

FACES AND PLACES

APPOINTMENTS

TRIUMF's associate director moves on to new challenges

After more than 20 years Jean-Michel Poutissou has stepped down from his dual role of guiding TRIUMF as its associate and science director to take up new challenges within the laboratory. He has been a leading figure throughout the mandates of four directors and a period of significant changes. He has represented TRIUMF on the world scientific stage by serving on countless international committees, review panels etc, and with his even-handed judgement and good humour, his was a well respected and steady hand on the wheel at TRIUMF. His accomplishments were recognized in 2006 with the French Chevalier de la legion d'Honneur, the highest decoration in France. Poutissou received his first degree in



Poutissou moves on after 20 years of dedicated service at TRIUMF. (Courtesy TRIUMF.)

engineering physics from the Institut National des Sciences Appliquées in Lyon in 1965. This was followed by a PhD in nuclear physics from the Université de Montréal in 1972, with a post-doctoral position in the TRIUMF group immediately afterwards until 1974. He joined TRIUMF as a research scientist in 1978 and was science division head and associate director from 1988 until January 2009.

TRIUMF's new scientific vision involves greatly expanding its nuclear-medicine programme. Poutissou has been selected to lead the new division for the interim. He will return to research life with the Tokia-to-Kamioka long-baseline neutrino collaboration in Japan after his retirement this year.

Chilingarian takes over at Yerevan

Ashot Chilingarian has become the director of the Yerevan Physics Institute (YerPhI) as from the end of 2008. He is also head of the Cosmic Ray Division, one of five divisions at YerPhI. He takes over from Hrachia Asatryan.

Chilingarian, who will celebrate his 60th birthday on 18 May, earned his PhD in 1984 followed by a DSc in physics and mathematics from YerPhI in 1991. He has been at the institute since 1971, first as a scientist and then as a senior scientist. In 1993 he became the deputy-director of the institute as well as head of the Cosmic Ray Division. He has also been a lecturer in physics and software engineering at Yerevan State University (YSU) since 1975.

Chilingarian's expertise is in high-energy astroparticle physics, particle-detector instrumentation and advanced statistical computation, including Bayesian and neural network models. His current research interests include the origin of galactic and solar cosmic rays, the detection of secondary cosmic-ray fluxes on the Earth's surface, space weather and solar-terrestrial connections. He is the founder of the Aragats Space Environment Center on Mt Aragats, which is equipped with new, hybrid particle detectors that simultaneously measure charged and neutral fluxes in secondary cosmic rays. He is also the originator of the



Ashot Chilingarian takes the reins at Yerevan. (Courtesy Narine Khachatryan.)

concept of the worldwide network of particle detectors for research in space weather and solar physics, the Space Environment Viewing and Analysis Network (SEVAN). Nodes of the SEVAN network are now operating in Armenia, Bulgaria and Croatia.

AWARDS

Bogoliubov Prize seeks candidates

The Joint Institute for Nuclear Research (JINR) has opened applications for the 2009 NN Bogoliubov Prize for Young Scientists. The prize, established in 1999 in memory of the eminent physicist and mathematician Nikolai Nikolaevich Bogoliubov, is awarded to young researchers (up to 33 years) for "outstanding contributions in theoretical physics related to Bogoliubov's scientific interests – nonlinear mechanics, statistical physics, quantum field theory and elementary-particle theory".

The prize is awarded to a scientist who has shown early scientific maturity and whose results are recognized worldwide. Applicants should try to emulate Bogoliubov's skill in using sophisticated mathematics to attack specific physics problems.

To take part in the competition, send your CV and a one- to two-page abstract of submitted papers in electronic form to: VI Zhuravlev, the Directorate of the Bogoliubov Laboratory of Theoretical Physics of JINR (Joliot-Curie str. 6, 141980 Dubna, Moscow Region); or e-mail bltp@theor.jinr.ru, no later than 1 August 2009. The winners will be announced on 23 August 2009, during the conference dedicated to the 100th anniversary of Bogoliubov's birth.

INTERNATIONAL COLLABORATION

Egypt is new associate member of JINR

In early March, a delegation of the Arab Republic of Egypt headed by the president of the Egyptian Agency of Scientific Research and Technology (ASRT), Mohamed Tarek Hussein made a two-day visit to JINR. The Egyptian guests were received by the director of JINR Alexey Sissakian, the scientific leader Vladimir Kadyshevsky and vice-directors Mikhail Itkis and Richard Lednický. On 3 March Hussein and Sissakian signed an agreement admitting the Arab Republic of Egypt as an associate member of JINR.

During the visit, the Egyptian delegation learnt about the history of JINR and its scientific policy, fundamental research, innovation projects and educational programme, as well as about the institute's new opportunities in the Special Economic Zone. Hussein spoke about the structure of ASRT and its interactions with the scientific community. He described co-operation with European and Asian states and the



Alexey Sissakian (left) and Mohamed Tarek Hussein sign the agreement for Egypt to become an associate member of JINR. (Courtesy JINR.)

"four-P cycle" used in the academy's activities: from publication to patent, prototype and the final product. The Egyptian

delegation also toured JINR's laboratories and discussed plans for co-operation with the institute and with the laboratories' leaders.

DONATION

Hanoi library receives books left by Maurice Jacob

At the beginning of February the Vietnam Auger Training Laboratory (VATLY) at the Institute for Nuclear Science and Technology (INST) in Hanoi received an important delivery from CERN: the collection of *Physics Reports* that Lise Jacob, Maurice Jacob's widow, had kindly donated to the institute's library. The shipping was organized by Maurice's former colleague at CERN, André Martin, together with the help of Annick Lyraud, as well as members of the library and the transport group at CERN.

The books were received at the institute by Dang Quang Thieu, from the directorate of INST and Pierre Darriulat, a former senior physicist at CERN who was recently awarded the André Lagarrigue Prize (*CERN Courier* March 2009 p33). The collection arrived in excellent condition and, following their transfer to the library, a plaque on the wall will



Dang Quang Thieu (left) and Pierre Darriulat with Maurice Jacob's collection of *Physics Reports* in Hanoi. (Courtesy Pierre Darriulat.)

acknowledge the donation. In their new home the collection of books will be of great benefit to not only the physicists at the institute but also to those at other physics laboratories in Hanoi, who will be able to access them.

POET'S CORNER

Higgs boson

With apologies to Hilaire Belloc, *The Microbe*.

*Higgs boson is so very small
You cannot make him out at all,
But scientists aspire to see
His footprint in the LHC.
No jointed tongue to lie beneath
A hundred curious rows of teeth,
But many bubble trails make lots
Of puzzles for atomic swots,
Researchers, who with pints of Bass
Debate the real cause of mass
And cry "Oh boson, have you been?
For you have never yet been seen."
These scientists, who claim to know,
Assure us that it could be so...
Oh! Let us ever, ever doubt
What nobody is sure about.
— Tony Herbert, Hampshire*

● The author submitted this poem to the website of the *Material World* programme on BBC Radio 4 after coverage of CERN and the start-up of the LHC. (Courtesy Tony Herbert.)

VISITS

King Albert II of Belgium (centre) visited CERN on 19 February. He toured the CMS experiment with **Tijinder Virdee** (left), the CMS spokesperson, and **Denis Favart** (right), of the Université Catholique de Louvain. Lyn Evans, the LHC project leader, and Karel Cornelis, of CERN's Beams Department, provided a brief introduction to the particle collider. The king also signed the CERN guest book and met several Belgian scientists.



Italian minister for foreign affairs **Franco Frattini** (centre) visited CERN on 29 January. After a tour of the ATLAS experiment he attended a presentation on the four major LHC experiments, given by the director-general, **Rolf-Dieter Heuer**. He also met eminent Italian scientists at CERN, including Nobel Laureate **Carlo Rubbia** (right), **Antonino Zichichi** of the INFN and University of Bologna (second left), and CERN's director of research and scientific computing **Sergio Bertolucci** (far left).



Nguyen Thien Nhan, Vietnamese deputy prime minister and minister of education and training (centre), toured the ATLAS experimental cavern during a visit to CERN on 3 February. He was also accompanied by **Peter Jenni** (left), ATLAS spokesperson, and **John Ellis** (right), adviser to CERN's director-general on relations with non-member states.



Actors **Tom Hanks** (centre left), **Ayelet Zurer** (centre right) and director **Ron Howard** (far right) were at CERN on 12 February to unveil to the press some select footage from their film adaptation of Dan Brown's novel *Angels & Demons*. A press event was held in the Globe of Science and Innovation, and journalists visited the ATLAS experiment. Also participating were LHCb physicist **Tara Shears** (second from left) and former spokesperson of the ATHENA antihydrogen experiment, **Rolf Landua** (second from right) and CERN's director of research and scientific computing **Sergio Bertolucci** (far left).

OUTREACH

Pakistani students learn Grid Computing

The Khwarizmi Science Society (KSS), Pakistan's leading grass-roots science organization for promoting ideas between students, teachers, journalists and the public, held a lecture on the LHC Computing Grid at Punjab University's Physics Department on 5 January. The speaker was Ashiq Anjum, who currently works at the University of the West of England in the UK and has been associated with CERN for the past seven years.

The popular lecture was part of the KSS's International Year of Astronomy celebrations, organized under the leadership of the society's president, Saadat Anwar Siddiqi, professor at Punjab University's Centre for Solid State Physics. The goal was to introduce the concept of Grid computing and motivate young Pakistani students, budding engineers and the large national pool of computer scientists towards working in this flourishing field of computing. Punjab



Ashiq Anjum during his popular lecture on "The LHC Computing Grid", later broadcast on TV.

University, based in Lahore, is the Alma Mater of Pakistan's only Nobel Laureate, Abdus Salam, and is one of Asia's oldest and most prestigious universities.

The speaker described the computing challenges of the LHC and explained how data from the experiments are distributed through a multi-tier network of data centres, Pakistan's point of contact being the National Centre for Physics in the capital, Islamabad. The talk was concluded by a lively question-and-answer session, where, for example, Anjum explained how the Grid and its reincarnated version, "the Cloud", could help Pakistan and the developing world in its problems concerning computational drug design, alleviate health conditions and make education accessible to all.

The lecture was preceded by a welcome address by Saadat Anwar Siddiqi, who appreciated the Higher Education Commission's effort to telecast the lecture live throughout institutes in Pakistan. The local press was also present and later broadcast the lecture on television.

OBITUARIES

Johannes C Sens 1928–2008

Johannes C Sens, a physicist and engineer with a long association with CERN, passed away on 3 November 2008 in Nice following complications after surgery. He was considered one of the pioneers of the first muon g-2 experiments at CERN and an instrumental figure in the work leading to the discovery of the fifth quark.

Known as Hans, he was born in the Netherlands and spent his formative years living under German occupation. He initially pursued a classical education but after spending a few years in a Jesuit seminary, in 1953 he obtained a degree in engineering at the Technical University of Delft. Hans then enrolled at the University of Chicago, where he studied under Enrico Fermi. After Fermi passed away, Hans gained his PhD working on muons with Valentin Telegdi at the University of Chicago before moving to CERN in 1958, at the same time as Leon Lederman; together they initiated a study of the methods of measuring g-2 for the muon (*CERN Courier* December 2005 p12).



The 1960 g-2 team, photographed with the magnet that was used. Left to right: Francis Farley, Johannes Sens, Georges Charpak, Theo Muller and Antonino Zichichi.

In 1966, after working on various experiments with muons, Hans left CERN to join the Foundation for Fundamental

Research on Matter in the Netherlands and the University of Utrecht. With the advent of the Intersecting Storage Rings at CERN he

became spokesman of the CERN-Holland-Lancaster-Manchester collaboration there.

In 1976, during a leave of absence in the US, he played a major role in Lederman's experiment that discovered the Y particle and hence the fifth quark, b. He later spent several years (between 1979 and 1986) at the Stanford Linear Accelerator Center working with fellow Dutch collaborators on electron-positron and photon-photon collisions at the PEP collider.

Hans then returned to particle physics at CERN and worked on the development of the analysis programmes for the L3 experiment, led by Samuel Ting, at LEP. He retired in 1993 but spent time at the Academia Sinica and

the National Central University of Taiwan, and he was most recently associated with the Institut Non-Linéaire de Nice.

From 1966 to 1994 Hans taught courses in particle physics at the University of Utrecht and supervised work on a number of MSc and PhD theses. He deliberately avoided accepting administrative functions, consistently giving priority to research and teaching. His life-long passion for research was evident in his efforts over the past few years to conduct and publish research in what was for him a new field, astrophysics. He was elected lifetime member of the Royal Netherlands Academy of Arts and Sciences as well as the European Academy of Arts, Sciences and Humanities.

With his passing, the particle-physics community has lost a highly distinguished and dedicated physicist, researcher and teacher who committed himself sincerely to the advancement of physics. He had many friends around the world and was respected for his deep and wide professional knowledge, devotion to scientific research, scientific vision, teaching talent and warm relationships with colleagues. His intellect, charm and open character will be missed by us all.

He is survived by two brothers, Paul and Cees, a sister Elly, his three children Paula, Alexandra and Erik-Jan, as well as a granddaughter, Maria Leonor. *Erik-Jan Sens.*

Frank C Shoemaker 1922–2009

Frank C Shoemaker, a leading high-energy particle physicist, died on 11 February 2009 in Hightstown, New Jersey, aged 86.

Frank was born in Ogden, Utah, the second of five sons, all of whom went on to earn PhDs. He spent his high-school years in Boise, Idaho, where he met his future wife, Ruth Elizabeth Nelson; they both attended Whitman College in Walla Walla, Washington and were both elected to Phi Beta Kappa. Following graduation and marriage, the Shoemakers worked at the Radiation Lab at Massachusetts Institute of Technology on the development of radar for use during the Second World War. After the war Frank received his PhD in physics from the University of Wisconsin, Madison, and moved to Princeton to begin his nearly 40-year career with the university's physics department. He was made a full professor of the university in 1962.

Frank was a founder member of the university's experimental particle-physics group. He led the reconstruction of the university's Palmer Cyclotron following a fire in 1952 and, in the course of his research, performed pioneering experiments on the strong focusing of particle beams. He then went on to lead the design and construction of the 3 GV Princeton-Pennsylvania Accelerator and served as associate director of the accelerator programme from 1962 to 1966. In 1968–69, he took a year-long leave of absence from Princeton to become the first head of the Main-Ring group at the



Frank Shoemaker with canine companion. (Courtesy Barbara Shoemaker.)

National Accelerator Laboratory (later named Fermilab) in Illinois and led the design and construction of the facility's 1 km radius main accelerator ring. He also suggested the introduction of the herd of bison that still grazes around the accelerator.

Returning to Princeton in 1969 Frank played critical roles in the university's

experiments at the Brookhaven National Laboratory and Fermilab, which provided confirmation of the new QCD theory of strong interactions and the unified theory of weak and electromagnetic interactions. He served as principal investigator from 1972 to 1985. Following his retirement from teaching in 1989 he played a major role in the Booster Neutrino Experiment, MiniBooNE, at Fermilab.

During the course of his career he authored or co-authored more than 100 papers and articles, became a Fellow of the American Physical Society and a member of Sigma Xi. He was awarded an honorary doctor of science degree by his Alma Mater, Whitman College, in 1978.

Frank served as director of undergraduate physics studies from 1981 to 1989. It was in this role that he transformed the teaching of introductory physics at Princeton. He was a dedicated teacher and served as mentor to generations of students and junior faculty.

In addition to physics, his main passions were his family, classical music, sailing and dogs. His home was never without a canine companion until the few years just prior to his death and music always filled the air. After his retirement he travelled the globe together with his wife Ruth, visiting all 50 states and 5 continents. After nearly 57 years of marriage, Ruth died in 2001. Frank is survived by his daughters Barbara Shoemaker and Mary Mitnacht, and a brother, Sydney Shoemaker.

His family and colleagues.

MEETINGS

The **XXIth Rencontres de Blois**, "Windows on the universe", will be held on 21–26 June in the Château de Blois, Loire Valley. This year sees the 20th anniversary of this series of conferences; moreover, 2009 is the International Year of Astronomy. To celebrate these two events, Nobel laureates James Cronin, Riccardo Giacconi, David Gross, Martin Perl, George Smoot, Jack Steinberger, Joseph Taylor and many other well known scientists will attend and give a lecture. For registration and abstract submission for talks in parallel sessions, see <http://blois.in2p3.fr>.

The **5th Patras Workshop on Axions, WIMPs and WISPs** will be held at the IPPP in Durham on 13–17 July. The workshop will address the physics case for the particles that are beyond the Standard Model and will review collider as well as astrophysics experiments. There will also be discussions on new laboratory experiments searching for WIMPs, axion-like particles and other weakly interacting sub-electron-volt particles

(WISPs). See <http://axion-wimp.desy.de>.

The **2009 Europhysics Conference on High Energy Physics**, the biennial conference organized by the High-Energy Particle Physics Division of the European Physical Society, will take place on 16–22 July at the Jagiellonian University in Krakow. The first three days of the conference are reserved for parallel sessions and the last three days (starting on 20 July) for plenary talks. There will also be a poster session. A joint EPS-ECFA meeting will take place on the afternoon of 18 July; 19 July is reserved for excursions. Conference registration, abstract submission and hotel registration is open and available at <http://hep2009.ifj.edu.pl/bulletins.php>. The deadline for hotel reservations is 8 May.

The **29th International Conference on Physics in Collision (PIC 2009)** will take place on 30 August – 2 September at Kobe University, Japan. The programme is composed of invited talks and poster sessions. Invited speakers

will review and update key topics in elementary particle physics to encourage informal discussions on new experimental results and their implications. Topics include electroweak physics, neutrino physics, astroparticle physics, heavy-flavour physics, QCD physics and Higgs and physics beyond the Standard Model. For more details, see www.research.kobe-u.ac.jp/fsci-epp/pic2009/; or e-mail pic2009@person.kobe-u.ac.jp.

ICALEPCS 2009, the **12th International Conference on Accelerator and Large Experimental Physics Control Systems**, will be held on 12–16 October at the Kobe International Conference Center in Kobe. The conference is open to participants worldwide involved in the field of controls and having an interest in the challenging aspects of experimental physics control systems, i.e. control systems for facilities such as particle accelerators, particle detectors, telescopes and nuclear fusion facilities. For more details, see <http://icalepcs2009.spring8.or.jp>.

NEW PRODUCTS

Aerotech has announced the new PlanarHD air-bearing stage, featuring several design enhancements for increased throughput in ultrahigh precision applications, such as semiconductor processing. The stage, with a travel of 500 mm × 500 mm, includes larger air-bearing surfaces for improved characteristics, as well as higher power linear-servo motors on both axes to deliver a 2 m/s scan velocity with a positioning resolution of up to 0.25 nm, repeatability to 50 nm and accuracy to ± 300 nm. For further details, contact Cliff Joliffe on tel +44 118 940 9400; fax +44 118 940 9401; e-mail cjoliffe@aerotech.co.uk; or visit www.aerotech.co.uk.

Hidden Analytical has developed the EPIC series of quadrupole mass spectrometers designed with maximum flexibility for use in UHV and XHV pressure regimes, with measurement of neutrals, radicals and positive and negative ions. Integral timers provide data-acquisition gating for pulsed-gas and ion experiments with gating resolutions to 100 ns. Applications include molecular beam analysis and laser reaction studies, together

with all of the functions of a high-performance residual gas analyser. For more information, see www.HiddenAnalytical.com; tel +44 1925 445 225; fax +44 1925 416 518; or e-mail info@hidden.co.uk.

Physik Instrumente (PI) has developed the new N-380/N-381 NEXACT ceramic linear-motor actuators. The new actuator is based on the "Piezo walk" principle and replaces classical lead-screw actuators, combining high forces and long travel ranges with subnanometre resolution in a small package. Features include a 1 kg push/pull force, 30 mm travel and 10 mm/s speed, a self-locking, stiff design and non-magnetic and vacuum-compatible options. For more information, contact David Rego on tel +1 508 832 3456; fax +1 508 832 0506; e-mail info@pi-usa.us; or visit www.pi-usa.us.

The **Rubis Precis/Micropierre Group** has extended the Rubis Precis works at Charquemont by 500 m², as well as having commissioned a new ultramodern facility of 2100 m² at the works of Micropierre at Besançon. The group specializes

in the production of high-precision, micro-mechanical assemblies integrating hard materials (mainly sapphire and ceramics) with metals (stainless steel, titanium, gold and platinum). These assemblies are mounted by techniques that include press-fitting, setting, brazing or laser welding. For further details, e-mail rubis@rubis-precis.com; fax +33 3 816 86834; or visit www.rubis-precis.com.

Lake Shore Cryotronics has introduced the new Model 336 temperature controller, available with four standard inputs, four control outputs and a total of 150 W of low-noise heater power. Two independent heater outputs providing 100 W and 50 W can be associated with any of the four inputs and programmed for closed-loop temperature control in proportional-integral-derivative mode. The controller's zone-setting feature allows temperatures to be monitored and controlled seamlessly from 300 mK to over 1500 K. For further details, tel +1 614 891 2244; fax +1 614 818 1600; e-mail info@lakeshore.com; or visit www.lakeshore.com/336.html.