

PRIZES

French physics society recognizes Blondel with 2004 research award

The Société Française de Physique has awarded the 2004 Jean Richard prize to Alain Blondel of the University of Geneva and the Ecole Polytechnique. The prize is given annually to a French researcher for his or her exceptional and original work in the field of theoretical or experimental physical sciences.

Blondel was a major driving force behind the phenomenal success of electroweak precision measurements at the Large Electron-Positron Collider (LEP), not least by pioneering the resonant depolarization technique of accurately measuring the beam energy. These measurements have probed the Standard Model to unprecedented precision. Blondel is now working on neutrino physics, thus continuing his contribution to electroweak physics.



Alain Blondel, left, with the polarization team at the Large Electron-Positron Collider in 1993.

INDUSTRY

German companies on display at CERN

For the first two days of March, CERN's main building was transformed into a showcase for German industry. Twenty-nine companies from sectors related to particle physics attended the ninth Germany at CERN exhibition, organized by the German Federal Ministry of Education and Research (BMBF). The exhibition enabled the companies to meet scientists, engineers and other potential purchasers.



Left to right: Hermann Schunck, director of the BMBF, and Robert Aymar, CERN's director-general, speak with a representative of a German company.

APPOINTMENTS

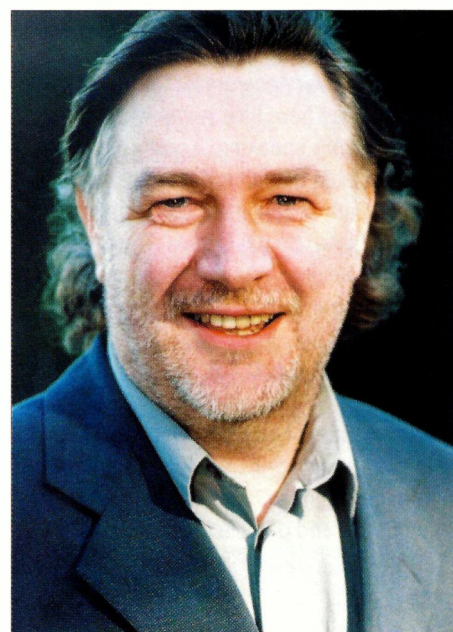
PPARC welcomes new chief executive

Keith Mason, a leading space scientist, has been appointed as the new chief executive and deputy chair of the UK's Particle Physics and Astronomy Research Council (PPARC). Mason will take up the post on 1 August for a period of four years, succeeding Ian Halliday who retired as chief executive on 31 March.

Mason is now the head of University College London's Department of Space and Climate Physics and director at the Mullard Space Science Laboratory. He is also the UK's lead investigator for the Ultra-Violet/Optical Telescope on the NASA Swift space mission, which was launched last November to study the explosive phenomena of gamma-ray bursts.

"It is an honour to have the opportunity to build on the legacy left by Ian Halliday," Mason commented following the announcement. "This is a time of great opportunity for the UK in astronomy, particle physics and space science."

Richard Wade, deputy chief executive and director of programmes at PPARC, will take



Keith Mason, appointed head of PPARC.

over as interim chief executive and accounting officer for the period from 1 April to 31 July.

YEAR OF PHYSICS

Online diaries demystify physics

Quantum Diaries is a website that follows physicists from around the world as they experience the World Year of Physics 2005. In their own words, in photos, blogs and videos, they tell the real-life stories of real physicists in real time.

The project, set up by the InterAction Collaboration of communicators from particle physics laboratories around the world, is not just about physics; it aims to show what it is to be a physicist. That means that the diarists write about their families, hobbies and interests, as well as their latest research findings and the challenges that face them in their labs.

The diarists, mainly nominated by their home laboratories, represent a cross-section of working physicists, from graduate students to senior researchers. They speak nine languages and represent 15 countries. Outside the lab they are jazz musicians, parents, amateur astronomers, photographers and athletes.

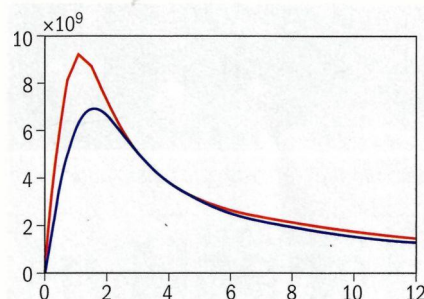
● See <http://interactions.org/quantumdiaries>.

Extracts from Quantum Diaries

Caolionn O'Connell, graduate student in advanced accelerator technologies, at the Stanford Linear Accelerator Center (SLAC): "31 January: I have hit a bump in the road, metaphorically speaking. A really big bump, such that even though my car might have lost a wheel, I am hoping it will still drive me to the thesis defense. So it is simple. The blue and the red curve should be the same. As much as you might squint, look at the graph askew or



Caolionn O'Connell is writing a diary about working as a researcher at SLAC.



O'Connell expresses "concern when your simulations do not obey the laws of physics".

jump up and down, there is no way those two curves are going to match. The red curve is the simulation and the blue curve is physics. It becomes a moment of concern when your simulations do not obey the laws of physics. Consequently, the many, many hours I have spent baby-sitting computers have been for nothing, nada, zilch. That's right, worthless."



Theorist John Ellis, right, receives the Dirac Medal wearing a "borrowed dinner jacket".

John Ellis, theorist at CERN:

"20 January: Off to London today with my family to receive the Dirac Medal, which was awarded to me by the Institute of Physics at a swish ceremonial dinner at the Savoy Hotel in London. The photo shows me in a borrowed dinner jacket and 20 Swiss Franc dress shoes.

"Back in 1983, the Institute of Physics awarded me their Maxwell medal, and I almost missed the presentation. However, I was saved by the Falklands war, which was raging at the time. I arrived late for the ceremony, getting there just as the German ambassador was presenting the Born medal. He apologized for having to jump ahead of the Maxwell medal, the reason being that he had to hurry back to his embassy for some urgent war-related message. By the time he had finished, I had finally reached my place and was available to receive my medal."

NEW PRODUCTS

Electron Tubes has a new website for scientists and engineers working in imaging and non-imaging optics, scintillation counting, and nuclear and particle physics. New features include an interactive search facility for selecting photomultipliers. See www.electrontubes.com.

ACT/Techno has announced a new development system based on the VITA 31.1 Ethernet fabric implementation. The VITA

31.1 standard defines the pin assignments and connector to implement a standard switched Ethernet fabric on a VME64x backplane, without use of cables. For further information see www.acttechnico.com, e-mail sales@acttechnico.com or call +1 215 957 9102.

Leica Microsystems has introduced a new mask metrology tool, the LMS IPRO3. The new device is designed to support mask metrology for 65 nm and provides measurement precision with a short-term repeatability of

better than 1.5 nm (3σ). For further information tel +49 6441/29 2229 or see www.semiconation.com.

PI (Physik Instrumente) has announced the new P-540 series nanofocusing Z-stages, designed for easy integration into high-resolution microscopes and other probing instruments. They provide fast motion to 100 μm in the z direction with subnanometre resolution. For more details call +1 508 832 3456, e-mail stefanv@pi-usa.us or see www.pi.ws.

SCHOOLS

ICTP summer school reviews latest findings in astroparticle physics

The seventh School on Non-Accelerator Astroparticle Physics was held at the Trieste Abdus Salam International Centre for Theoretical Physics (ICTP) from 26 July to 6 August 2004. The school, which is sponsored by the ICTP and the Istituto Nazionale di Fisica Nucleare (INFN), is held every three years. Non-accelerator astroparticle physics is a rapidly growing field that is often modified significantly by exciting new results, so the general picture presented at each of the schools has been considerably different.

Last year marked the 40th anniversary of the foundation of the ICTP (*CERN Courier* November 2004 p30). During that period the centre has grown in size and complexity. For example, it now has several buildings, a large library, guest houses and well equipped computer rooms. Located about 10 km from the centre of Trieste, it is close to Miramare Castle and Grignano Bay. Besides theoretical research carried out at the centre by staff and visitors, summer schools and workshops are held every year and these represent one of the centre's main activities.

Around 100 participants, including 80 students and 16 lecturers, attended the seventh astroparticle physics school. The participants came from 38 nations, mainly from developing countries although a significant number also came from western countries. The lectures were given by well known theoretical and experimental physicists involved in intensive research in the fields covered by the school. Four sessions were devoted to discussion and participants proved to be very motivated, so the atmosphere was lively. Three poster sessions



About 100 people from 38 nations participated in the seventh astroparticle physics school.



The main building of the ICTP in Trieste.

were organized and students presented 32 posters, which gave a broad view of activities in the field in general and in developing countries in particular.

After a few introductory lectures on basic particle physics, the school covered the status of the field and the future perspectives of astroparticle physics in detail, from both the experimental and theoretical points of view.

A first set of lectures introduced the fundamentals of particle physics with a review of the Standard Model and beyond. A comprehensive section on neutrino physics and astrophysics covered neutrino masses and oscillations, short- and long-baseline neutrino experiments, atmospheric and solar neutrinos, and neutrino telescopes.

Theoretical aspects as well as current and potential dark-matter searches were

extensively discussed. Several lectures dealt with searches for axions, magnetic monopoles and nuclearites. Cosmic rays and astrophysics were covered, with reviews on experiments in space, extreme-energy cosmic rays and photons and antimatter in space. The theory of gravitational waves was introduced, and current and future searches for gravitational waves were reviewed.

A session was devoted to the legacy of the Large Electron-Positron Collider (LEP) at CERN and future accelerators and superbeams. Large-scale facilities, detectors and data acquisition, and large-scale computing were a significant part of the programme. Other sessions concerned the world of science, with reviews on 100 years of science, science and society, and the universe.

Further reading

Copies of the lecture transparencies are available on the ICTP website http://cdsagenda5.ictp.trieste.it/full_display.php?ida=a0355 and at www.bo.infn.it/~giacomelli/ictp/ (see under School Agenda and Documents). The proceedings, edited by R A Carrigan Jr, G Giacomelli and N Paver, are to be published by World Scientific, Singapore.

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CELEBRATION

Symposium honours Lee Teng's career in accelerator physics

A symposium and banquet, organized by the Argonne National Laboratory and Fermilab, was held on 24 February to celebrate the retirement of accelerator physicist Lee Teng. Since his first job with accelerators as a graduate student in 1949, where he developed a beam extraction system in the Chicago cyclotron for Enrico Fermi and others, Teng has been active on some of the most important problems in accelerator physics. The extraction system, worked out with James Tuck, was later used at Liverpool University and then at Chicago University, and was the basis for resonant extraction used almost everywhere.

Teng later became the principal designer of the Argonne Zero Gradient Synchrotron and then director of the Argonne Particle Accelerator Division. When the National Accelerator Laboratory (later the Fermi National Accelerator Laboratory, FNAL) was formed, he was there on "day one" in 1967



Lee Teng at the symposium held to honour his retirement. (Courtesy Mike Borland.)

and became head of accelerator theory. He was busy with a variety of activities at FNAL, such as the design of components and colliders including the Tevatron, and he also was able to find time to contribute to projects at CERN, Los Alamos National Laboratory, Lawrence Berkeley Laboratory, Brookhaven National Laboratory and TRIUMF in Canada.

Teng helped design the proton therapy facility at the Loma Linda University Medical Center, California, and the Taiwan Light Source, located at Taiwan's National Synchrotron Radiation Research Center, where he served as its first director. He returned to Argonne in 1989 to help design the 7 GeV light source, and later served as head of the Accelerator Physics group of the Advanced Photon Source.

At the symposium, Teng and others noted the many responsibilities he still has as a member of various boards and committees. It will be an active retirement.

MEETINGS

The **10th LNF Spring School in Nuclear, Subnuclear and Astroparticle Physics** will take place at the INFN National Laboratories in Frascati, Italy, on 16–20 May. The school is directed at graduate students, postgraduate and post-doctoral fellows, and young researchers from the EU Euridice Network. The 2005 school will be mainly devoted to theoretical and experimental developments in meson spectroscopy, kaon physics, neutrino physics and cosmology. It will also include a historical session, special seminars and short presentations by young researchers attending the school. For further information, see www.lnf.infn.it/conference/lnfss.

The **International School of Physics Enrico Fermi on CP Violation: From Quarks to Leptons** is to be held in Varenna, Italy, on 19–29 July. The school, organized by the Italian Physical Society, is aimed at advanced postgraduate

level and is based on lecture courses plus seminars. Topics will range from the theory and phenomenology of CP violation to perspectives for future experiments. The deadline for applications is 20 May. Further details are available at <http://varenna05.pi.infn.it/>.

The **12th Euro Summer School on Exotic Beams** will be held at Mainz, Germany, on 25 August – 2 September. Organized this year by GSI-Darmstadt, the school is intended for PhD students and young post-docs starting work in fields related to radioactive ion beams. The school consists of several lecture courses given by specialists in the field, starting from a basic level. The deadline for registration is 1 June. For further information and online registration see www-linux.gsi.de/~scheid/euroschool-05/home.htm. Enquiries can be sent by e-mail to euroschool@gsi.de.

MSM05, the 4th International Conference on Magnetic and Superconducting

Materials, is to be held at Ibn Zohr University, Agadir, Morocco, on 5–8 September. The aim is first to review information on the most recent scientific and technological advances in the fields of superconductivity and magnetism, and second to create the opportunity for scientists from all parts of the world to discuss and share their research findings and explore the possibilities of mutual co-operation. For further information see <http://msm05.esta.ac.ma>.

PHYSTAT05, a conference on Statistical Problems in Particle Physics, Astrophysics and Cosmology, will be held in Oxford, UK, on 12–15 September. This is the fifth in a series that started with the Confidence Limits Workshop at CERN in January 2000. As well as contributions from physicists, there will be invited talks by an ensemble of distinguished statisticians. Attendance is limited to 120 participants. Further information is available at www.physics.ox.ac.uk/phystat05, or by e-mail from I.lyons@physics.ox.ac.uk.