Welcome to the 64th International Newsletter on Physics Education!

This is the first edition distributed under the Editorship of Zulma Gangoso, so let me start by expressing my gratitude to Zulma for taking on this demanding job, and thanking her on behalf of all the readers for the time and effort she has been, and will be, devoting to it. I am sure we all wish Zulma the greatest of success in her new role, and look forward to benefitting from her work.

As always, there is much to report and reflect upon in the Newsletter, with many topics receiving lengthier treatment in the detailed reports that follow. This is certainly the case for the ICPE's own conference activity, where the great success of our participation in the 2012 World Conference on Physics Education, held in Istanbul, has provided a splendid backdrop and inspiration for the 2013 ICPE Conference that will be held in Prague (05-09 August). Also notable are the international conferences that, having gained endorsement from the Commission, have gone on to win support from the Commission's parent body IUPAP. In 2013 this will include the Inter-American Conference on Physics Education at Guayaquil in Ecuador (01-05 July), and the Canadian-American-Mexican Graduate Student Conference at the University of Waterloo (August 15-18). Naturally, we wish the greatest of success to all these forthcoming events.

In the different but related area of hands-on physics education, we should recall the 2012 Phsyware meeting organized at the University of Delhi, India by the former ICPE Chair, Pratibha Jolly. While very much a result of Pratibha's initiative, the Delhi meeting also involved current ICPE member Priscilla Laws, and is another indication of the Commission's continued engagement with the kind of low-cost, high quality, hands-on activity that Phsyware has already done so much to promote.

To this already rich list of activities should be added two ICPE Medal presentation ceremonies which were staged at the World Conference in Istanbul. The first, that of the 2011 Medal, honoured the Lady Cats, the popular and greatly appreciated hands-on physics demonstration group from Japan. The second, that of the 2012 medal, recognized the work of the influential physics education researcher Edward (Joe) Redish of the University of Maryland, one of the pioneers of the field. The spectrum of activities represented by these Medal winners is a clear indication of the richness of contemporary educational physics, as is the range and variety of the Meetings, Schools and Conferences that strive to support, reflect and stimulate it.

Another development that should be reported here is the appointment of three new Associate Commissioners who will be using their considerable talents and energy to aid the work of ICPE over the next three years. The new Associates are: Alex Mazzolini from Swinburne University of Technology in Australia; Fatih Taşar of Gazi University, Ankara, Turkey; and Sarojiny Saddul-Huuzaree from the Institute of Education in Mauritius. Associate members of ICPE are deliberately appointed out of phase with the Ordinary members of the Commission.

Continued on next page
Continued from page 1

Commission in order to ensure continuity between the three year cycles of Commission activity that are separated by IUPAP General Assemblies. I greatly look forward to my interactions with the new Associates and to hearing more about their work in future editions of the Newsletter.

Although the Chair’s Corner has a natural tendency to highlight the work of ICPE, I am also keen to ensure that it reflects broader issues in physics education. On this occasion there is one topic that seems to have recently achieved considerable prominence in the international educational press. This is the rise of the MOOC – the Massive Open Online Course. MOOCs date back to 2008 and are an outgrowth of the Open Educational Resources (OER) movement. However, only in the past few months, it seems to me, has the idea of a MOOC managed to gain real traction beyond the specialised groups of open educational resource enthusiasts.

Many readers will recall the international impact created in 2001, when the MIT OpenCourseWare project announced that it would make the whole of the MIT course catalogue openly available, via the internet. This persuaded other institutions, my own included, to establish analogous projects and prompted a number of bodies to fund efforts specifically aimed at gathering and disseminating open educational resources. Many of these projects involved making whatever changes were necessary to ensure that educational resources originally created for a specific use in a particular setting were ‘repurposed’ so that they became truly reusable learning objects (RLOs). The movement gained additional momentum from the recognition given to learning objects by UNESCO, and the leading role that organization played in the field at that time.

Of course, all this effort was not specifically aimed at physics. The starting point for much of it was in computer science and informatics. However, mathematics, physics and engineering were all early beneficiaries of the movement, partly because each was fortunate to possess a rich inventory of computer-based courseware, though few institutions had anything approaching full courses that could be placed online even if there was a willingness to do so.

MOOCs provided a rather natural extension to the Open Educational Resources movement. Typically, a MOOC is a relatively short course, ten or twelve weeks is common, offered entirely on-line, free of charge and not leading to any formal qualification apart from a course completion certificate. (Already, though, variations are appearing as some providers make a formal examination available at a charge.) The course is ‘massive’ in the sense that the number of students starting the course can be very large, measured in thousands or even tens of thousands. The retention rates, however, are not high (10% is frequently quoted) but since there is generally no fee or formal entry requirement, there is no barrier to entry, and no penalty for withdrawal. Consequently starting a MOOC can be seen as comparable with attending an open day or making an enquiry at a conventional university, rather than actually enrolling as a student.

There can be little doubt that much of the current excitement surrounding MOOCs is a consequence of hype. Traditional university education is still alive and well. MOOCs may well have a serious impact on independent learners who already have a university qualification but they will probably not greatly influence the learning journey of school leavers who still want the authority of a known and trusted institution to back the qualifications they offer to prospective employers.

Nonetheless, it’s hard to avoid the feeling that something is different this time. In the US, private companies, such as Udacity and Coursera, both of which have roots that can be traced back to the Stanford University Computer Science Department, and the edX educational platform created by MIT and Harvard, are becoming well known. They are attracting elite partners and are offering courses of recognized merit with strong student appeal. My own university, which has been involved in ‘traditional’ distance education for more than 40 years, is leading a UK MOOC alliance, Futurelearn, that is currently building contacts and acquiring partners; the British Library and the British Council being amongst the most recent to join. Recent history is already littered with the corpses of projects that attempted to use technology to bring about a ‘revolution’ in university education. MOOCs may not be any more successful in achieving this. However, it may well be that the substantial investment of time and effort currently going into MOOCs will, at the very least, have a long term influence on the balance between computer mediated and face-to-face education. If so, the input from experienced educators and insightful educational researchers will be important in all fields, not least physics.

As a final item in this Chair’s Corner, I must, with a sad heart, record the death of a distinguished past Chair of ICPE, Gunnar Tibell, Professor Emeritus at the University of Uppsala in Sweden. Many will recall Gunnar as a kind and generous colleague. A man of wide culture and great learning, with a particularly strong love of music as well as physics. His contribution to global physics education was marked by the award of the 2009 ICPE Medal. I am sure many readers will recall his typically warm and witty acceptance speech, given at the ICPE Conference in Mexico City, where he concentrated on his long and happy association with the International Young Physicist’s Tournament. Gunnar will be missed by all who knew him, young and old. He leaves a hole in the world of educational physics that it will be hard to fill.

Robert Lambourne
ICPE Chair
The cell phone manufacturer Nokia recently announced a low-end smartphone for under $100 without a contract while Chinese manufacturers are poised to capture emerging markets in China, India and Africa by offering even lower cost smartphones. Soon all new phones will be smart. Even these low-end smartphones possess computing power comparable to personal computers and are superior to ordinary phones in their remarkable variety of built-in sensors and communications capability. The potential impact on science education could be huge. Science is built on the gathering and analyzing empirical data and the mobility, built-in sensors, and computing power of smartphones provides the key ingredients for creating a powerful data collection tool. In this article we offer a few examples and suggestions for smartphones as real time, data collection and analysis instruments in science education.

Figure 1. Current smartphones have accelerometers to correctly orient the screen display. Figure 1 details data collected while taking off in an airplane using a free app [software application] that we wrote to read the internal accelerometer, and display or send the data in spreadsheet form to an email address.

While taxiing down the runway the acceleration is close to the expected 9.8 m/s². On takeoff the acceleration rises to 1.3g for about 125 seconds before beginning to taper off back to 9.8 m/s².

While collecting data on an airplane illustrates the mobility of the smartphone, a student laboratory acceleration exercise need not be as dramatic. Common lab experiments such as circular acceleration are possible by tying the phone to a string and swinging it in a circle or securing it to a bicycle wheel as well as the measurement of linear accelerations from bicycles and elevators. Acceleration due to gravity can be determined by just dropping the phone.

Figure 2. Significantly, smartphones have the computing capacity to perform complex data analyses such as the Fast Fourier Transform (FFT) of sound arriving at the phone's microphone. We originally wrote such an FFT app for a Nokia phone in 2008. Figure 2 shows a screen shot from a more up-to-date iPhone app of the FFT of a triangle wave of 750 Hz.

Plugging an oscilloscope probe, offered by the German company HMB-TEC, into the headphone and downloading software available from several sources, turns an iPhone or iPod into an oscilloscope. Cellphone oscilloscopes are more limited than laboratory models but are also mobile and far cheaper.

The American Physical Society has recently made a spectrometer app available for the iPhone. After building a spectrometer using a grating from a pair of cardboard toy glasses costing less than a dollar and black construction paper students can use the app to capture and analyze spectrums from various light sources and compare them to known sources. Figure 3 shows a screen shot of the spectrum of a compact fluorescent lamp.

Figure 3. The top spectrum was collected by the app from a real lamp, the lower spectrum is included in the app for comparison purposes.
Data collection is not limited only to the phone’s internal sensors. Most offer USB and Bluetooth connections to local external devices. All have a headphone port for connecting an external microphone and speakers, providing a connection to external equipment in much the same way as the game port on the early Apple II computer was first used in school labs to take data from external experiments.

![Image of a smartphone with a thermometer circuit](Figure 4. Measuring temperature using an external circuit and an iPod.)

Using our free temperature app\(^{10}\) and the external circuit shown Figure 4 a student can measure temperature changes, plot or email the results to a computer to be further analyzed. The headphone volume control serves to calibrate for individual circuit differences. Details are given in Reference 11. Advantages the phone thermometer shares with other potential phone data collection scenarios are mobility and the ability to collect data changing over an extended period of hours or days.

The same thermistor circuit and app can also be used with other measurement sensors that have similar resistance change characteristics. Ambient light levels can be measured by replacing the thermistor with a light activated photo resistor. Some water vapor sensors act as variable resistors that are sensitive to humidity. Strain gauges used in force probes and elsewhere, change resistance when subjected to stress. Basically, the circuit, headphone port and app turn a phone into a measurement tool that can be used for a wide range of experiments with a variety of sensors\(^{12}\).

Although most of the above examples are for an iPhone, iPad or iPod the concepts are applicable to nearly all smartphones, including Android based phones. Data collection with mobile devices, both from internal sensors and external circuits offer remarkable opportunities for creative new science experiments. Although not every student in every classroom can afford a smartphone at present, all phones will likely be smartphones in the near future. Even now, while prices are dropping, a few students, their teacher or parent could share one to provide new and unique laboratory experiences. Using a smartphone as an instrument for data collection will bring empirical science to a higher level for many students both in a laboratory setting and outside the classroom.

---

5. SignalScope by Farber Acoustical; (http://www.faberacoustical.com/products/iphone/signalscope_pro/).
6. HMB-TEC; http://hmb-tec.de/iPhoneApps/iPhone_Apps.html
12. A list of sensors and how they function can be found at: http://www.sensorland.com/
The Olimpíada Argentina de Física (Argentine Physics Olympiad) (OAF) is an outreach activity of the Faculty of Mathematics, Astronomy and Physics (FaMAF) of the National University of Córdoba. This activity promotes the participation of teachers and students from secondary school in a formal scientific activity, although it has competitive aspects, it is not pursued as an end competition.

It is understood that the OAF is an extracurricular task in the sense that is proposed from outside the school, but the activities carried out in order to participate in the Olympiads should serve as incomes in the physics classroom activities. At all times, those responsible for the OAF argue that teachers and students are the real drivers of the Olympics, without their participation, the OAF have no reason to be.

Hence, a main feature of the Physics Olympiad is its decentralization in different regions of the country. Each region is involved in the organization independently and without competition among them, i.e. each within its capabilities and its own level. It starts from each school individually (administrators, teachers, students), and then sharing experiences with other schools in competitions most comprehensive, up to the national instance. Each instance of participation is a closed event in itself, with its own achievements. Another very important feature of the Olympiad is the very nature of physics. Physics is theory and experiment, making essential that testing involves both a pen and paper, and an experimental part in which the measurement process is central.

Since 1994, The Olympiad has the strong support decided of the National Ministry of Education, whose economic contribution enables participation in international events and continuity of the Argentine Olympiad throughout the year. The Olympiad also has the support of the Argentine Physics Association. By Resolution No. 612/98 of the Honourable Supreme Council of the National University of Cordoba, The Argentina Physics Olympiad Programme is part of the outreach activities of the University.

To carry out the activities of the Physics Olympiad Argentina, the COE is supported by the Academic Council of OAF. Among other activities, the members of the Academic Council are responsible, along with the COE, for the proper development of the OAF Activities of the COE are: training of the Argentine Olympic Teams, participation as Leaders of the Olympic Team in the international events, to prepare the theoretical and experimental problems for the National Instance, and organizing Seminars-Workshops for teachers of the secondary school.

Instances

The Olympiad includes three levels of participation:

a) Local Instance
The local instance is the most important of Argentine Physics Olympiad, as it requires the active participation of secondary school Physics teachers. Participation in this instance aims to develop two types of testing: preparatory and local. Participation in a local test, as in the preparatory test is mandatory for those who wish to participate in the National Instance. This instance begins with the participation of all the students in the same Physics course, led by the subject teacher. Next comes a selection and a further integration with other teachers in the same school or schools nearby. The work done is a measure of the enthusiasm, effort and dedication of the teachers involved.

On the preparatory tests: Preparatory test are previous to Local test (which is the top level in this instance). The Tests are organized by a local Committee whose members are selected by the Physics Teachers. The COE makes and sends to all schools in the country preparatory tests with solutions and scores for teacher use. The topics and dates thereof are informed at the beginning of each year, to enable the organization of teaching work and preparation of students. The preparatory tests also allow students to make contact and become familiar with the specific mode of presentation of the National Olympic trials.
On Local Test: The organization itself is in charge of one or more secondary schools in a locality or nearby localities, through the Local Organizing Committee. The Committee may appoint a Commission of problems, who choose the theoretical and experimental problems, and is in charge of the correction of the tests. The local test is open to all secondary school students who are under 19 years old on June 30 of the year of completion of the Olympiad. After the Test, the Local Organizing Committee sends to the COE a copy of the statements along with the list of participants and corresponding scores. With this information the COE makes a selection of the students to be invited to participate in the National Instance.

b) National Instance
This is the instance of integration and of the local Olympiads. It brings together students from all around the country. It is one week of competition that also have the goal of integration and sharing of experiences. On the national stage (which takes place in Córdoba and whose organization is in charge of COE), there is one single test for all participants. Like Local Test, the National Test is divided into two parts: Theoretical and Experimental. Participating students attend the national instance accompanied by a Teacher who was involved in the previous Local Test. This teacher, who is the one who plays the role of leader of the delegation of the Local Olympiad to which students belong, is responsible for them against the Executive Organizing Committee, is part of the jury of the national body and is also involved in the academic and training activities carried out during the development of each national instance. Students attending this instance also participate in various conferences and workshops (not only in physics). That activities attempts to raise concerns about the scientific research, through the dissemination of scientific topics as an inducement to the knowledge of the objectives and methodology of the scientific activity and generate actions that facilitate the understanding of the conditions that accompany the process of scientific inquiry and technological development.

c) International Instance
Among the best qualified students in the Order of Merit of the National Instance, the COE selects the students that will be part of the National Olympic Teams representing Argentina in the international events (International Physics Olympiad and Olimpiada Iberoamericana de Física). These activities are international competitions for secondary school students, where each participating country is invited by the Minister of Education of the host country. Students must prepare very hard to compete in these events, since they are considered of great importance to the international prestige in education. It is also an excellent opportunity for cultural exchange and educational experiences for the advancement of the discipline of physics in our case.

Teaching support
Another major activity of the Argentine Physics Olympiad is teacher training. This project focuses primarily on a permanent updating of teachers participating in the program, by encouraging them to be active and critical of their role as educators. The OAF emphasizes the participation of secondary school teachers in the local instance. Therefore, it is imperative a comprehensive preparation in the discipline, which not only helps them to perform better their job in the Olympiads, but it gives also them the opportunity of relationship with other teachers, and to take courses in Physics at no cost. So, periodically, Workshop Seminars are taught that attempt to contribute to teaching improvement in order of the advancement of the discipline through its teaching, widening teachers participation and meet minimum needs for literature and laboratory equipment, of schools participating in the activity.

For more information:
Olimpíada Argentina de Física
Facultad de Matemática, Astronomía y Física
Universidad Nacional de Córdoba
Medina Allende s/n
Ciudad Universitaria
5000 Córdoba
Argentina

Telefax: +54 351 - 5353701 (ext. 41361)
Email: oaf@famaf.unc.edu.ar
Website: www.famaf.unc.edu.ar/oaf
The postgraduate programs in Physics Education in Argentina are most often embedded in Ph.D and Master of Science programs in Science Education. These programs are offered in some of national, state-run, public universities, distributed in different provinces across the country. Master of Science programs are usually associated with Education or Science Education Departments, while just a few are run within Physics Departments.

The academic requirements of these science education programs emphasize general educational contents, with a syllabus organized to cover the common requirements of participants, with a few courses and the thesis addressed to a particular scientific discipline problems, i.e., educational problems in physics, chemistry, biology or natural sciences. The same situation is observed regarding Ph. D. programs, which are just a few and again in the general field of Science Education, but with thesis work centred on particular problems of physics education.

One of the national universities offers a master degree program in the teaching of physics. This program might be described as a professional development master program in the teaching of physics. It is targeted for in-service physics teacher working mostly at the tertiary level of the local educational system, but also for university professors.

The program was offered after national surveys that showed that traditional physics instruction is offered almost everywhere across the country, in public and private institutions of the tertiary and secondary educational levels. Much to the contrary, strategies for the active learning are practised at just very few schools. This is, of course, closely correlated with the traditional instruction offered in almost all the university physics courses taken by prospective physics teachers and physics graduates that will later teach at the university level.

Following the latest trends in professional development courses for in and pre-service physics teachers, this postgraduate program has been designed to cover, in an integrated manner, the relevant pedagogical, disciplinary and pedagogical content knowledge that are basic for a modern and efficient physics teaching. Toward that aim, syllabus of the master program in the teaching of physics has been structured in three types of courses: disciplinary courses on mechanics, E&M, Modern Physics (basics quantum physics and relativity), thermodynamics and statistical mechanics. This disciplinary courses are offered, within possible, by physics professors with some knowledge of physics education. Pedagogical content knowledge includes courses on pedagogy of science, psychology of learning, epistemology and history of physics, as well as methodology of educational research. The pedagogical content knowledge is offered through short courses dealing with one particular strategy for teaching physics, such us Tutorials for Introductory Physics (Washington’’ Tutorials), Peers Instruction and so on. Finally there is thesis work that usually is addressed to study classroom implementation of active learning teaching strategies, but it could also consist on other type of research, but closely connected with the teaching of physics.

This program has been well received by physics teachers and professors working in neighbouring provinces and received request for on line implementation, but this possibility has not been possible so far, mainly due to the lack of sufficient professors.
Interamerican Conference on Physics Education

Guayaquil, July 2013

Inter American Conferences on Physics Education (IACPE) 2013, during the first week of July, will be held with participation of researchers and teachers from around the Continent. At all levels of education, problems, solutions, and success stories, as they pertain to physics education, will be shared and discussed among stakeholders, such as policy makers, teachers, university instructors, and researchers.

At the core of the conference lies meeting and interacting with colleagues and new ideas to improve teaching and learning. We wish to have a deeper understanding of learners and learning, teachers and teaching, physics as a branch of science and physical knowledge, and teaching environments with the overall goal being to reach and attain the state of the art knowledge and skills necessary to be able to teach physics successfully in our classrooms.

Please, visit www.iacpe.org

International Conference on Physics Education

Prague, August 2013

In a few months we will meet in Prague at the ICPE-EPEC 2013 conference. This Newsletter No. 2 will provide information on some news concerning the conference and also remind you of important dates and deadlines. We would like to thank all of you who have already submitted their abstracts to the conference. So far more than 170 abstracts were submitted. Also, we would like to thank all the people who kindly agreed to review the abstracts and devoted their time and energy to this task. Their help not only makes it possible to decide about the acceptance of abstracts but also provides useful feedback to their authors.

Of course, the abstract submission continues - it is open till the end of April. See Abstract submission page at the conference website for details. We are still awaiting further interesting contributions!
You can find some information concerning registration below.

**Preliminary program**

**Sunday, 4th August**
17:00 - 20:00 Registration

**Monday, 5th August**
since 08:30 Registration
09:00 - 09:30 Opening ceremony
09:30 - 12:00 Keynote lectures
12:00 - 12:30 EPS Ceremony
12:30 - 14:00 Lunch
14:00 - 18:00 Parallel sessions

**Tuesday, 6th August - Thursday, 8th August**
08:30 - 11:00 Keynote lectures
11:00 - 12:00 Poster sessions
12:00 - 13:30 Lunch
13:30 - 18:00 Parallel sessions
(Sightseeing tours on Wednesday)

**Friday, 9th August**
08:30 - 11:30 Parallel sessions
11:30 - 12:00 Closing ceremony
12:00 - 13:30 Lunch

Conference dinner will take place on Thursday evening. In case not all workshops would fit into the periods of parallel sessions we plan to use also some evening and/or “early night” hours for them.

**Registration**

Please, register for the conference using the registration webpage. Note that you can see the prices of the fee, accommodation etc. not only in CZK (the currency used in the Czech Republic), but also in Euros or US dollars. Just use the EUR/USD/CZK “switch” at the webpage. To answer some questions concerning accommodation: No independent booking of accommodation is necessary - hotel booking is included at the registration webpage. You can choose from several options at various price levels. For any information concerning registration, please, ask us at info@icpe2013.org.

**Important dates**

**Abstract submission**

**Registration**
Normal: 1.04.2013 - 15.06.2013
Last minute: after 15.06.2013

**Other issues**

Please, check whether visas are needed in your case for coming to Czech Republic. If you need any further information or assistance, contact us at info@icpe2013.org. A limited number of grants are prepared to cover registration fees (thanks to IUPAP subsidy) for participants coming from recognized low income or lower middle income countries. Those wishing to request such support should submit a written application to sci@icpe2013.org. The grant applications will be evaluated by organizing committee for limited period of time only (deadline is 30th April 2013). There is no legal claim to the grant. We received several questions concerning the proceedings. To clarify this point: There will be a *Book of abstracts* (in an electronic form) available at the start of the conference. The full papers will be collected after the conference. The *Proceedings* (also in an electronic form) are planned to be published in Spring 2014. The Proceedings will have ISBN and it will be a reviewed publication. It will contain all papers passing through the review process. Moreover, selected papers will be published in a special issue of the journal *Scientia in Educatione*. 
In recognition of their excellent and sustained efforts to communicate physics through innovative hands-on experiments, the International Commission on Physics Education takes pleasure in awarding the ICPE Medal for 2011 to the LADY CATS.

The LADY CATS (LADY Creators of Activities for Teaching Science) is an organization of mainly, though not exclusively, female teachers from all levels of the educational system in Japan - from primary school to university. They are dedicated to the production and presentation of simple and inexpensive, yet beautiful, science experiments that demonstrate physics principles. Through their activities and passion they have engaged and excited students and teachers who have not been previously interested in physics. The LADY CATS aim especially to meet the challenge of countering the discomfort felt by many primary teachers when called on to teach physics. In Japan, many of these teachers are women who only have a background in general science. These teachers often feel unprepared for teaching physics-based topics. By their nature, the LADY CATS are particularly well suited to the task of inspiring and encouraging these primary teachers with an appreciation of physics.

The LADY CATS were founded in 2005. Since then, they have become widely known through their publications and their many appearances at international meetings, including several ICPE conferences. However, their work builds on that of an earlier Japanese teacher group known as the STRAY CATS. Together, these two groups have been sharing their unique approach to hands-on and minds-on physics education throughout the world for well over twenty years. Today, in honouring the LADY CATS, we honour also the tradition that gave rise to them. For this reason we invite Professor Hiroshi Kawakatsu who has been active in both groups to accept the 2011 ICPE Medal on behalf of the LADY CATS.
Edward Frederick Redish, known throughout the Educational Physics community as Joe Redish, is Professor of Physics at the University of Maryland. He is awarded the ICPE Medal for 2012 in recognition of his profound and wide-ranging contributions to Physics Education Research, that have powerfully influenced the development of the field in the USA and many other countries throughout the world.

Joe Redish graduated from Princeton University in 1963 with a Magna Cum Laude degree in Physics. He then went on to earn a PhD in theoretical nuclear physics from the Massachusetts Institute of Technology in 1968. Dr. Redish immediately became a member of the faculty at the University of Maryland, becoming a full Professor in 1979 and Chairing the Department of Physics and Astronomy from 1982 to 1985. He first became actively involved in the field of physics education research in 1982 and subsequently he has made physics education the primary focus of his research.

Although Professor Redish’s research is multi-faceted, he has concentrated on the use of computers in education. He was founder and co-principal investigator of the Maryland University Project in Physics Education and Technology (M.U.P.P.E.T.) and the Comprehensive Unified Physics Learning Environment (CUPLE). With various co-authors has contributed to the publication of innovative curricular materials through works such as Understanding Physics and the University of Maryland Tutorials in Physics Sensemaking. In 2003 he inspired many colleagues to use physics education research based teaching methods through his book Teaching Physics with the Physics Suite. His current interests include cognitive linguistics in Physics Education Research, the integration of mathematics and physics in advanced classes, and catalyzing related reforms in biology education.

Professor Redish has received many prestigious awards, including the 1998 Robert A. Millikan Award of the American Association of Physics Teachers, and a National Science Foundation Director's Award as a Distinguished Teaching Scholar in 2005. Today the International Commission on Physics Education takes great pleasure in further recognizing his work, and his many achievements, by awarding him the 2012 ICPE Medal for outstanding contributions to international physics education.
Editor’s letter

Dear colleagues,

This is the first edition that has been published under my responsibility. I want to sincerely thank the members of the Commission 14, for the trust they have placed in me. Likewise, I thank the friends who have contributed to put this edition online and soon in your hands. Particularly to my friend Alberto Gattoni.

I think it would be important to discuss a few editorial lines that will make this newsletter a vehicle for agile and interesting information. The discussion might include more efficient methods of distribution. Do not hesitate to contact me any moment.

I remain available to hear suggestions and opinions.

With best wishes,

Zulma Gangoso
zgangoso@gmail.com

Call for contributions

We need to improve communication with our colleagues and this newsletter can help. We call upon the Members of the C14, to encourage their colleagues to produce short stories of innovative experiences, training programs or other news to show the commitment of the Physics Education with society.

ICPE – IUPAP

International Commission on Physics Education
International Union of Pure & Applied Physics

Editor Zulma Gangoso
Facultad de Matemática, Astronomía y Física
Universidad Nacional de Córdoba
ARGENTINA
email zulma@famaf.unc.edu.ar / zgangoso@gmail.com

Publisher Premat Industria Gráfica, srl
Córdoba
ARGENTINA

Designer Lucas Gattoni
email lucasgattoni@outlook.com

Visit our website at
http://web.phys.ksu.edu/icpe/