

ied physics at the Technical University of Darmstadt in Germany, where he obtained a bachelor's diploma in 1963 and a PhD in 1965. From 1964 to 1965 he was an assistant in the Institute for Technical Nuclear Physics at the Darmstadt Technische Hochschule, and from 1965 to 1968 he was a research associate at the High Energy Physics Laboratory at Stanford University. From 1968 to 1972 he was a research associate at the Stanford Linear Accelerator Center.

—WILLIAM SWEET

NEW LAB CONTRACTS CONCLUDED BETWEEN DOE AND U OF CAL

Last November the US Department of Energy and the University of California concluded new five-year contracts governing the university's management of three major national labs, Lawrence Berkeley, Los Alamos and Lawrence Livermore—a matter that has been the subject of considerable contention within the University of California community in years past. Now that the ink is dry on the agreement, it seems apparent that the university stands to benefit from several novel aspects of the accord, and the labs may do better as well.

The involvement of the University of California in nuclear weapons work has always rubbed some university people the wrong way, and the contract negotiation cycle usually has been punctuated in recent decades by protests and calls upon the university to get out of the business. As recently as 1990 the faculty senate urged the regents to disassociate from the two weapons labs, a recommendation the regents chose to ignore.

Insiders to the negotiations say that the new agreement is not a standard Federal procurement contract. Although it is much closer to a standard Federal contract than the previous ones were, it contains many unique features that other national labs would be only too glad to obtain as well. At the same time, all parties to the new agreement describe it as "win-win" for both the university and DOE.

The contracts:

▷ codify protection of intellectual freedoms associated with research at the labs, a matter that sometimes gave rise to disputes in the past

▷ maintain the traditional public service relationship between the university and DOE on a no-gain, no-loss basis

▷ establish a high-level advisory

committee to counsel the university on laboratory management and strategic directions and on the quality of scientific and technical work being performed

▷ set up a unit within the office of the university president to strengthen oversight of procurement and property management, environmental health and safety, and so on, based on agreed-upon performance standards

▷ create a procedure for resolving issues between the labs and the university and DOE

▷ and, not least, encourage more directed research at the labs by the university.

The university's allowance from DOE for overhead and management, which in the past has been negotiated yearly, most recently was about \$12–13 million. The new contracts provide for close to \$30 million, with \$14 million reserved for management of risks associated with regulatory liabilities to which the university is exposed under the new contracts. If not required for meeting added expenses of this type, the funds would be available for university-directed research.

Naturally there is some apprehension at the labs that the new administrative unit in the president's office may turn out to be a major pain in the neck. Robert Kuckuck, the Livermore veteran who heads the office, says that it will have a "corporate headquarters/gatekeeper function" and will stress "performance-based management" and a "self-assessment/self-correction cycle."

Charles Shank, the director of Lawrence Berkeley, worries that new administrative requirements will be more onerous for LBL than for the weapons labs, which have larger budgets and therefore can handle increased overhead costs. Still, Shank feels the new conflict resolution process is a big plus.

Shank does not expect the new contract arrangements to have much impact on the way LBL redefines its mission, something he says the lab already is doing "in response to changing national expectations for science." At Livermore the situation could be the reverse. Robert Borchers, assistant to the LLNL director for university relations, points out that the new contract is "permeated with the idea that there ought to be closer scientific collaboration between the university and the labs as classified programs diminish and programs having to do with economic competitiveness come to the fore."

In the past year LLNL director John Nuckolls has established an

expanded nonproliferation program under Robert Andrews, an energy program under David Baldwin and an environmental program under James Davis. Borchers expects to see an expansion of university-laboratory research institutes in areas such as environmental science and risk assessment, accelerator mass spectrometry, and lasers and optics.

In addition to Kuckuck's administrative unit, which will employ about 30 people, the university also continues to have a unit in the president's office responsible for programmatic affairs at the labs. Currently in charge of the unit is acting head Tommy Ambrose, who presumably will report to Walter Massey. Massey, who leaves the National Science Foundation this month (see page 74), has been named senior vice president and provost for the whole University of California system.

Sidney Drell, deputy director of the Stanford Linear Accelerator Center, heads the Council on the National Laboratories as well as its subpanel on national security affairs, which will advise the university's president, Jack Peltason. Drell says creation of the council is "a very significant step, particularly because the council has broader oversight responsibilities with respect to strategic planning than the university has ever previously undertaken." Drell thinks this structure deserves to be emulated at other major labs.

According to its charter, the council has three main functions: to review strategic plans of the labs as they change their research agendas; to review the scientific and technical quality of work undertaken at the labs; and to foster an atmosphere conducive to scientific inquiry and the development of new knowledge.

—WILLIAM SWEET

CHINA PRESSED ON RIGHTS IN CHANGED POLITICAL CONTEXT

In his acceptance speech at the Democratic convention last July, in the one paragraph devoted to foreign policy, candidate Bill Clinton said he would no longer "coddle tyrants, from Baghdad to Beijing." It was not lost on human rights activists that of the four countries mentioned in that single short paragraph, one was China.

Evidently it was not lost on the Chinese government, either. On 17 February the government announced it was releasing Wang Dan, who had been first on the list of 21 most-

wanted reform leaders following the Tiananmen Square crackdown, and two other political prisoners, Zhu Hongsheng and Guo Heifeng. Under the circumstances, physicists in the US and from the US are bound to step up their efforts on behalf of the political prisoners in the People's Republic of China whom they have been most concerned about.

Case Number 1 is that of Liu Gang. As a graduate student in physics at Beijing University, Liu was a leader of the student movement that culminated in the confrontation at Tiananmen Square. He was an organizer of so-called "democracy salons," in which he espoused a nonviolent evolutionary approach to change. Sentenced to six years imprisonment in a labor camp in February 1991, he has been tormented and mistreated, resulting in serious health problems. Despite the precariousness of his condition, he has refused to recant and has continued to put himself forward as a catalyst, organizing for example a hunger strike at Beijing Number 2 Prison on the first anniversary of Tiananmen.

According to Fang Lizhi, the astrophysicist who did much to inspire the democracy movement in China (see *PHYSICS TODAY*, June 1988, page 67), Liu Gang was third on the PRC's list of 21 most-wanted activists. Fang, who is now at the University of Arizona, and his wife, Li Shuxian, who also is a physicist, already were acquainted with Liu Gang when Liu was an undergraduate at the University of Science and Technology at Hefei, where Fang was vice president. While Liu was not politically active when he first took courses from Li Shuxian at USTC, he is seen in some sense as a protégé of Fang.

Conference and petitions

At a controversial semiconductor conference held in Beijing last summer (*PHYSICS TODAY*, May 1992, page 55), a number of physicists dedicated their papers to imprisoned Chinese scientists. Horst Stormer, the director of physical research at AT&T Bell Labs, and Matthias Scheffler, director of the Fritz Haber Institute in Berlin, expressed serious concern about the human rights situation in their plenary talks the opening day.

About 75 participants at the conference signed a petition calling for the release of Liu Gang, which was sent to Premier Li Peng. Last fall, more than 350 US-based physicists signed a second petition calling upon the Chinese government to release Liu and other persecuted prodemocracy activists. The petition was drafted by the Com-

mittee to End the Chinese Gulag and was circulated with assistance from the American Physical Society's Committee on the International Freedom of Scientists.

The Committee to End the Chinese Gulag, headed by Richard Dicker in New York, includes as cochairs Fang and Yuri Orlov, the Cornell physicist and human rights activist from the former Soviet Union, among others. The committee has compiled a list of close to 1600 political prisoners in the PRC, the overwhelming number stemming from the Tiananmen democracy movement alone.

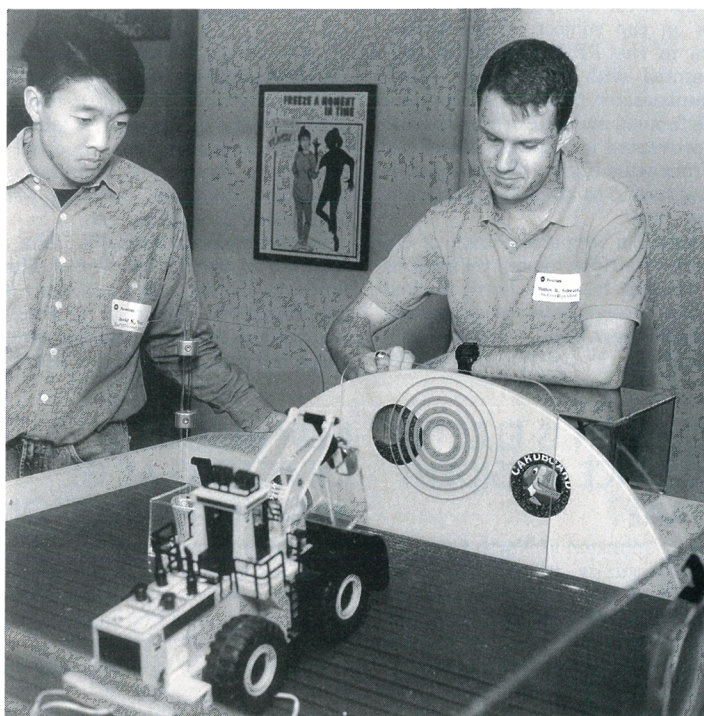
A similar list compiled by Amnesty

International has about 700 names. Staff for the committee and for Amnesty International agree that it is impossible to count accurately or even fathom the total number of prisoners suffering mistreatment and deprivation of legal rights in the PRC's vast system of penal colonies, labor camps and reeducation centers.

Actions ahead

CIFS has scheduled a human rights session for 22 March at this month's APS meeting in Seattle, where Chinese abuses are sure to be addressed. Fang expects to speak there, and it is anticipated that there will be oppor-

Lederman Science Education Center Opens



High school students manipulate interactive exhibit on radioactivity at the Lederman Science Education Center, which opened last fall at Fermilab as a place for Chicago-area students to learn about science in general and particle accelerators in particular. Classes usually spend a half day at the center, where students walk through a small but elegant series of demonstrations, most of which are of original design. Several use balls and tracks to introduce the principle of acceleration; a computer simulation of detector results gives students the opportunity to choose between four possible events (W, Z, jet and junk); another, employing balls on a circular table and a variety of barriers hidden under a shield in the middle, invites them to make inferences about types of collisions. In this photo, a remote-controlled crane carries materials to a Geiger counter, demonstrating the relative radioactivity of everyday household objects such as Fiestaware (a dinnerware line) and "No Salt" (a salt substitute). The center also includes a wet lab, a teacher resource center, a computer/technology room and a movie theater, where a film based on Philip Morrison's *Powers of Ten* is currently shown.

tunities to voice concerns directly to Chinese participants. Another petition is planned, and there may be a chance to speak directly with Clinton Administration officials.

Joseph Birman of the City College of New York, the current chair of CIFS, expresses confidence that the new Administration "will bring to the situation the seriousness [that we feel is appropriate]."

The State Department's assistant secretary for human rights has yet to be appointed at this writing, but Winston Lord has been named Assistant Secretary for Far Eastern Affairs and Morton Halperin may be made an assistant secretary in the Pentagon, where he would preside over a newly created human rights office.

Lord, a former ambassador to China, has been outspoken in recent years on the subject of democratic rights in the PRC, and he is well acquainted with Fang Lizhi. Lord was ambassador to China at the time of the famous incident in which Fang was prevented by Chinese secret police from attending a 1988 banquet in Beijing hosted by then vice president George Bush.

Halperin, a very sharp critic of US support of authoritarian regimes in past decades, has (like Lord) worked in senior foreign policy positions for both Republican and Democratic governments.

—WILLIAM SWEET

JOHNSTON IS ELECTED 1993 VICE PRESIDENT OF AAPT

Karen L. Johnston of North Carolina State University is the new vice president of the American Association of Physics Teachers. She succeeds Howard G. Voss, a physics professor at Arizona State University, who is now AAPT president-elect. The current president is Reuben E. Alley, a professor of electrical engineering at the US Naval Academy in Annapolis, Maryland. The officers began their one-year terms in January following the association's meeting in New Orleans.

Johnston earned a BS in teaching in 1971 and an MS in physics in 1974 from Sam Houston State University. After earning a PhD from the University of Texas, Austin, in 1979, Johnston became an assistant professor of physics at Memphis State University. In 1982 she joined the faculty at North Carolina State University, where she is now a professor of physics. Johnston's research in physics education has dealt primarily with



Karen L. Johnston

the development of problem-solving skills using microcomputers and student learning in the physics laboratory. She has also been involved in developing physics curriculums and educating graduate teaching assistants for academic careers.

In other election results, John W. Layman of the University of Maryland was elected AAPT secretary and Jennifer Bond Hickman of Phillips Academy in Andover, Massachusetts, was elected to the executive board.

NEW RESEARCH DIRECTORS AT GE AND NEC-PRINCETON

Some telling commonalities and contrasts are to be found in the selection of new research chiefs at General Electric (Schenectady) and the NEC Research Institute (Princeton).

Both Lewis S. Edelheit, the new senior vice president for corporate research and development at GE, and C. William Gear, the new president of NEC-Princeton, are products of the University of Illinois, Urbana-Champaign—testimony to the university's outstanding position in solid-state physics, applied mathematics and computer science.

Yet Edelheit takes the reins at a company that has had to divest itself of many traditional activities in recent years, while NEC, at least until very recently, has been able to support ever more far-flung operations, including arcane research conducted in distant countries. It would not be much of an exaggeration to say that if GE still is electric, its research is not quite so general as it once was. Japan's NEC,

on the other hand, has become so general that it can pay New Jersey researchers good salaries to study things like chess and the game go.

That said, GE's reputation in the physics community as a place where research has declined is not altogether warranted, according to Edelheit. While basic research, especially in condensed-matter physics, has been cut, Edelheit says the total number of PhD scientists now at the corporate research lab—nearly 400—is larger than in 1985, when the number was 355. Edelheit says GE now puts less emphasis on generation of new proprietary knowledge and more of a premium on the ability to adapt new knowledge rapidly to product needs.

"Technology available to put into products is exploding," Edelheit observes, "but I can't think of anything anywhere that's still controllable in terms of being proprietary. So everybody is drawing on a common pool, and research has to be very focused to leverage knowledge out of that pool."

Medicine in, aerospace out

Edelheit, who was manager of the Electronic Systems Research Center at GE R&D before being named senior vice president for research, earned a BS (1964), MS (1965) and PhD (1969) at the University of Illinois. He started his career at the GE research lab, but in 1976 he moved to GE Medical Systems in Milwaukee, where he worked on a new computed tomography scanner developed by GE and formed and managed the new Applied Science and Diagnostic Imaging Laboratory. He also served as general manager of the Computed Tomography Programs Department.

In 1986 Edelheit left GE to become president and CEO of Quantum Medical Systems in Seattle. He remained in that position after Quantum was acquired by Siemens but returned to GE in 1991 to take charge of electronic systems research.

Edelheit succeeds Walter L. Robb, a chemical engineer who is 14 years his senior. Robb initially worked on nuclear fuel reprocessing and isotope separation at the Knolls Atomic Power Laboratory, but in 1968 he was made manager of the GE Medical Venture Operation and in 1973 general manager of GE's Medical Systems Division in Milwaukee. Robb became a vice president of GE in 1974 and a senior vice president in 1983, and in 1986 he became head of the R&D Center, succeeding Roland Schmitt.

The careers of both Edelheit and Robb are indicative of the major