

SYNCHROTRON ON

CROWN JEWELS OF CORNELL RESEARCH



Robert Richardson

In this edition of *Connecting with Cornell*, the featured subject is the complex of research facilities buried underneath Upper Alumni Field: the Laboratory of Elementary Particle Physics (LEPP) and Cornell High Energy Synchrotron Source (CHESS). Although the science of the two organizations is quite different, the

two facilities share space and the very elaborate equipment at the Wilson Laboratory.

Starting in 1965 under the leadership of Robert R. Wilson, the members of LEPP built the present synchrotron. The history of the laboratory, originally called the Laboratory of Nuclear Studies (LNS), goes back to the end of World War II, when many experimental physicists returned to Cornell from the war effort. The group developed a worldwide reputation for the originality of its science and the efficiency of its management of scientific funds and resources.

AT THIS JUNCTURE, I WISH TO CONGRATULATE THE MEMBERS OF LEPP AND CHESS FOR THEIR REMARKABLE PAST ACHIEVEMENTS AND WISH THEM WELL WITH THEIR AMBITIOUS FUTURE PLANS.

Whenever the direction of motion of a charged particle is changed, energy in the form of photons is given up. At Cornell we have used this as the basis of the x-ray facility, CHESS. For 30 years there has been a symbiotic relationship between the science of elementary particles conducted by LEPP and studies of the structure of matter conducted by CHESS. The funding of the research by the federal government has been quite generous. Since 1990 the National Science Foundation (NSF) and the National Institutes of Health (NIH) have invested more than \$500 million in the synchrotron infrastructure at Cornell!

The particle physics research at the Cornell synchrotron will be ending in 2008 with the grant cycle from NSF. Experimental particle physics research will be moving to the much larger high energy physics facility in Geneva, Switzerland. Meanwhile, a very ambitious

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new x-ray laboratory, expanding upon the present underground facility, is planned for Wilson Laboratory. If all goes well, construction of the new laboratory, the Energy Recovery Linac (ERL), will begin in 2012.

At this juncture, I wish to congratulate the members of LEPP and CHESS for their remarkable past achievements and wish them well with their ambitious future plans.

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