

Faces & Places

AWARDS

Nobel laureates receive the Science for Peace Erice Prize

Werner Arber, Yuan T Lee, Gerardus 't Hooft and Samuel Ting are the 2010 laureates of the Science for Peace Erice Prize.

This prize was instituted in 1988 by the Sicilian parliament at the request of the World Federation of Scientists (WFS) on the occasion of the 25th anniversary of the Ettore Majorana Foundation and Centre for Scientific Culture (EMFCSC). It is awarded to world leaders in science and scientific culture, and to those who have played an essential role in promoting and implementing the goals outlined in the Erice Statement: Science for Peace, written in 1982 by Paul Dirac, Pyotr Kapitza and Antonino Zichichi, the current president of the EMFCSC.

Werner Arber receives the prize for “his fundamental contributions to unravel the mechanisms which promote and limit the spontaneous variation of genetic information in micro-organisms; for his theory of molecular evolution which puts on a scientific basis the fact that nature cares actively for biological evolution, thus allowing us to understand and evaluate the risks of genetic engineering”. Arber received the 1978 Nobel Prize in Physiology or Medicine together with Daniel Nathans and Hamilton O Smith for the discovery of restriction enzymes and their application to problems of molecular genetics.



Sam Ting, left, one of four Nobel laureates who received the Science for Peace Erice Prize from Antonino Zichichi, right, at the end of January. (Image credit: WFS.)

Yuan T Lee is recognized for “his discoveries to determine the structure and chemical behaviour of highly reactive polyatomic radicals and unusual transient species; for his achievements in the basic chemical reactions and primary photo-dissociation processes; for his studies to modify chemical reactivity; for his contributions to the development of methods to detect, directly, the transient intermediates that are critical in combustion and atmospheric processes”. In 1986 he was awarded the Nobel Prize in Chemistry jointly with Dudley R Herschbach and John C Polanyi for their work on the dynamics of chemical elementary processes.

Better known in the particle-physics community are 't Hooft and Ting, who received the Nobel in physics in 1989 and 1976, respectively. 't Hooft's Nobel-prize work is reflected in his citation for the Erice prize, awarded for “his discovery of the negative sign of the β -function in the most critical period of crisis for relativistic quantum field theory, which he brought to new life with his fundamental contributions to understand the renormalization processes, thus paving the road to quantum gravity, supergravity, superstring theories, including the nature of black holes”. The citation for Ting similarly recognizes his early work that earned him the Nobel prize as well as his more recent contributions. He receives the Erice prize for “his discovery of the J-particle, the first ‘narrow’ state in subnuclear physics, which gave rise to the so-called ‘November revolution’, from where a great step forward came in the understanding of the logic of nature, whose most recent frontier is the search for antimatter in space”.

In the ceremony at the Vatican, each laureate was invited to present current projects, followed by discussions with members of the WFS. The ceremony continued with a visit to the Galileo Galilei exhibition inside the Renaissance church Santa Maria degli Angeli and ended with a midnight concert in the church.

Indian Nuclear Society honours Kakodkar

Anil Kakodkar, former chair of the Indian Atomic Energy Commission and secretary to the Department of Atomic Energy has been awarded the Indian Nuclear Society's Homi Bhabha Lifetime Achievement Award 2009. The award was presented at the 21st Annual Conference of the Indian Nuclear Society, held in Mumbai in January. The award is given in recognition of outstanding lifetime achievement in research, technology development, management, operation

and maintenance and, safety or education in fields related to nuclear sciences and technology. Kakodkar has strong links with CERN, for example leading the Indian delegation at its first time as an Observer at CERN Council in June 2003 (*CERN Courier* September 2003 p43).

Anil Kakodkar, left, receives the award from Yukiya Amano, director-general of the IAEA. (Image credit: INS.)



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Michel Davier. (Image credit: IN2P3.)

Michel Davier receives André Lagarrigue Prize

Michel Davier, physics professor at the University of Paris-Sud 11, has been awarded the 2010 André Lagarrigue Prize. A worldwide authority in particle physics, Davier is recognized for his deep understanding of physics and of experimental devices of great complexity as well as his passion and talent for teaching and for educational outreach.

The prize, instituted by the Linear Accelerator Laboratory (LAL) at Orsay, under the aegis of the French Physical Society, is awarded to front-line researchers who have had responsibility for machine and detector construction and derived maximum scientific benefit from such projects, performed in a French laboratory or in close collaboration with French groups.

Davier has played a leading role in particle physics, especially within the CELLO (DESY), ALEPH (CERN) and BaBar (SLAC) collaborations, and is a former leader of the French-Italian Virgo project for a laser interferometer to detect gravitational waves. He was director of LAL from 1985 to 1994 and – under his mandate – LAL built the LEP Injector Linac for CERN and the linear accelerator for the CLIO free-electron laser facility in Orsay.

Devoting himself to both theoretical and experimental studies of the strong interaction, Davier has become one of the world's leading experts in this field. His work on the muon magnetic moment suggests new physics that may soon be confirmed at the LHC, while his measurements of the τ , among others, have led to the most accurate measurement of the strong interaction coupling and contributed to indirect constraints on the mass of the Higgs

VISITS



Italian president, **Giorgio Napolitano**, far left, spent time in the ATLAS control room, as part of a visit to CERN on 4 March. Here he is sitting with CERN's director-general, **Rolf Heuer**, while ATLAS spokesperson, **Fabiola Gianotti**, and CERN's director for research and scientific computing, **Sergio Bertolucci**, look on from the right. The president also viewed CERN's permanent exhibition, the *Universe of Particles*, located in the Globe of Science and Innovation, and addressed the Italian community at CERN.

OUTREACH

ALICE physicist features in book about Mexico

The recently published book *Uno + Uno: 32 líderes sumando por México* (32 Leaders Stand Up for Mexico) contains reflections about the future of Mexico by 32 people born in the 1970s or early 1980s, from different walks of life. Representing science is Daniel Tapia Takaki of the ALICE collaboration, who presents his views on the role of public education in Mexico and how knowledge can be a focus for change in many areas, such as politics, culture, sport, science and technology.

The book was written by two journalists, Paula Odorica and Carlos Mota. Other contributors include the international football player Rafael Márquez, pop star Paulina Rubio, actress Kate del Castillo and photographer Pablo López Luz.



Daniel Tapia Takaki at his degree ceremony in Birmingham in 2008. (Image credit: Orlando Villalobos Baillie.)

boson. Davier also excels in explaining the mysteries of the subatomic world to a large audience, a talent that is revealed in numerous courses, books, radio programmes and public presentations

The prize is awarded every other year in

honour of Lagarrigue, who was director of LAL from 1969 until his untimely death in 1975. It is sponsored jointly by CNRS/IN2P3, CEA, CERN, the Ecole Polytechnique, LAL and Paris-Sud 11 University.

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Manuel Eduardo Baldeón, national secretary of higher education, science, technology and innovation for the Republic of Ecuador, right, came to CERN on 1 March. He is seen here in the LHC superconducting magnet test hall with **Frédéric Bordry**, head of the technology department at CERN. Baldeón also visited the CMS control centre and the CERN computing centre.

On 2 March, **Catharina Håkansson Boman**, Swedish state secretary to the minister for enterprise and energy, right, was welcomed to CERN by **Felicita Pauss**, head of international relations. The visit included a presentation about the LHC Computing Grid project and a tour of the LHC superconducting magnet test hall and the ATLAS visitor centre.



Maciej Banach, Polish under secretary of state, ministry of science and higher education, right, was at CERN on 8 March to open an exhibition to celebrate the 100th anniversary of the awarding of the Nobel Prize in Chemistry to Maria Skłodowska-Curie, together with CERN's director-general, **Rolf Heuer**. The visit also included the opportunity to meet Polish scientists working at CERN.

Australian senator, minister for innovation, industry, science and research, **Kim Carr**, second from right, visited CERN on 14 March. His tour included the ATLAS visitor centre, where he was accompanied by, from left to right, **Emmanuel Tsismelis**, adviser for Australia, **Fabiola Gianotti**, ATLAS spokesperson, and **Geoffrey Taylor**, team leader for the University of Melbourne in the ATLAS collaboration. The minister also met Australian scientists working at CERN.



NEW PRODUCTS

Aitech Defense Systems Inc has announced a 3U VPX product family that is based on the low-power Intel Core i7 processor that enables extremely high computing within very compact environments. The new family includes the C870 SBC with a Core i7 dual-core processor and incorporates an on-board Intel Gen 5.75 high-performance graphics controller. The C870 offers all-soldered memory to meet high-shock and vibration conditions. For more information, tel +1 888 248 3248, e-mail sales@rugged.com or see www.rugged.com.

Cobham Technical Services has introduced an addition to the Vector Fields Software product line, Opera. Opera is a complete design-simulate-analyze-optimize tool chain that is available in several variants with finite element analysis (FEA) solvers for static and time-varying electromagnetic fields, or with application-specific solvers for design work. The latest Version 14 of the software increases the range of FEA meshing to simplify numerical solutions. For more information, tel +44 1865 370 151, fax +44 1865 370 0277, e-mail vectorfields.info@cobham.com, or visit www.cobham.com/technicalservices.

Elma Electronic Systems has released a new ½ ATR conduction-convection cooled enclosure with an airflow design that distributes air across external fins in sidewalks. This new configuration helps to ensure fast removal of dissipated heat yet maintains a low profile design. It comes with a 6-slot 3U OpenVPX backplane and is also available with either a 3U cPCI backplane or a single-width MicroTCA backplane. For more information, contact Valerie Andrew, tel +1 510 656 3400, e-mail sales@elma.com, or visit www.elma.com.

Hidden Analytical has announced a new purpose-designed HPR-90 precision gas analyser for measurement of the static fill-gas and of the residual gases within diverse vessel types, ranging from multi-litre electric lamps and florescent tubes to electronic devices with volumes of 10 microlitres. Hidden has also introduced a range of quadrupole residual gas analysers for pressures ranging from millibar through to extreme high vacuum. The single-step mass filters are for general applications, with the 3F-series triple-stage mass filter being for the most demanding of applications. For more information, contact Jessica Neale, tel +44 1925 445 225, fax +44 1925 416 518, e-mail jneale@hidden.co.uk, or see www.hiddenanalytical.com.

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OBITUARY

Stewart Christian Loken 1943–2011

Stewart Loken, an accomplished experimental physicist and scientific computing leader, passed away on 19 February after an 18-year battle with cancer.

Stewart, or “Stu”, was born in Montreal on 16 February 1943. He received his BSc from McMaster in 1965 and earned a PhD in physics at Caltech in 1972 under Barry Barish. After a postdoctoral appointment at Cornell, Stu spent the next 37 years at Lawrence Berkeley National Laboratory (LBNL), where he became senior scientist in 1981. He became a US citizen in 1991.

As a postdoc in the first muon-scattering experiment at Fermilab (E-26), Stu built one of the earliest data-acquisition systems managed by a powerful byte-oriented minicomputer. He made major contributions to analysis of the experiment’s surprising result – the first observation of logarithmic violation of Bjorken scaling in deep-inelastic lepton-nucleon scattering. This was early evidence for the theory of QCD. Subsequently, during 1976–1979 he oversaw much of the construction of Fermilab’s E-203/391 multimMuon spectrometer and co-ordinated collection of the data, which extended the E-26 discovery. In 1980 Stu initiated and secured approval for an additional run (E-640) of the spectrometer in the new muon beam from Fermilab’s Tevatron.

Remarkably, while amassing these accomplishments at Fermilab, Stu found time to contribute centrally to LBNL’s time-projection chamber experiment (PEP-4) at SLAC. He designed the data-acquisition architecture for both the prototype and the main experiment, which introduced the large-scale use of CCDs as



Stu Loken. (Image credit: LBNL.)

analog delay lines, and he also supervised several PEP-4 students.

In 1984, after reports of anomalies in proton-antiproton collisions at CERN, Stu persuaded his E-640 collaborators to suspend preparation for their experiment in order to join the nascent DØ collaboration at the Tevatron proton-antiproton collider. There he represented a large group of LBNL participants, helped to build DØ’s first vertex chamber, and pushed strongly for coherent design of its software.

As director of LBNL’s Information and Computing Sciences Division (1988–2000),

Stu created the forerunners of today’s Computing Sciences, Creative Services, and Information Technology organizations there. He helped create the US Department of Energy’s high-speed network (ESnet) and attract the National Energy Research Scientific Computing Center (NERSC) to LBNL. There, Stu worked effectively to develop NERSC into a resource used by a vibrant, nationwide community. During this period he retained his enduring interest in particle-physics computing, strongly influencing choices of networking and software tools and methodologies in that field. He was elected a Fellow of the American Physical Society in 1990.

After returning to LBNL’s Physics Division as its deputy-director (2000–2010), Stu touched every aspect of its programme. He developed a special interest in ATLAS computing and in the Nearby Supernova Factory, where as project manager he played a key role in securing funding and organizing the data processing. With characteristic optimism, during the past year Stu took on new responsibilities in the LUX dark matter search planned for the Homestake mine. Committed to outreach, he was an enthusiastic leader in QuarkNet, which trains and supports physics teachers.

Stu’s passion extended equally to his personal life. He was a skier, sea kayaker, scuba diver and a lover of classical music, as well as lifelong recreational cyclist, twice circling Lake Tahoe as a leukaemia survivor. Stu is survived by Geanie, his close companion and wife of 40 years, daughter Kristen, son Scott, and two sisters. All those who have known him treasure his memory and admire his courage.

● Mark Strovink and Ronald Madaras, LBNL.

Megatech has introduced the Simplicity Solutions 830 VQM System, an ultra-fast mass spectrometer for measuring vacuum quality. The system combines high-performance gas-analysis technology with the ability to transform complex measurements into instantly usable information. Much smaller than existing residual-gas analysis instruments, it incorporates the state of the art in mass separation based on patented electrostatic ion-trap technology. For more information, contact Peter White, tel +44 1543 500044 or e-mail peter@megatechlimited.co.uk.

Southern Scientific has launched the SS300 and SS330 high quality, general-purpose gamma probes designed to be used with Radhound, a new digital radiation monitor. The SS300 has an uncompensated (900 V) pancake Geiger detector for beta and gamma contamination measurements, while the SS330 model has a compensated pancake Geiger counter for dose-rate measurement. Both the SS300 and SS330 models have dimensions of 254 mm × 70 mm × 64 mm, and weigh 280 g and 300 g respectively. For more information, see www.ssl.gb.com.

Trek Inc has announced a new high-frequency amplifier, Model 2100HF, which is designed to deliver high-frequency, high-speed, wide-bandwidth performance in a variety of applications. The Model 2100HF provides precise control of output voltages from 0 to +/–150 V DC or peak AC, with output currents of 0 to +/–300 mA, large-signal bandwidth capabilities to 2.6 MHz (–3 dB), and typical slew rates of 2000 V/μs. For more information, tel +1 585 798 3140, e-mail sales@trekinc.com, or visit the website at www.trekinc.com/pdf/2100HF_Sales.pdf.

CIVIDEC Instrumentation is a R&D company born from the cutting-edge technology of CERN. We specialize in beam instrumentation based on **CVD diamond technology**. Moreover, we produce the devices and carry out **beam tests** for individual applications.

CIVIDEC Instrumentation provides **beam monitors** and **ultra-fast, low-noise electronics**.

OUR BEAM MONITORS:

- **Beam Loss Monitors**
- **Particle Counter**
- **Phase Monitor**
- **Dosimeter**
- **Calorimeter**

OUR PRE-AMPLIFIERS:

- **Broadband Amplifier for transient current technique:**

Bandwidth: 2 GHz
Gain: 20 dB and 40 dB
Peaking time: 250 ps

- **Charge Amplifier for single-particle detection**

Bandwidth: 100 MHz
SNR for MIP particles: 15
Peaking time: 10 ns

APPLICATION EXAMPLE:

CERN LHC – Diamond Beam Loss Monitor

DBLM are installed complementary to the ionization chambers of the base machine | **radiation-hard pre-amplifier** | <1 ns time resolution | single MIP resolution | high dynamic range

