers of physics and included two plenary presentations, two dialogues, 61 oral presentations, six symposiums and six workshops on classroom teaching ideas and practices.

Proceedings

The conference papers will be published in two formats. Keynote papers and some selected conference papers will be published in a printed form, with ISBN code, by Springer. Other presentations which pass the reviewing process, will be published in an electronic form by the Institute of Physics (IOP), under the Journal of Physics Conference Series (JPCS).

We would like to thank all contributors, especially the Invited Speakers, symposium Leaders and all individuals without whom the organization of the conference would not have been possible.



More information can be found at: <https://www.girep2018.com/en/home>



MRPE - Meeting of Research on Physics Education in Brazil

Campos do Jordão, São Paulo - 27 to 31 August 2018

(Reported by the Organizing Committee of the MRPE 2018)

The Meeting of Research on Physics Education (MRPE) is one of the main conferences for the Brazilian Society of Physics (SBF). It is the most important meeting on Physics Education in Brazil, bringing together nearly 300 Brazilian researchers.

In 2018, in its 17th edition, the Meeting was held from August 27 to 31 in Campos do Jordão, in the State of São Paulo. It covered 11 research areas, including a new one 'Equity, inclusion, diversity and cultural studies on Physics Education', ranked fourth based on the number of submitted papers.

280 full papers were submitted and 191 of them were approved to be presented at the Meeting. The Meeting included two plenary talks, six round tables, 30 oral sessions, and nine poster sessions.

The Meeting also included; a training school for young researchers, a book release, community meetings, and the MRPE assembly. At the assembly, we discussed, among other subjects, the role of the community of Physics Education researchers in the face of the problems that affect the current Brazilian educational policy.



More information can be found at:

<http://www.sbfisica.org.br/~epef/xvii/index.php/pt/>

<https://www.facebook.com/EPEF-569625386751329/>

Publication of the ICPE Newsletter

The C_{14} Commission publishes its newsletter with regularity, twice a year, primarily in electronic form. A small number of copies are printed and distributed at conferences. Professor Manujula Sharma (Australia) is the actual editor.

The Newsletter is published twice a year Issues back to 1995. The three last editions are available in the following links:

<https://mailchi.mp/04489a02108d/icpe-newsletter-issue-67-september-2018>

The # 67 issue (first link above) was edited during the ICPE 2018, at Johannesburg. Prof. Manujula Sharma (Australia), Editor, introduces in this number 67 the new Assistant Editor, Dr. Vicky Tzioumis.

This issue brings also a new section: recent master's and PhD thesis abstracts.

IUPAP - C14 Committee Meeting - Friday Oct 5, 2018, South Africa - Agenda

The last C14 Commission' Annual Meeting was held at Johannesburg, South Africa, right after the GIREP- Conference, on 7th of July 2017. Below is the agenda of this meeting held las week (1-5 October 2018). The minutes will be concluded and sent to the officers by the C14 ICPE Secretary, David Sands (U.K.) in the next weeks.

IUPAP - C14 Committee Meeting Friday Oct 5, 2018, South Africa Agenda



Location: Meeting Room, Pelindaba, Misty Hills Hotel, Muldersdrift, Gauteng Province, South Africa,

Time: Friday 5, October, 3:30 pm

- 1. Welcome and apologies**
 - 2. Approval of minutes from C14 July 2017 meeting, Dublin (Attached)**
 - 2.1. Matters arising
 - 3. Chair's Report**
 - 3.1. ICPE 2015-2017 report prepared by Hideo (Attached).
 - 3.2. ICPE budget
 - 3.3. Council and Commission Chairs Report (Attached)
 - 4. Conferences**
 - 4.1. ICPE 2018 - South Africa
 - 4.2. GIREP-ICPE-MPTL 2019 – Budapest, Hungary
 - 4.3. WCPE 2020 – Vietnam
 - 4.4. Future conferences
 - 5. C14 Associate Members**
 - 6. ICPE Newsletter**
 - 7. ICPE Medal**
 - 7.1. Normal medal
 - 7.2. Young Scientist Medal
 - 8. Activities**
 - 8.1. Physics education panorama (Attached draft)
 - 8.2. State of the Art Physics Book Series
 - 9. Corporation of ICPE with other associations and bodies, financial support**
 - 9.1. Dublin 2017 – GIREP-ICPE-EPEC
 - 9.2. South Africa 2018 - ICPE
 - 9.3. Budapest, Hungary 2019 – GIREP-ICPE-MPTL
 - 9.4. Vietnam, 2020 - WCPE
 - 10. A.O.B.**
 - 11. Date of next meeting**
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Looking forward

During the ICPE 2018 in Johannesburg the commissioners decided to nominate as Associate Members to the IUPAP C & CC Meeting to be held in Vilnius, Lithuania, next November, the following researchers.

Dr. Pornrat Wattanakasiwich

Physics Education Research Laboratory Department of Physics and Materials Science Faculty of Science Chiang Mai University, Thailand

Professor Mohammed Usman Degereji

Physics Department Federal College of Education, Yola Adamawa State, Nigeria

Professor Zulma Gangosa

Physics Department, University of Cordoba, Cordoba, Argentina

The next meeting, sponsored by the ICPE Commission will be held in Budapest, Hungary (July 2019) and in Hanoi, Vietnam (2020). Announcement of the ICPE-2019, are below. During the ICPE 2018, in Johannesburg, ICPE in Thailand (2011) and Australia (2012) were scheduled.



Prof. Dr. Roberto Nardi
UNESP – State University of São Paulo – Bauru Campus
ICPE Commission Chair
Brazilian Society of Physics
Bauru, São Paulo, October 10th, 2018.