PEOPLE

Hermann Grunder to head Argonne Lab

Hermann Grunder, for 15 years the dynamic director of the Thomas Jefferson National Accelerator Facility (Jefferson Lab), is to become director of the Argonne National Laboratory near Chicago. He succeeds Yoon I Chang, the associate laboratory director for engineering research who has served as interim director since July 1999.

Grunder foresaw the vital superconducting technology objective for Jefferson's CEBAF accelerator. Under his leadership the laboratory was completed on cost and on schedule and began operations in 1994. Christoph Leemann, recently named Jefferson Lab deputy director, becomes interim director during the search for a new director.

Well known in particle and nuclear physics circles, Grunder played a major role in pioneer heavy ion work at Berkeley. He received the Distinguished Associate Award from the US Department of Energy (DOE) in 1996, and the US Senior Scientist Award from Germany's Alexander von Humboldt Foundation in 1979.

A native of Basel, Switzerland, Grunder holds a doctorate in experimental nuclear physics from the University of Basel and a master's degree in mechanical engineering from the Karlsruhe Institute of Technology in Germany.

Argonne was the first US national laboratory, chartered in 1946. With sites in Illinois and Idaho, it has become one of the DOE's largest research centres, with approximately 4200 employees and an annual operating budget of about $465 million.

The University of Chicago has been Argonne's manager and partner throughout its history. The laboratory was formed in 1946 as an outgrowth of the Manhattan Project's Metallurgical Laboratory at Chicago where, in 1942, Enrico Fermi's team produced the first controlled self-sustaining nuclear chain reaction. From 1964 until 1979, Argonne was the home of the 12.5 GeV ZGS, the world's highest energy weak focusing proton synchrotron. The laboratory celebrated its 50th anniversary in 1996.

Today, Argonne performs research across a broad spectrum of scientific and technical areas and is home to a wide array of unique research instruments and facilities, including the Advanced Photon Source.

High-level US–LHC collaboration: US Department of Energy secretary Bill Richardson (centre) at CERN at an LHC interaction region quadrupole test cryostat, part of the US contribution to LHC construction and built by the US–LHC collaboration (hence the Fermilab logo). Left to right: DOE Office of Science director Mildred Dresselhaus, CERN LHC Division Main Magnet Group leader Carlo Wyss, CERN director-general Luciano Maiani, CERN research director Roger Cashmore, secretary Richardson, US UN Geneva ambassador George Moose, DOE High Energy and Nuclear Physics associate director Peter Rosen and CERN non-member state affairs advisor John Ellis.

Every few years, past as well as present members of CERN's distinguished Scientific Policy Committee gather at CERN. This time they were able to admire the mighty equipment being prepared for LHC experiments. Here, the first ring of the magnet barrel yoke for the CMS magnet forms the backdrop.
We’re more than 99.99% empty space! That’s just one of the messages awaiting visitors to CERN’s recently refurbished Microcosm exhibition, which opened on 20 September. Microcosm was created back in 1985 to provide a much needed visitor centre for CERN. Since then, it has evolved considerably to combine elements of CERN’s unique collection of scientific equipment with modern interactive displays. In this most recent refurbishment, interactive demonstrations of the four forces of nature have been added, along with working Rutherford and electron charge-to-mass ratio experiments. Visitors discover that they are over 99.99% empty space by peering into giant hands that show them with ever increasing resolution exactly what they’re made of. Here, visitors to Microcosm try – unsuccessfully – to pull “quarks” from a “nucleon” in one of the exhibition’s new interactive exhibits.

James “BJ” Bjorken (right) has had a big impact on particle physics and the development of the Standard Model. Among other contributions, he was the first to interpret the early results of the 1967 MIT–SLAC deep inelastic electron-scattering experiments in terms of pointlike constituents of the proton, eventually recognized as quarks. To honour him for his decades of service to the field, SLAC held a symposium, “BJ’s Day in the Sun”, on 16 September. Speakers included his thesis advisor and coauthor Sid Drell, his graduate student Helen Quinn, his SLAC buddy and 1990 Nobel laureate Dick Taylor (shown with him above), and his Fermilab boss, Leon Lederman. They brought back many fond memories of “the good old days” at SLAC. (Photo Harvey Lynch.)

The eighth European School of High-Energy Physics, held in Caramulo, Portugal on 20 August–2 September, attracted 101 students from 27 different countries, together with four Portuguese “observer students”. The percentage of female students taking part this year was, at 25%, the highest yet in this series of schools. During the school, two of them celebrated birthdays – Dorothea Samtleben of Hamburg (right) and Alina Radu of Berne.

An exhibition, Science Bringing Nations Together, organized by CERN and the Joint Institute for Nuclear Research (JINR), Dubna, near Moscow, was held in the European Parliament, Brussels on 11–15 October. The opening ceremony on 12 October featured welcome speeches by Carlos Westendorp (chairman of the European Parliament Committee on Industry, External Trade, Research and Energy – seen here speaking), CERN director-general Luciano Maiani, JINR director Vladimir Kadyshevsky, International Science and Technology Centre deputy director Ioannis Antoniou and director-general of the European Commission Research Directorate-General Achilleas Mitsos. The exhibition was also visited by European Commission commissioner for research Philippe Busquin and other distinguished guests.
Baier 70th birthday

27 September marked the 70th birthday of eminent particle physics theorist Vladimir Nikolaevich Baier, head of the theory group at the Budker Institute of Nuclear Physics in Novosibirsk. He started his scientific career in Novosibirsk soon after the foundation of the Budker Institute and played an important role in the formation of its theory division. Professor Baier is known for his fundamental contributions to quantum electrodynamics at high energies, including the theory of inelastic processes, radiative corrections and radiative polarization. Together with his students he formulated the operator approach to quantum electrodynamics in external fields and developed a universal quasi-classical method for the description of high-energy processes. During recent years his team developed a new theory of interactions of electrons, positrons and photons with oriented monocrystals. For many years, Baier has been teaching at Novosibirsk University. Many of his pupils have become well-known scientists.

Earlier this year, three distinguished physicists were awarded honorary doctorates by Johann Wolfgang Goethe University, Frankfurt – left to right, Hermann Grunder, director of the Jefferson Laboratory, Newport News, Virginia; Marcos Moshinsky, creator of modern Mexican physics and famous for Moshinsky transformations in group theory; Rudolf Bock, inertial confinement specialist and emeritus scientist at the GSI heavy-ion laboratory, Darmstadt; they are seen with Reinhard Stock, Dean of Frankfurt Physics. (Photo Frankfurter Allgemeine Zeitung.)

Pakistan Minister of Science and Technology Atta-ur-Rahman (right) with (left to right) CERN CMS experiment spokesman Michel Della Negra, Hafeez Hoorani of Quaid-i-Azam University, Islamabad, and Jim Allaby of CERN. Pakistan has a substantial commitment to the CMS experiment at CERN’s future LHC collider, including plans for a regional computing centre.
Light entertainment

As a medium of our fundamental senses, light is essential for all forms of visual art. Light is also the basis for many industrial and research instruments. Specialist company Electron Tubes is well known for its light-detection products including photon-counting tubes, hemispherical photomultipliers and the smallest ultrarugged light detector in the world.

As part of its commitment to light, Electron Tubes recently took up the opportunity of working with kinetic artist Peter Keene, who draws inspiration from industrial and technological equipment. The company supplied him with a set of 8 inch hemispherical photomultipliers to create a kinetic sculpture to react to audience movement.

See “http://www.electrontubes.com”.

John Blewett 1910–2000

Accelerator pioneer John Blewett died on 7 April, just a few days short of his 90th birthday. Born and educated in Toronto, he completed his PhD at Princeton in 1936. After a postdoctoral year at the Cavendish Laboratory in Cambridge, in the twilight of the Rutherford era, Blewett worked at General Electric's Research Laboratory from 1937 until 1946. There, in 1945, he calculated that the energy of a beam of circulating electrons should lose energy through the dissipation of radiation, resulting in a tiny reduction in the radius of the electron orbit. Following this prediction, “synchrotron radiation” was duly observed at General Electric in 1947.

Meanwhile, in 1946, Blewett had moved to Brookhaven, where he stayed for the remainder of his long and active career. He contributed to the development and construction of a series of major machines at Brookhaven – the Cosmotron, the Alternating Gradient Synchrotron (AGS) and the Light Source, as well as working for the Isabelle collider. Blewett proposed applying the principle of strong focusing to linear accelerators immediately after the invention of this principle for synchrotrons in 1952.

From 1953 until 1954, at the invitation of CERN machine pioneer Odd Dahi, Blewett worked with the small group designing CERN's Proton Synchrotron. US Cosmotron experience and the design approach for the new AGS were thus integrated into European thinking. In 1993 Blewett was awarded the American Physical Society’s Robert R Wilson Prize.

MEETINGS

Snowmass 2001, A Summer Study on the Future of Particle Physics is scheduled to take place in Snowmass, Colorado on 30 June–21 July 2001 with Ronald C Davidson and Chris Quigg as co-chairmen. Contact Cynthia M Sazama, Conference Office, MS 122, Fermi National Accelerator Laboratory, PO Box 500, Batavia IL 60510-0500; e-mail “sazama@fnal.gov”; fax +1 630 840 8589.

Correction

The person seen signing CERN’s VIP visitors’ book on p36 of the September issue is Bulgarian Deputy Minister of Education and Science Christo Balarev, not the Minister. We regret the error.

Courier Web site

The CERN Courier Web site – available at “http://www.cerncourier.com” – was set up when the responsibility for publishing the magazine was passed to Institute of Physics Publishing in October 1998. Although it has a different appearance to the printed version of the magazine, the Web site nevertheless contains all the editorial material published in each issue (the printed advertisements are not reproduced on the Web site). The site is updated as soon as each new issue is printed, usually near the end of the month preceding the cover date.

Latest figures show that about 150 people visit the site every day (about one person every 10 minutes), each of whom view about three pages, taking about 4 minutes to do so. As well as the homepage (the “front door” to the site) and the table of contents pointing to the latest issue, the Web site features a back issue archive with full online content dating back to October 1998.

The valuable search feature enables users to sift through all these online articles using keywords, and is a useful tool to remind the editors what they have written in the past! The Web site also gives information about how to subscribe to regular copies of CERN Courier (see also p3 of any issue). Indispensable data for advertisers can be found the online media pack.

There are also contacts for feedback, editorial and sales, and links to online resources for the high-energy physics community.

John Blewett 1910–2000

An example of the work of kinetic artist Peter Keene, now busy making art from photomultiplier tubes.
The hermetically sealed XDS is a...

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See symposium descriptions and updated meeting information on the MRS Web site:
www.mrs.org/meetings/spring2001/

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B: Molecular and Biomolecular Electronics
C: Electronic, Optical, and Optoelectronic Polymers and Oligomers
D: Advanced Materials and Devices for Large-Area Electronics
E: Wide-Bandgap Electronics
F: Transport and Microstructural Phenomena in Oxide Electronics
G: Luminescence and Luminescent Materials
H: II-VI Compound Semiconductor Photovoltaic Materials

MICROELECTRONICS
I: Water Bonding and Thinning Techniques for Materials Integration
J: Si Front-End Processing—Physics and Technology of Deposit-Detected Interactions II
K: Gate Stack and Stiction Issues in Si Processing II
L: Materials, Technology, and Reliability for Advanced Interconnects and Low-K Dielectrics
M: Chemical-Mechanical Polishing—Advances and Future Challenges
N: Microelectronic, Optoelectronic, and MEMS Packaging

THIN FILMS AND SURFACE PHENOMENA
O: Mechanisms of Surface and Microstructure Evolution in Deposited Films and Film Structures
P: Dislocations and Deformation Mechanisms in Thin Films and Small Structures
Q: Ferroelectric Materials Science and Technology
R: Morphology and Dynamics of Crystal Surfaces in Molecular and Colloid Systems
S: Fundamental Studies of Corrosion and Oxidation

DATA STORAGE
T: Materials for Magnetic Devices—Magneto-Electronics and Recording
U: Ferromagnetic Materials
V: Optical Data Storage—Materials, Mechanisms, and Emerging Technologies

NANO- AND BIOMATERIALS
W: Nanotubes, Fullerenes, Nanostructured and Disordered Carbon
X: Synthesis, Functional Properties, and Applications of Nanostructures
Y: Patternning Soft Materials—From Methods to Applications
Z: Materials in Fields of Scientific Research of the Type Conducted at CERN. Product datasheets are available on CD.