We Hear That

Bjorken, Callan Win Dirac Medal

On 8 August, the birth date of Nobel laureate Paul Dirac, the Abdus Salam International Centre for Theoretical Physics in Trieste, Italy, announced that **James D. Bjorken** and **Curtis G. Callan** are this year's recipients of the Dirac Medal, which honors contributions to theoretical physics and mathematics.

The two winners were cited for their "theoretical investigations in the 1960s and 1970s, which led to the use of deep inelastic scattering for shedding light on the nature of strong interactions." Bjorken, professor emeritus on the high-energy physics faculty at SLAC, was the first to perceive the importance of deep inelastic scattering and the first to comprehend the scaling of cross sections, now called Bjorken scaling.

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Bjorken Callan

Callan, professor of physics at Princeton University, and Kurt Symanzik (now deceased) reinvented the perturbative renormalization group—in a form now known as the Callan–Symanzik equations—and recognized that these equations are measures of scale invariance anomalies. Callan applied this version of the renormalization group to the analysis of deep inelastic scattering and made "substantial contributions to particle physics," including, more recently, to string theory, according to the citation.

Each Dirac medallist receives a cash prize of $5000.

AAPT Bestows Honors

The American Association of Physics Teachers held its 129th national meeting in Sacramento, California, in July. At the gathering, AAPT presented awards to the following individuals for their contributions to physics education and research.

The Klopsteg Memorial Award went this year to **Anton Zeilinger**, professor of physics at the University of Vienna and codirector of the Institute of Quantum Optics and Quantum Information of the Austrian Academy of Sciences. AAPT praised Zeilinger and his experimental quantum physics research group, who have "realized in experiment many fundamental predictions of quantum theory and so proved their amazing consequences for our view of the world."

Kenneth S. Krane, emeritus professor of physics at Oregon State University in Corvallis, received the Robert A. Millikan Award. According to the association, Krane has distinguished himself as a physicist throughout his career in four areas: "research, education, authorship, and administration."

Robert W. Brown took home the Excellence in Undergraduate Physics Teaching Award. He was cited by AAPT for the achievements of his 34-year teaching and research career that has centered on undergraduate education and research in the physics department at Case Western Reserve University. Brown is an Institute Professor of Physics at the university.

The Excellence in Pre-College Physics Teaching Award recipient was **James L. Hicks**, who retired from Barrington High School in Barrington, Illinois, after teaching physics there for 37 years. He was honored by AAPT for his significant contributions to science education on the national, state, and local levels.

In Brief

This month, **Robert Birgeneau** joined the University of California, Berkeley, as its ninth chancellor, succeeding **Robert Berdahl**, who will return to the Berkeley faculty after a year-long sabbatical. Birgeneau comes to Berkeley from the University of Toronto, where he had served four years as president.

In July, **J. Anthony Tyson** became a member of the University of California, Davis, physics faculty as a distinguished professor. He is also now the director of the Large Synoptic Survey Telescope project, in which the university is a partner. Tyson previously was affiliated with Lucent Technologies' Bell Labs as a distinguished member of the technical staff.

Michael F. Thorpe has joined Arizona State University in Tempe as Foundation Professor to set up a new group in biophysics theory. He holds joint appointments in the departments of physics and astronomy and of chemistry and biochemistry, and in the Arizona Biodesign Institute. He previously was a university distinguished professor in the physics and astronomy department at Michigan State University in East Lansing.

Pierre Hohenberg became New York University's senior vice provost for research this past May. Hohenberg relocated to NYU from Yale University, where he was the Eugene Higgins Adjunct Professor of Physics and Applied Physics and had served as Yale's deputy provost for science and technology from 1995 to 2003.

Maw-Kuen Wu, former director of the Institute of Physics, Academia Sinica, in Taipei, Taiwan, was appointed in May as minister of the National Science Council of Taiwan.

Gary Sanders joined the Thirty Meter Telescope project in April as its project manager. The TMT is a collaboration of the Association of Canadian Universities for Research in Astronomy, the Association of Universities for Research in Astronomy, Caltech, and the University of California. Sanders had been the project manager and deputy director of the Laser Interferometer Gravitational Wave Observatory.

The Welch Foundation is bestowing this year's Welch Award in Chemistry on **Allen Bard**, Norman Hackerman–Welch Regents Chair in Chemistry at the University of Texas at Austin. Bard is being acknowledged for his "lifetime achievements in basic electrochemistry research. His work has led to such applications as self-cleaning glass, photocell production of computer memory and the use of light to decompose pollutants." The citation adds that Bard is "responsible for such inventions as the scanning electrochemical microscope, which has improved scientists' ability to study surface structures and measure reaction rates." The award, scheduled to be presented this month at the foundation's conference in Houston, Texas, includes a cash prize of $300 000.

The physics department at the Pennsylvania State University welcomed three former research associates from other institutions as new faculty members this fall. **Deirdre Shoemaker**, previously at Cornell University, **Dezhe Jin**, from the Howard Hughes Medical Institute at MIT, and **Kenneth M. O'Hara**, from NIST in Gaithersburg, Maryland, are the new assistant professors.

Syracuse University recently hired three new assistant professors in physics. Joining the department in August were **Christian Armendáriz Picón**, who completed a postdoc at the Enrico Fermi Institute and in the department of astronomy and astrophysics at the University of Chicago, and **Liviu Movileanu**, who was a postdoc in the department of medical biochemistry and genetics at Texas A&M University. Starting in January 2005 is **Britton Plourde**, currently a postdoc in the physics department at the University of California, Berkeley.

The astronomy department of the University of Texas at Austin has announced two new hires: **Shardha Jogee**, who joined the faculty in August as an assistant professor, and **Volker Bromm**, who will take his post as assistant professor next month. Both come to UT from the Space Telescope Science Institute in Baltimore, Maryland, where Jogee was an astronomer and Bromm is an Institute Fellow.

Tel Aviv University awarded this year's Raymond and Beverly Sackler Prize in the Physical Sciences jointly to **Andrea M. Ghez** and **Adam G. Riess** at a ceremony this past May. Ghez, professor of physics and astronomy at UCLA, was recognized for her "pioneering high-resolution infrared observations that provide evidence for, and establish the mass of, the supermassive black hole in the center of the galaxy." Riess, an astronomer with the Space Telescope Science Institute in Baltimore, Maryland, and an adjunct associate professor at Johns Hopkins University, was acknowledged for his "contributions to the observational study of distant Type Ia supernovae that reveal the accelerating expansion of the universe, and the possible existence of dark energy." The pair share the accompanying $40 000 purse.

Obituaries

Victor John Emery

Victor John Emery, a leading many-body theorist and head of the condensed matter theory group at Brookhaven National Laboratory in New York, died on 17 July 2002 in Wading River, New York, as the result of amyotrophic lateral sclerosis (ALS), better known as Lou Gehrig's disease, which he had battled stoically for several years.

Victor John Emery

Born in Boston, England, on 16 May 1934, Vic earned a BSc in mathematics at the University of London in 1954. Under the supervision of Richard Eden, he received a PhD in theoretical physics from the University of Manchester in 1957 for numerical studies of nuclear structure. His experiences with an early digital computer likely persuaded him of the value of more analytical approaches.

After postdoctoral stints at Cambridge University's Cavendish Laboratory and at the UK Atomic Energy Establishment at Harwell, Vic spent a year on a fellowship at the University of California, Berkeley. Working with Andrew Sessler, he predicted pairing of the fermionic atoms in the quantum liquid helium-3 along the lines of the Bardeen-Cooper-Schrieffer theory of superconductivity, but with pairing in a state of nonzero angular momentum. That prediction (with refinements by others) was confirmed by the 1972 discovery of superfluidity in ^{3}He by David Lee, Douglas Osheroff, and Robert Richardson, who shared the 1996 Nobel Prize in Physics for that discovery.

Vic returned to England and spent three years as a lecturer at the University of Birmingham. He continued his interest in and analysis of liquid ^{3}He experiments. After then spending a year as a visiting assistant professor at Berkeley, Vic settled down at Brookhaven, where he initially continued his work on ^{3}He and ^{3}He–^{4}He mixtures. His work on ^{3}He–^{4}He with Martin Blume and Robert Griffiths led to a simple model of phase separation that is now standard in textbooks on statistical mechanics. Around that time, Vic's confidence in his own abilities was manifest in his assuming the leadership of an experimental cryogenics group involved in a variety of experiments associated with superconductivity and liquid helium.

Around 1970, Vic began to study the Kondo problem, which led to his investigations of the one-dimensional electron gas. In collaboration with Alan Luther, he found the exact solution of a class of model Hamiltonians and introduced methods and concepts that have become a paradigm for current approaches to strong-correlation effects in electronic systems. In particular, Vic and Luther introduced the separation of spin and charge, a concept whose implications beyond one dimension are now a central theme in condensed matter theory. For that joint work, they received the American Physical Society's Oliver E. Buckley Prize in 2001.

The discovery of high-temperature superconductivity in quasi-two-dimensional copper oxide compounds in 1986 initiated a highly productive period in Vic's career. One of his first contributions was to derive for the copper-oxide planes an extended three-band Hubbard model, from which he showed that the charge carriers are holes in 2*p* states of oxygen. Shortly thereafter, Vic began a prolific collaboration with one of us (Kivelson) by noting that holes doped into an antiferromagnet, as in the cuprates, have a tendency to phase separate. The long-range part of the Coulomb interaction frustrates macroscopic phase separation and leads to a state that can be viewed as a mixture of insulating and conducting regions on intermediate length and time scales. That idea provided a useful perspective for understanding various types of order—especially the stripe order found in certain high-temperature superconductors, nickelates, and manganites—and more general indi-