

FACES AND PLACES

APPOINTMENTS

Lucia Votano takes the helm at Gran Sasso

Lucia Votano is to be the next director of the National Laboratory in Gran Sasso of Italy's National Institute of Nuclear Physics (INFN). The appointment was made by INFN's Board of Directors following the proposal of the Council. Votano will take office in September, when the second and last term of the current director, Eugenio Coccia, expires. This is the first time that a woman has been named as director of one of INFN's four large national laboratories.

Votano received her degree in physics from "La Sapienza" University in Rome in 1971 and in 1976 she began her career at the INFN laboratories in Frascati. She has collaborated on important research projects at CERN and at DESY. In 1988, she was promoted to senior researcher and became a research director

in 2000. Votano is currently a member of the Peer Review Committee of the Astroparticle Physics European Co-ordination (ApPEC) and of the Roadmap Committee of the Astro Particle ERANet (ASPERA), which last September produced a roadmap on the future of astroparticle research in Europe.

The laboratory under the Gran Sasso mountain is the world's largest underground laboratory for astroparticle physics. Research there includes the CERN Neutrinos to Gran Sasso project, in which neutrinos travel approximately 700 km from CERN for detection by the OPERA experiment, for which Votano was the co-ordinator, and in the near future by the Imaging Cosmic and Rare Underground Signal Experiment (ICARUS), developed by Carlo Rubbia.



Lucia Votano is to become director of the National Laboratory in Gran Sasso. (Courtesy INFN.)



After the honorary-degree ceremony, from left to right: Pascal Lamy, Lyn Evans, Desmond Tutu, Jean-Dominique Vassalli, rector of the University of Geneva, and Mary Robinson.

DEGREES

Geneva awards Evans honorary degree

Lyn Evans, who led the project to build the LHC from its inception in 1994 until start-up on 10 September 2008, was made doctor *honoris causa* by the University of Geneva in a ceremony held on 5 June. It was one of four honorary degrees bestowed on people renowned for their activities in bringing nations together. The other recipients were Pascal Lamy, director-general of the WTO; Mary Robinson, former President of Ireland

and UN Commissioner on Human Rights from 1997–2002; and Desmond Tutu, archbishop-emeritus of Cape Town, renowned church leader and opponent of apartheid.

The ceremony was held in St Peter's Cathedral in Geneva and it was preceded by a procession in full academic regalia that included representatives from Europe's oldest universities. This year the University of Geneva is celebrating its 450th anniversary.

SCHOLARSHIPS

Erice announces new Weisskopf Scholarships

The United Nations has declared 2009 as the International Year of Astronomy, 400 years after Galileo Galilei first turned his telescope on the heavens. These celebrations have opened the way to a special grant awarded by the Italian government to the Subnuclear Physics School in Erice.

This school, the first in the field, was founded in 1963 at CERN by Patrick Blackett, Isidor Rabi and Victor Weisskopf, together with two fellows John Bell and Antonino Zichichi – in Weisskopf's office when he was director-general at CERN.

The special grant covers 50 fellowships named after Weisskopf, which will cover fees, full board and lodging for 50 new talents in the field of subnuclear physics. For details on how to apply for the Weisskopf Scholarships and information on the programme for the 2009 school, see www.ccsem.infn.it/ef/emfcsc2009/pdf/ISSP.pdf.

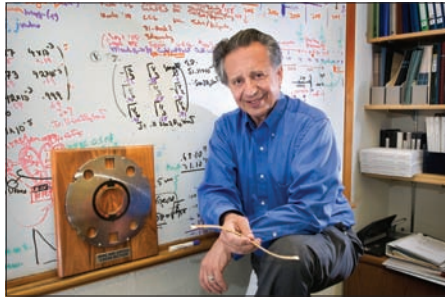
● The International School of Subnuclear Physics, Erice, takes place on 29 August to 7 September: www.ccsem.infn.it/issp/.

AWARDS

Samios receives Gian Carlo Wick award...

The World Federation of Scientists (WFS) has chosen Nicholas Samios, former laboratory director and director of the RIKEN BNL Research Center at the US Department of Energy's Brookhaven National Laboratory, as the recipient of the 2009 Gian Carlo Wick Gold Medal award, which is given annually to a theoretical physicist for outstanding contributions to particle physics.

Samios was cited "for his visionary role in the successful construction of the Relativistic Heavy Ion Collider, and for his intellectual leadership in a series of remarkable experimental discoveries, which established



Nicholas Samios. (Courtesy BNL.)

the existence of quark gluon plasma, a new phase of strongly interacting nuclear matter".

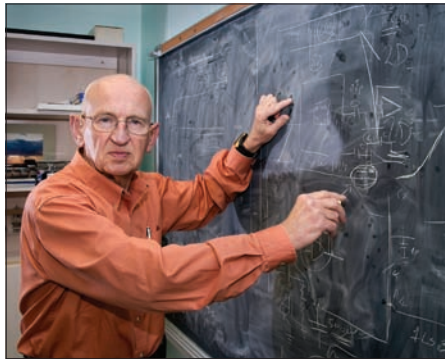
The WFS was founded in 1973 in Erice by a group of eminent scientists led by Isidor Isaac Rabi and Antonino Zichichi. Now an association of more than 10 000 scientists from 110 countries, the WFS aims to share knowledge among all nations so that everyone can experience the benefits of scientific progress. The award is named in honour of Gian Carlo Wick (1909–1992), a native of Italy and an eminent theoretical physicist who led the theory group at Brookhaven from 1957 to 1965. Samios will receive the prestigious award on 20 August at a WFS meeting to be held in Erice.

...while Radeka and Sorensen are honoured by IEEE and APS

The Long Island Section of the IEEE has honoured Veljko Radeka, head of the Instrumentation Division at Brookhaven, with the Harold Wheeler award for "outstanding leadership and accomplishments in detector development, which enabled discoveries in many areas of science and technology in a career of sustained productivity spanning over 50 years".

Radeka and colleagues have developed numerous state-of-the-art detectors that are used in major laboratories around the world. For example, in the 1970s, he worked with Bill Willis to develop liquid-argon calorimeters, which are used at most major particle physics facilities, including CERN. This early work led to Brookhaven's contributing key components to the ATLAS detector in the LHC. Continuing these developments, Radeka and colleagues are working on the technology for large neutrino detectors to be used in the future.

Physicist Paul Sorensen at Brookhaven has received the 2009 George E Valley Jr



Veljko Radeka, left, and Paul Sorensen, right, have both received professional honours. (Courtesy BNL.)

Prize from the American Physical Society (APS), awarded at the April meeting of the APS in Denver. The prize is awarded biennially to an individual in the early stages of his or her career for an outstanding scientific contribution to physics that is deemed to have significant potential for a dramatic impact in the field. Sorensen was to receive the prize at the April 2009 APS meeting in Denver.

He was recognized for his role in discovering



that quarks are important throughout the expansion of the matter created in heavy-ion collisions at the Relativistic Heavy Ion Collider. With his colleagues, he measured the mass, momentum and direction of subatomic particles from data derived from the STAR detector. Sorensen and his collaborators proved that the "perfect" liquid depends on the interactions of quarks, rather than on more obvious properties, such as mass.

CORRECTIONS

In the issue of June 2009, errors crept into figures quoted in the following articles. The uncertainty quoted on p8 for the mass measurement of ^{70}mBr at NSCL should be 15 keV not 0.15 keV. In the article about results from Borexino, there should be no

horizontal error on the data point close to 1 MeV in the plot on p13 of electron-neutrino survival probability at Earth (as this point refers to monoenergetic neutrinos from ^7Be). The telescopes used in the HEGRA project described on p21, had an area of 8.5 m², not a

diameter of 8.5 m. Apologies to all concerned.

In the issue of April 2009, the caption to the photo in the archive article on p13 refers to the inner conductor of the neutrino "horn". In fact it shows the inner conductor of one of the reflectors, as correctly indicated in the article.

Markov prize goes to Bolotov and Obraztsov

Vladimir Bolotov from the Institute for Nuclear Research (INR) of the Russian Academy of Sciences in Moscow and Vladimir Obraztsov from the Institute for High Energy Physics (IHEP) in Protvino have been awarded the Markov prize for 2009. INR established the prize in 2002 in memory of Moisey Alexandrovich Markov, one of the founders of the institute. The awards were made at the 7th Markov Readings held in Moscow on 15 May.

Bolotov and Obraztsov have received the prize for their outstanding contribution to the study of rare meson decays and the creation

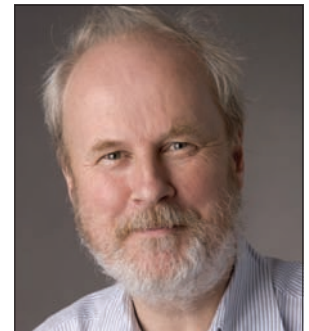
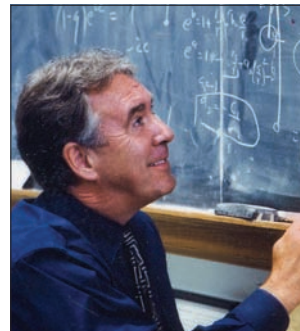
of the ISTR+ facility at the IHEP U-70 proton synchrotron. Bolotov, who leads a large collaboration from INR, IHEP and JINR, was responsible for the creation of the ISTR+ facility. Obraztsov, who has found a number of rare decays, has worked on experiments at IHEP and at CERN. Both physicists have also contributed a great deal to the creation of new facilities for studying rare decays – ISTR+ and its successor OKA (p5) – and put forward an idea to elaborate a new experiment, KLOD, at IHEP to search for the super-rare decay $K_L^0 \rightarrow \pi^0 \nu \bar{\nu}$.



Left to right: Vladimir Kravchuk, a former Markov prize winner, Victor Matveev, director of the INR, Vladimir Obraztsov, Vladimir Bolotov and Valery Rubakov. (Courtesy INR.)

Particle physicists join the ranks of FRS

On 15 May the Royal Society in London announced the election of new fellows, including three leading figures in the field of particle physics. Michael Duff of Imperial College London is elected for his key contributions to developing quantum ideas in supergravity, string theory and M-theory. Fermilab's Keith Ellis is distinguished for his seminal contributions to quantum chromodynamics, the theory of the strong interactions, having performed many of the key calculations that led to the acceptance of QCD as the correct theory. Art McDonald of Queen's University, Ontario, and director of Sudbury Neutrino Observatory is honoured for his outstanding research in nuclear structure physics, into the charge symmetry of nuclear forces and the influence of the weak



Left to right: Art McDonald, Michael Duff and Keith Ellis. (Photos courtesy Queen's University, Ontario, M Duff and Fermilab Visual Media Services.)

interaction on quark interactions.

In addition, Rashid Sunyaev, director of the Max Planck Institute for Astrophysics and chief scientist of the Space Research

Institute, Russian Academy of Sciences, becomes a Foreign Member of the Royal Society, "as the greatest Russian astrophysicist of our time".

IPS honours Kakodkar with Chugani Award

Anil Kakodkar, chairman of the Indian Atomic Energy Commission and secretary in the Department of Atomic Energy, has received the Indian Physics Association's 2008 M M Chugani Memorial award for excellence in applied physics "in recognition of his outstanding contributions to Indian Nuclear Science and Technology". The prize ceremony took place on 11 May, National Technology Day in India, at the Nehru Centre in Mumbai, where Kakodkar received the

award from Bikash Sinha, president of the IPA and director of the Variable Energy Cyclotron Centre and the Saha Institute of Nuclear Physics, Kolkata. Kakodkar played an important role in the design and construction of the Dhruva reactor at the Bhabha Atomic Research Centre, where several new technologies related to electron-beam welding, reactive material fabrication and dissimilar metal joints were deployed on a large scale.



Bikash Sinha, left, presents the M M Chugani award to Anil Kakodkar. (Courtesy IPA.)

PhD thesis prize for Couet and Röhrs

This year's PhD thesis prize of the Association of the Friends and Sponsors of DESY is shared by Sebastien Couet and Michael Röhrs, both from the University of Hamburg. The annual prize acknowledges the best doctoral thesis on DESY physics. Couet receives the prize for

his thesis on "The structural and magnetic properties of Fe/native oxide systems resolved by X-ray scattering and spectroscopy methods". His results point out a new way of stabilizing novel magnetic structures. Röhrs receives the prize for his thesis on the "Investigation of the Phase Space Distribution of Electron Bunches at the FLASH Linac Using a Transverse Deflecting Structure". His work covers high-resolution beam diagnostics at the free-electron laser, FLASH.



Left to right: Sebastien Couet, DESY director Helmut Dosch and Michael Röhrs. (Courtesy DESY.)

CONFERENCE

ICNTS '08 follows nuclear tracks in Bologna

The 24th International Conference on Nuclear Tracks in Solids (ICNTS) took place in September 2008 at the Belmeloro Conference Complex of the University of Bologna. Organized by the university together with the International Nuclear Track Society (INTS), INFN and the Italian National Agency for New Technologies, Energy and the Environment (ENEA), the conference as usual provided an opportunity for very different scientific communities to meet, with topics ranging from fundamental research in physics and astrophysics to applied research in the environment, health and advanced technologies, such as nanotechnologies.

INTS has a long tradition in nuclear track detectors (NTDs) and their applications. NTDs can record the passage of heavily ionizing particles through the production of a nanometre-scale damage zone (the "latent track") along their trajectories. The latent track can be amplified by applying appropriate chemical etching and it appears, under an optical microscope, as a cone-shaped etch-pit. The technique, which employs materials such as polymers, glasses and minerals, is relatively low cost and so may be used by small groups of researchers in developing countries. It becomes more costly if automatic scanning systems are needed to analyse large surface areas.

With their resistance to radiation and excellent charge resolution (which can be as low as 1/20th of the electron charge), NTDs allow searches at accelerators for the production of heavily-ionizing particles, such as point-like magnetic monopoles, and studies of ion-fragmentation processes. In



Participants at the 25th ICNTS in Bologna. (Courtesy Fabio Bisi INFN/Bologna.)

many cases, when the event rate is expected to be small – as in searches for exotic particles in the cosmic radiation – NTDs provide a viable detection technique as they are passive, reliable on long runs and easy to deploy. In applied physics they are widely used for radon monitoring, neutron dosimetry and in medical applications.

More than 140 people from 30 countries (mainly from Europe, China, India, Pakistan, Russia and South America) attended the 24th ICNTS. The conference programme included invited plenary talks on hadron therapy, radiation protection in space, searches for exotic phenomena, and the status of large projects. Parallel sessions for oral and poster presentations (with about 300 abstracts submitted) covered the following topics: particle and nuclear physics; high-energy interactions and cosmic rays; radiation environment monitoring; neutron dosimetry; medical applications; radiation-induced damage; Earth and planetary sciences and dating; and nano and microstructure

technology, methods and instrumentation. In addition, a special session on the "Energy problem" was open to students and the general public.

During the conference, Denis O'Sullivan, emeritus at Dublin Institute for Advanced Studies, was awarded the R Walker Medal, in acknowledgement of his outstanding contribution to the field. Yi Lun Law, a student at the City University of Hong Kong, was awarded the V Perelygin Prize for the originality of her research work and presentation skills. There were also awards for several posters, the first prize going to "School Education by Observation of Nuclear Tracks in Solids" by T Tsuruta of the Atomic Energy Research Institute, Kinki University in Japan. The poster was chosen for its originality and the application of scientific ideas in everyday life and for teaching.

● The proceedings of the conference are being published in *Radiation Measurements* (Elsevier). The 25th ICNTS will be held in Puebla, Mexico, in 2011.

JINR

Golutvin celebrates 75th birthday at Dubna

Igor Golutvin, one of the leading scientists at JINR, Dubna, celebrates his 75th birthday in August. He is well known for several generations of large-scale experiments at JINR's synchrophasotron and at the accelerator of the Institute for High Energy Physics in Protvino, as well as at CERN.

Golutvin began to develop and study wire spark chambers for neutrino experiments during his first visit to CERN in 1964, at the time when online computers were first used. This experience helped him involve electronic methods in experiments at the synchrophasotron and at the U-70 accelerator at Protvino. Under his leadership, the USSR then had its first – and one of the world's first – apparatus to study elastic pp-scattering and $K^0-\bar{K}^0$ regeneration.

In 1974 Golutvin was one of a group of physicists sent to CERN to establish a joint JINR–CERN experimental programme. The successful work by Golutvin and the Dubna team strengthened the participation of the JINR physicists at CERN and promoted the development of co-operation. As a result the first joint experiment, NA4, by the Bologna–



Igor Golutvin. (Courtesy A Zarubin.)

CERN–Dubna–Munich–Saclay collaboration, was approved in 1975. Golutvin led the R&D and construction of large proportional chambers for this experiment.

At Dubna he organized a powerful base for R&D and mass-production of different types of wire detectors and their electronics. Drift and proportional chambers constructed under his leadership were used in experiments at Dubna and Protvino, and

large-area chambers manufactured at Dubna were used in the SMC experiment at CERN and in HERA-B at DESY. In 1988 Golutvin initiated the Dubna silicon programme to develop applications of radiation-hard silicon detectors in experiments at colliders.

For the past 16 years Golutvin has been an organizer of international co-operation in the CMS project at the LHC. He has been spokesperson for the Russia and Dubna Member States (RDMS) collaboration in CMS since 1994. The RDMS–CMS collaboration, which involves 24 research institutes, was responsible for the design, construction and commissioning of the endcap hadron calorimeter and first forward muon stations, with active participation in the design and production of several other sub-detectors. Golutvin has also paid meticulous attention to development of the RDMS physics programme, grid-based computing and the CMS upgrade for the proposed Super-LHC.

● A session of the 13th Annual RDMS–CMS Collaboration Conference dedicated to Golutvin's 75th birthday will be held in Dubna on 10 August.

WORKSHOP

Leimen provides a charming welcome

The CHARM 2009 workshop, organized by GSI, took place on 20–22 May in the mediterranean ambience of Hotel Villa Toskana in Leimen. A total of 60 experts from four continents met at this international workshop on the physics of charm quarks to discuss the current state of research.

The main subjects apart from the production mechanisms of the medium-weight representatives of the quark family were hidden-charm and open-charm states and spectroscopy, as well as measurement of the properties of charmed baryons and mixing of neutral D mesons. Special attention was given to the discussion of experiments currently running, such as BESIII, which started last summer in Beijing, and to future experiments such as LHCb at CERN and the PANDA experiment proposed at



Participants pose for the "family photo" at CHARM 2009 in Leimen. (Courtesy GSI.)

the Facility for Antiproton and Ion Research, which will allow significant improvements in the precision of all kinds of measurements in this field, owing to the superior statistics. The

next and fourth workshop in this series will most likely be held in autumn 2010 in Beijing.

● For more information about CHARM 2009 visit <http://charm09.gsi.de/>.

OBITUARY

James V Allaby 1936–2009

Jim Allaby, a well known figure at CERN and in the international particle physics community passed away on 7 April.

Jim was born in Preston, England, in October 1936. After obtaining a first degree in physics at King's College, London, he went to Liverpool to study for his PhD at the university's synchrocyclotron. This was his first proton–proton scattering experiment and was the start of a lifelong friendship with Bert Diddens, who was there as a CERN fellow.

In the early 1960s Jim moved to SLAC where he worked with Dave Ritson on electron inelastic scattering. Ritson greatly appreciated Jim's calm and systematic approach to any kind of problem that he was confronted with. It was natural for Jim to visit SLAC later and for Ritson to join the DELPHI collaboration in the 1990s.

Jim came to CERN in 1965 and joined the group of Giuseppe Cocconi, Bert Diddens and Alan Wetherell, who were preparing proton–proton scattering experiments in a slowly extracted proton beam at the highest PS energies. This led to the discovery of structures in large-angle scattering and the “black disc” behaviour of elastic scattering.

In 1968 a CERN group – formed around Alan, Bert and Jim – initiated a collaboration to study particle production and the total hadron–hadron cross-section at the new 70 GeV accelerator of the Institute for High Energy Physics (IHEP) at Protvino, near Serpukhov. Jim took this mission very seriously and learned Russian much better than the others did. The bureaucracy was tough; the people in Protvino were not allowed non-professional contact with the CERN team, but Jim excelled in overcoming this, thanks to his character, social skills and knowledge of the language. His role in the development of relations with eastern Europe continued during the time of the SPS at CERN, when he served on the Joint Scientific Committee for co-operation between CERN and IHEP. Later he was co-chairman on a similar committee for co-operation between CERN and JINR.

In 1970 the CERN group joined the Rome–ISS (Istituto Superiore di Sanità) group, which had proposed measuring small-angle elastic scattering at the nearly



James V Allaby.

completed Intersecting Storage Rings, using the technique that became known as “Roman pots”. Jim participated in the initial phase of the experiment, which brought several discoveries including the rising proton–proton cross-section. However, he was becoming more involved in serving the physics community, as PS co-ordinator in 1970 and later as a member of the team preparing the SPS experimental programme. John Adams, then director-general, appointed Jim as physics co-ordinator for this programme, working in close collaboration with the Experimental Areas Groups, in charge of designing the areas and the beams. This fruitful co-operation led to the construction of the initial complement of beams with the required particle detection and identification devices. Here Jim displayed his very special qualities, by implementing his own vision, but always making reasonable compromises and decisions without upsetting his partners.

His own interest at the SPS was in studies of the neutrino neutral-current interactions performed by the CERN–Hamburg–Amsterdam–Rome–Moscow (CHARM)

collaboration. These included tests of the nature of the charged-current interactions, which were based on the measurement of the polarization of muons produced upstream in the iron calorimeter of the CDHS experiment. This required transforming CHARM's 400 tonne marble calorimeter into a muon polarimeter. Jim was very active in the construction of the detector and in this transformation in particular.

At the end of the 1970s Jim became one of the founding fathers of the DELPHI experiment. He played an important role in the genesis of the ring-imaging Cherenkov detector during the phase that led from the initial spherical design to the final cylindrical shape. DELPHI was the first collaboration to form an interdivisional group at CERN and to separate the responsibilities of the leader of the “CERN team” from the ones of the spokesman. Jim covered the role of team leader for many years with his usual dedication, efficiency and friendly style of management. In parallel he led the DELPHI Data Acquisition Project from the design to the implementation phase in 1989.

Jim was nominated division leader when Carlo Rubbia was director-general, and in this role continued his strong support for the programme at the Large Electron–Positron (LEP) collider. He was also put in charge of relations with CERN's non-member states.

After completing his term as division leader, Jim joined the L3 collaboration at LEP. He made important contributions to many of the collaboration's publications and was chairman of the L3 Publication Board. After L3 he worked on the Alpha Magnetic Spectrometer (AMS), participating in the preparations for the experiment's first shuttle flight and for the AMS mission on the International Space Station.

After retirement he became a member of the Committee of the CERN–ESO Pensioner's Association, once more serving the community – this time the CERN pensioners and their family members.

We share our sorrow with his family and we convey our deepest condolences and sympathy to Jean and Peter.
His colleagues and friends.

NEW PRODUCTS

ACT/Technico offers Interface Concept's fully managed IPv4/IPv6 ComEth4300a 10 Gbit Ethernet switches. Designed for demanding networking applications and built on Marvell's Prestera GigE packet processors, the new family of Gbit Ethernet switches ranges from 24 to 28 ports, with four of them able to reach 10 Gbit. For more, contact Valerie Andrew tel +1 800 445 6194; e-mail sales@acttechnico.com; or visit <http://www3.acttechnico.com>.

AMS Technologies has announced the PPMCI series, the latest addition to the Leclanché Capacitors family. This capacitor offers extreme mechanical stability owing to the rugged 16-pin contact and uses the latest self-healing polypropylene and polyester films. Models offer voltage/capacitance combinations such as 600 VDC and 35 μ F, including a 2800 VDC version. For more information tel +49 89 89 5770; e-mail salesinfo@ams.de; or visit www.ams.de.

INTEGRATED Engineering Software has introduced the LORENTZ simulation software, which includes meniscus calculations for charged particle extraction from a plasma source. LORENTZ is an easy-to-use solver for analysing charged particle trajectories in the presence of electric and magnetic fields. The technique can also be applied to determine cathode shapes for uniform flux electron guns. For more information tel +1 204 632 5636; or visit www.integratedsoft.com.

KLASTECH-Karpushko Laser Technologies GmbH has launched its new DPSS laser, CRESCENDO, which for the first time provides continuous-wave output at the ruby wavelength, 693.4 nm. Available initially in 100 mW and 150 mW versions, the laser produces a single longitudinal frequency of <1 MHz line-width with a coherence length in excess of 100 m. For more information contact Chris Madin, tel +49 231 47730

640; fax +49 231 47730 620; e-mail info@klastech.de; or visit www.klastech.de/CRESCENDO/html.

Pfeiffer Vacuum has introduced OmniStar and ThermoStar, two benchtop analysis systems for precise monitoring of process analysis for up to 28 different gases. They are also able to identify unknown gases and detect low limits of gases. The units cover a mass range of 1–100 amu, 1–200 amu and 1–300 amu. For more information, contact Sabine Trylat, tel +49 6441 802 169; e-mail Sabine.Trylat@pfeiffer-vacuum.de; or visit www.pfeiffer-vacuum.net.

Princeton Gamma Tech Instruments has launched the Sahara III, a new silicon drift detector that delivers fast cool-down periods of less than five minutes. The reduction in cool-down times allows an improvement in throughput and data collection. The Sahara III is useful for end-users who are changing samples frequently, or in a shared vacuum requiring thermal cycling. For more, tel +1 609 924 7301; or visit www.pgt.com.

Sofradir has introduced the avalanche photodiode MWIR detector that uses mercury cadmium telluride technology. Designed for active imagery, spectrometry and a range of scientific applications, its micron-pitch IR detector enables users to operate cameras with small apertures or with narrow wavebands in extreme low-light detection. For more information, contact Carol Leslie or Marie-Laure Melchior, tel +33 156 5407 00; e-mail carol@ala.com or marielaure@ala.com; or visit www.ala.com.

TREK Inc has announced a new high-voltage power amplifier, Trek Model PZD350A, which provides a large signal bandwidth of 250 kHz and a small signal bandwidth greater than 350 kHz. It has high speed and precise control of output voltages (DC or peak AC) in the programmable ranges of 0 to +/-350 V with an output current range of 0 to +/-200 mA (bipolar model); 0 to 700 V with +/-100 mA (unipolar model); 0 to -700 V with +/-100 mA (unipolar model). For more information, contact Mary Spohn, tel +1 800 367 8735; e-mail marketing@trekinc.com; or visit www.trekinc.com.

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SYMPOSIUM

Special APS session focuses on global physics projects

CERN's LHC has ushered in an era of physics projects that are truly global in scale. These projects are massive in scope, take decades to plan and execute, and cost billions of dollars. A prime example is ITER, the joint international research and development project that aims to demonstrate the scientific and technical feasibility of fusion power. During its annual meeting in Denver on 2 May the American Physical Society (APS) held a special symposium and a panel discussion on "Global Physics Projects", co-organized by the APS Forums on Physics & Society and International Physics.

The panel included Christopher Llewellyn Smith, who is currently chairman of the ITER Council and president of the council for the Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME) facility. He was director-general of CERN at the time the LHC was approved in 1994 and when the US and CERN signed an agreement on the LHC in December 1997. Jack Gibbons, who was then director of the White House Office of Science and Technology Policy and presided over the signing ceremony, was also on the panel. Other panelists were Dennis Kovar, the associate director of science for



The panel, from the right: Dennis Kovar, Pier Oddone, Chris Llewellyn Smith and Jack Gibbons, with chairs Lawrence Krauss and Pushpa Bhat (far left). (Courtesy C Bhat and Don Prosnitz.)

high-energy physics in the US Department of Energy; Pier Oddone, director of Fermilab; and Lawrence Krauss, director of the Origins Initiative at Arizona State University. The session was chaired and organized by Fermilab's Pushpa Bhat, who collaborates on the D0 experiment at the Tevatron and the CMS experiment at the LHC.

The symposium began with a keynote address by Llewellyn Smith on "International Scientific Collaboration", followed by brief remarks by other panelists. The ensuing panel discussion considered the lessons learned so far from large projects, and questions and issues to be addressed for future projects. Are the mechanisms and procedures in place adequate? What and

who should be the drivers for decision making? How should we fund, manage and execute global projects?

Global projects are essential for addressing important scientific and technical challenges in the 21st century. They could also help to build political bridges between nations and across diverse societies, as Llewellyn Smith pointed out. Krauss reinforced this, saying that such projects "have been remarkable in allowing countries that will not otherwise interact to interact, and not just at a peripheral level, but at a fundamental level. The fact that the LHC can be built by thousands of physicists in hundreds of countries speaking dozens of languages is remarkable."

VISITS



President of the government of the former Yugoslav Republic of Macedonia **Nikola Gruevski** (left) visited CERN on 27 April. He visited the CMS experiment, together with CMS spokesperson **Jim Virdee** and was given a presentation about the LHC grid project before touring the Computing Centre. He also visited the LHC tunnel.

On 3 May the Japanese minister of state for science and technology policy, food safety, minister of consumer affairs and minister of space policy, **Seiko Noda** (right), visited CERN. Together with **Taka Kondo** of KEK and the ATLAS Collaboration, she toured the ATLAS control room and the LHC tunnel, where she saw the inner triplet magnets to which KEK contributed. She also visited the CERN Control Centre before meeting with Japanese researchers and students based at CERN.



Carlos Martinez Alonso (right), the Spanish secretary of state for research, ministry of science and innovation, toured the CMS experimental cavern on 13 May with **Guido Tonelli**, deputy CMS spokesperson. He also toured the Computing Centre and the ATLAS experiment and met with members of CERN's Spanish community.