

bra based and nonmathematical. (Previous surveys only distinguished between calculus-based and algebra-based courses.) Combined enrollment in the three types in 1990-91 was 325 000, with just over 70 000 in the nonmathematical courses. Engineering majors accounted for about 60% of the enrollment in the calculus-based courses, potential physical science majors for about a 25% of the enrollment—roughly 35 000 students, as in previous years.

The survey report contains detailed information on attrition in undergrad-

uate physics. Overall, of those registering as physics majors in their freshmen years, about two-thirds wind up getting their bachelor's degrees in physics. PhD-granting institutions have the highest retention rates and four-year colleges the lowest.

For copies of the full report on enrollments and degrees, which includes 13 tables and covers astronomy as well as physics, write to the AIP Division of Education and Employment Statistics, 335 East 45 Street, New York NY 10017.

—WILLIAM SWEET

more the importance of refocusing and repositioning technology periodically so that work remains "in the mainstream of technology."

—WILLIAM SWEET

EUROPEAN OPTICAL SOCIETY IS ESTABLISHED

Consistent with the general trend toward building and strengthening European institutions in physics (as, indeed, in all areas), a European Optical Society has been established. It represents a merger of the optics division of the European Physical Society and the European Federation of Applied Optics (EUROPTICA).

In 1987 EUROPTICA and the European Physical Society's optics division agreed with the International Society for Optical Engineering (SPIE) to organize a series of European optics conferences. The new society was formally founded at the fourth and most recent of those conferences, held in March in The Hague.

The founding members of the European Optical Society are 22 individuals representing the boards of 14 national optics societies in 13 countries. The society's program is to include sponsorship of meetings, publication of a journal and establishment of relations with other organizations serving similar objectives.

Concurrently with its foundation, the society concluded a "joint venture agreement" with SPIE, calling for SPIE to provide logistical support for a series of European Optical Society conferences, seminars and exhibits. SPIE assumes all financial risk for the first two years of the agreement, and after that profits will be divided between the two organizations.

The first meeting jointly sponsored by EOS and SPIE will be an international symposium on environmental sensing, which is to take place in late June next year in Berlin. The joint venture board also has announced three other events for 1992: a holographics meeting to take place at Imperial College in London in July, a conference on interconnects and packaging in Salzburg in late June, and a symposium on optical system design in late October in Berlin, cosponsored by the Optical Society of America.

Next year EOS will inaugurate a two-part optics journal. Part A, *Pure and Applied Optics*, will be published bimonthly by Britain's Institute of Physics. The editor is Mario Bertolotti of the University of Rome.

The Optical Society of America has

MAYO SUCCEEDS ROSS AS PRESIDENT OF AT&T BELL LABS

John S. Mayo, previously the senior vice president for network systems and network services at AT&T Bell Labs, has been named president of Bell Labs. He succeeds Ian Ross, who has been given the assignment as president emeritus of helping build AT&T's position in global markets. According to a press release issued by the company, Ross will work closely with AT&T Vice Chairman Randall Tobias, who has been "charged with accelerating all aspects of AT&T's globalization initiatives and plans."

Traditionally AT&T executives have retired rather punctually at age 65, and a retiring executive has customarily served for a transitional year or two as a kind of chairman overseeing his successor's work. What makes Ross's new assignment a little different, Mayo told PHYSICS TODAY in a telephone interview, is that Ross has the special mission of assisting in the company's globalization drive rather than the general task of overseeing his successor.

Mayo said that in addition to supplying equipment and providing long-distance communications overseas, the company needs to make "a more integrated thrust" in national and regional markets. What he seemed to be talking about was the design and construction of whole communications systems in regions such as Eastern Europe or in less developed countries.

Mayo has spent his whole career at Bell Labs, in a series of increasingly responsible positions. After earning his bachelor's, master's and doctoral degrees in electrical engineering at North Carolina State University in the early 1950s, he joined the lab in 1955 as a member of the technical team that built the first transistorized digital computer. Subsequently he

participated in the work that established the feasibility of digital transmission in local telephone networks, and he helped develop high-speed pulse-code modulation systems. He also worked on the Telstar satellite program, sonar, the development of the first long-distance digital switching systems, and a wide range of microelectronics technologies.

Mayo said he hopes, in the four years he expects to serve as president, to help the lab continue adapting to the imperatives of the competitive world, building on its position as the world's premier laboratory in electronics and communications. To that end, he said, it will be necessary to speed up both the rate of innovation and the rate of bringing innovations into the marketplace. He said he would do that by finding ways "to augment or outright replace the serial handoff processes of the past," so that many or all phases of the research and development process are done in parallel rather than sequentially.

We asked Mayo whether parallel R&D would require the company to be absolutely certain a line of work was actually going to reach the marketplace before it committed broad resources to supporting the work. He said not necessarily. Rather, the company would have to be willing to take a little more risk out front, do a lot of field testing and prototyping all along, and stop unsuccessful endeavors early, using the marketplace "to filter out what's good and what's no good."

Commenting on our recent report about Bell Labs (June, page 97), which discussed the implications for basic research of the shift at Bell Labs toward software and applications, Mayo said he would have emphasized

not been party to the negotiations that led to the foundation of the European Optical Society. OSA has been expanding its European presence, however, and this fall will sponsor for the first time a topical meeting in Europe—a meeting on nonlinear guided wave phenomena that is to take place in Cambridge, England, in September.

(In 1987 the OSA board authorized the society to hold meetings abroad provided they were cosponsored by a national scientific society in the host country and by an international scientific organization. This year the board suspended for two years the requirement that meetings be cosponsored by a national society, a decision taken "in light of a potential European agreement that would make it difficult for individual national optical societies to cosponsor meetings," as *Optics and Photonics News* explained in April.)

The first president of the European Optical Society is Hermann Walter of Rodenstock Optik GmbH in Munich, Germany. Further information about EOS can be obtained from Françoise Chavel, c/o Institut d'Optique, BP 43, 91406 Orsay Cedex, France.

SMITH RECEIVES 1991 GEMANT AWARD FROM AIP

The American Institute of Physics has selected this year's Andrew Gemant Award recipient: Cyril Smith, an Institute Professor emeritus of MIT. Smith was chosen for his "pioneering use of solid-state physics in the study of ancient art and artifacts to reconstruct their cultural, historical and technological significance." The Gemant Award is given each year to a physical scientist who has helped further the public's understanding of physics.

Smith's research has focused on physical metallurgy and the role of interface energy and topology in the structure of polycrystalline materials. Through his scientific research, he developed an interest in the field's historical beginnings. His study of ancient art and artifacts led Smith to propose that many early metallurgical techniques were developed for decorative purposes and that only later were their more practical uses recognized. Smith has also sought out and helped translate into English some of the classical works on metallurgy, dating from the Middle Ages on.

After receiving a DSc in metallurgy

from MIT in 1926, Smith worked in industry and then for the University of Chicago. From 1943 to 1945 he was at Los Alamos, working on metallurgy for the first atomic bomb. He joined the MIT faculty in 1961.

OPTICAL SOCIETY NAMES EDUCATION, TECHNICAL OFFICERS

The Optical Society of America has named William S. Rodney to be its education program manager and Howard Rausch to be its technical director. Both positions are newly created.

Rodney, who is responsible for developing and managing OSA's programs in pre-college, college and professional education, served in the physics division of the National Science Foundation as head of the nuclear physics program from 1963 to 1986. Prior to that he worked as a physicist for the Air Force's Office of Science Research and the National Bureau of Standards. Rodney received a PhD in physics from Catholic University in 1955.

Rausch, the former publisher and editor of *Lightwave—The Journal of Optics*, is in charge of enhancing OSA's engineering and international ventures and other technical activities, including meetings and education. Rausch founded *Lightwave* in 1984 and sold it to PennWell Publishing five years later. From 1969 to 1979 he published and edited *Laser Focus World*. Rausch received a BA from Syracuse University in 1950 and during the 1960s he worked for *The New York Times*, *The Wall Street Journal* and McGraw-Hill.

OSA, which now has over 11 000 members, recently celebrated its 75th anniversary.

IN BRIEF

A European Astronomical Society has been founded. It is intended to be primarily a society representing individual members, though national or language-based societies can affiliate. The chairman of its organizing committee is L. Woltjer, the director general of the European Southern Observatory in Garching, near Munich in Germany.

An International Union of Materials Research Societies has been formed, with R. P. H. Chang of Northwestern University serving as president. The union is in an early organizational phase, but the ultimate intention is to

become an organization like the International Union of Pure and Applied Physics, with membership in the International Council of Scientific Unions.

AIP's *Physics of Fluids A* no longer will have page charges, starting in January 1992. (AIP's *Review of Scientific Instruments* and its *Journal of Mathematical Physics* already have no page charges.)

Poland has joined CERN as the organization's 16th member state and as the first Eastern European country to obtain full membership.

A team has been named to manage the US contribution to the six-year engineering design phase for the International Thermonuclear Experimental Reactor, a quadrilateral project involving the US, the European Community, Japan and the USSR. The leader is Alexander J. Glass of Lawrence Livermore National Laboratory, and the other members are Charles C. Baker of Oak Ridge National Laboratory, James N. Doggett of LLNL and Douglass E. Post of the Princeton Plasma Physics Laboratory. The engineering design phase for ITER is expected to cost about \$1 billion, and work is to be divided among three sites: San Diego (US), Garching (Germany) and Naka (Japan).

An exhibition devoted to the European Space Agency's space science missions will be at CERN's Microcosm until the end of the year. The exhibition features scale models, films and large photographs associated with Giotto, Ulysses and the Infrared Space Observatory. Microcosm is a permanent exhibit representing the work of CERN that was established at the lab's reception building about a year ago.

Britain's Institute of Physics is publishing the English-language *Journal of the Moscow Physical Society*, the first issue of which appeared in February 1991. L. V. Keldysh of the Lebedev Physical Institute in Moscow is the editor. An annual subscription is \$215.00, and a free sample copy can be obtained from IOP, Techno House, Redcliffe Way, Bristol BS1 6NX, England.

Arnold Wolfendael, a professor of physics at the University of Durham, is Britain's new astronomer royal. He succeeds Francis Graham-Smith of the University of Manchester. ■