

11/23/98

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NOTE: A downloadable photograph of Burton Richter, as well as biographical information on him, is available on the web at <http://www.slac.stanford.edu/grp/do/people/richter.html>

Nobel Laureate Richter to step down as director of SLAC

Burton Richter, Nobel Prize laureate and a pioneer of the colliders that now dominate high-energy physics, announced today that he will step down Aug. 31, 1999, as director of the Stanford Linear Accelerator Center after 15 years in the position.

Richter, 67, is the Paul Pigott Professor in the Physical Sciences and will remain on the Stanford faculty, conducting research and working on science policy. He also will take office as president of the International Union of Pure and Applied Physics.

"All the world knows Burt Richter's qualities as a physicist because they were recognized by the Nobel Prize," said Stanford President Gerhard Casper. "Stanford and I know his qualities as an extraordinarily able, dedicated, and tenacious director of the Stanford Linear Accelerator Center and as a citizen of the university. He has always performed with good judgment, integrity and candor. My almost seven years of working with Burt have been thoroughly rewarding."

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Casper said that he would begin the process of selecting the next director of SLAC, which is operated by the university for the U.S. Department of Energy.

Martha Krebs, director of the Office of Science at the Department of Energy, said that Richter has been a "leader among leaders" of DOE facilities and has helped provide direction for many of the labs, not just SLAC.

"I can always depend on Burt to speak the truth," she said. "When he's not charming, he is winning."

Richter won the 1976 Nobel Prize in Physics, along with Samuel Ting of MIT, for pioneering work at Stanford on the development of a new kind of particle collider, which resulted in the discovery of the Psi/J particle. He came to Stanford as a post-doctoral student in 1956, directly from getting his Ph.D. from MIT, and rapidly moved up the ladder: assistant professor in 1960; associate professor in 1963, the year he joined SLAC; and professor in 1967. He took over as director of SLAC in 1984 upon the retirement of Wolfgang Panofsky.

"A lab director's job is very different from that of a scientist," Richter said. "The job is to get resources for other people to do great science, and to keep them moving in the direction you think is most productive. You must always make sure that there is a menu of options for the lab and its users so they can remain on the frontier of science. I think I've done a good job of that."

Part of the job has been dealing with budgets, both good and bad, and constant travel to Washington, D.C. Asked if he approached his change of roles with relief, sadness or a sense of freedom, Richter responded, "Some of all of those."

More important, he said, was the SLAC he would leave to his successor.

"I've always believed," Richter said, "that the lab has three time scales: now, when you must ensure high quality; the next five years, when you are preparing the tools for the next wave of work; and 10 to 15 years from now, when you have to be doing

the R&D to be positioned for whatever science needs, and finances and politics will allow.

"We have a full menu of new opportunities in all three time scales. The B-Factory is just starting up and is going to be the premier facility in the lab for the next five years. The synchrotron light source is beginning an overhaul that will improve its performance significantly and stimulate valuable research for some time. We have, in the R&D phase, a linear collider 10 times the size of our current one. Faculty efforts to do non-accelerator physics, for example, particle physics in space, are getting off the ground, so to speak. And we are beginning R&D to bring together the technology of the linear accelerator of the high-energy physics division with X-ray techniques of the synchrotron division to make X-ray lasers that will revolutionize fields from chemistry to biology to medicine.

"So, all three time lines are in good shape," he said, "and it is a good moment for someone new to take over, see them all through, and prepare for the next round."

Sidney Drell, SLAC's deputy director emeritus, as well as a world-renowned theoretical physicist and adviser to several U.S. presidents on the comprehensive nuclear test-ban treaty, said Richter's successor would start from a strong position.

"Under Burt's direction, SLAC has excelled at research fields it has helped advance, especially the linear collider Burt pioneered," he said. "He also has built a vision for the future with the newly dedicated B Factory and ongoing efforts, in collaboration with other American institutions and Japanese physicists, for new frontiers with electron-positron colliders on the ground and the large aperture gamma-ray telescope in space."

Richter's role as a builder of the tools of high-energy physics began in the 1950s, when he joined with Gerard O'Neill, W.C. Barber and Bernard Gittelman to construct the first colliding beam device. "It took us about six years to make the beams behave properly," Richter said, but when they did, the device became the ancestor of all the colliding beam storage rings to follow. All high-energy physics accelerators now being

developed are colliding beam devices.

As director, Richter has overseen the conversion of SLAC's own two-mile-long accelerator from a machine that fired particles at a fixed target into a linear collider that brought two beams into head-on collisions. The conversion was begun in 1983, with the first physics experiments conducted in 1989.

Richter said much of SLAC's success , which includes work that led to Nobel Prizes for him, for Richard Taylor in 1990 and for Martin Perl in 1995 , is a direct result of its being a part of Stanford University.

"SLAC is very different from any other federal lab because it is integrated into the university," Richter said. "We have 35 Stanford faculty members as part of our lab, and many more using our facilities. We are a national, a world, facility , at last count, we had 2,800 users, and of those, only about 10 percent are from Stanford. To me, however, for a lab like this to be effective, it has to have leadership inside to develop opportunities for the broad user community. And SLAC has always been a leader thanks to the faculty and staff involved in our programs."

Among the opportunities SLAC developed under Richter's directorship was the integration of the Stanford Synchrotron Radiation Lab in 1994.

"With Burt's strong support, SSRL's capabilities grew enormously once it became a SLAC division," said Arthur Bienenstock, former director of SSRL and now associate director for science for the federal Office of Science and Technology Policy.

In the future, Richter said, very big science projects will require partnerships that extend beyond national borders.

"All big-machine physics projects, including our own dreams of a next-generation linear collider, will likely have to be international projects," he said. "And international projects are difficult. They require not only scientific skills but political skills. You must get governments together, and governments don't always want to get

together."

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