

The ICPE medal was instituted to recognise “outstanding contributions to physics teaching of a kind that transcends national boundaries”. The ICPE medal recipient must fulfill two criteria:

- (1) the contributions to physics education should have extended over a significant number of years; and
- (2) the contributions should be international in their scope and influence.

The ICPE Medal for 2020 is conferred on Roberto Nardi, Associate Professor of Physics Education at the School of Sciences, São Paulo State University (UNESP), Bauru Campus, São Paulo, Brazil.

ASSOCIATE PROFESSOR ROBERTO NARDI

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Roberto Nardi is Associate Professor of Physics Education at the School of Sciences, São Paulo State University (UNESP), Professor of Physics Education Research, Founder and Chair, Vice-Chair and professor in the Graduate Program in Science Education (since 1997). He is a Researcher in Physics Education (level I-A), National Council for Scientific and Technological Development (CNPq). Roberto is also Editor in Chief of the *Ciência & Educação* Journal (SciELO/Clarivate, Science Education Program, UNESP, São Paulo State University) since 1997, and Editor and member of the Editorial Board and/or Evaluation Board of another 18 Physics/Science Education journals.

Roberto is a Member of the Council for the Inter-American Conferences on Physics Education (CIACPE) since 2019; the Brazilian Society of Physics (SBF); Brazilian Society for the Development of Science (SBPC); Brazilian Association of Research in Science Education (ABRAPEC); Council for the Inter-American Conferences on Physics Education (IACPE); European Science Education Research Association (ESERA); International History, Philosophy, and Science Teaching (IHPST) Group; Redlad – Red Latino-Americana de

Enseñanza de las Ciencias; and GIREP - Groupe International de Recherche sur l'Enseignement de la Physique.

Roberto is responsible for various teacher training courses and has been invited to serve in numerous advisory boards in public institutions about questions involving science and physics education in Brazil and other Latin American countries. He was former Member, Vice-Chair and Chair of the International Commission on Physics Education (C14) of the International Union of Pure and Applied Physics - IUPAP (2014-2021). He is also a member of the Council of the Interamerican Conferences on Physics Education (CIACPE) since 2019; and Chair, Member of Scientific Committees or participant in nearly 450 important scientific events in Brazil, the Americas, Europe and many other countries.

Roberto completed his Bachelor of Science in Physics at the School of Sciences, São Paulo State University (UNESP, Brazil) in 1972. In 1978, he completed his Master in Science Education at Temple University (Philadelphia USA) and in 1990, his Ph.D. in Education, Physics Education, at the University of São Paulo (USP). Roberto completed his Postdoctoral Fellow in Science Education at University of Campinas (Unicamp, Brazil) in 1997.

Roberto has supervised research (102) at Master's Level (22), PhD level (28), Postdoc (8), Scientific Initiation (14) and others (30) – all in subjects related to Physics Teaching and Physics Teacher Education. Among his publications are: 45 books, 78 book chapters, 12 proceedings, 191 papers in journals and 290 papers in Brazilian and other international meetings (450), most of them in science (physics) education, and teacher initial and continuing education.

Other professional roles and experience includes:

- Secretary, Vice-Chair and Chair of the Brazilian Association of Research in Science Education (ABRAPEC) – (2000-2005).
- Coordinator of the Science and Mathematics Education Division in the Post-Graduation Evaluation System at CAPES Coordination for the improvement of Higher Education Personnel (CAPES/DAV), Ministry of Education, Brazil (2008-2011).
- Member of the Physics Education Research Commission – Brazilian Society of Physics – SBF – (2011-2013).
- President (2003-2005), Vice-President (2001-2003) and founder of the Brazilian Association for Research in Science Education – ABRAPEC.
- Teacher Education Development (Physics, Chemistry, Biology and Mathematics) Advisory Committee – Brazilian Ministry of Education (MEC/SESu) – Brasília - Brazil – (2001-2003).
- Secretary for Teaching Affairs – Brazilian Society of Physics – SBF - (1991-1993).
- Physics and Science Education Research Group Coordinator (since 1995). Science Education Graduate Program – UNESP – founder (1997) and Program Coordinator (1997-2000; 2003-2005).
- Participated in several Science Education projects in Brazil, most of which funded by institutions like CAPES (PADCT/SPEC, Prociências), FAPESP, FUNDUNESP (PEC/FOR/PROF), CNPq, FINEP.

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CONSIDERATIONS ABOUT THE DEVELOPMENTS IN PHYSICS EDUCATION RESEARCH OVER THE LAST DECADES

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In a recent study carried out with researchers considered by their peers as pioneers of science education in Brazil, we have found important factors for the constitution of this field of research, as well as the characteristics of research in physics teaching. Based on literature that addresses and compares the development of science and science teaching, we describe the evolution of research and graduate studies in physics teaching in Brazil, relating them to intrinsic (national) and extrinsic (international) factors. We note that, as in the development of science, science education is not neutral either and hinges on several conditions that interfere with classroom teaching. We will highlight current themes that are present in research events in physics education, such as teaching for people with special needs, the presence of women in physics, teaching physics to other minorities, decolonization, and the advancement of the problematization of teaching through socioscientific questions. We understand that these advances, in the case of the Brazilian context, were possible due to the redemocratization of the country. We propose other current issues for discussion that arise for teaching physics in Brazil, such as the gap between the production of knowledge in the area - in general at universities, via postgraduate programs and research groups - and teaching on the school grounds. We cite, for example, the lack of interest in the scientific career, the dropout rates in physics degree courses and among in-service teachers, which we regard as challenges in other countries as well. More recently, there have been issues such as the denial of science, the growth of fundamentalist sects and attempts to interfere in education by groups that advocate a “no-party school”.

FURTHER READING

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