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Governor Announces $12 Million for New High Tech Project at Cornell

New Synchrotron Will Use High-Powered X-Rays for Research in Biology, Medicine, Nanotechnology, and Materials Science.
Funding Continues New York's Investment in the Growing High Tech Economy

Governor George E. Pataki today announced $12 million in capital funding to Cornell University to support the development of a state-of-the-art Energy Recovery Linac (ERL), an extraordinary new x-ray source that will greatly expand scientific research capabilities. The Governor was joined at the event by Cornell Vice Provost for Research Robert C. Richardson, ERL Principle Investigator and Cornell professor of physics Sol Gruner, and a group of enthusiastic students from Ithaca's Sciencenter.

The Energy Recovery Linac is a new x-ray source based on accelerator physics and superconducting microwave technology that will be about 1,000 times brighter than current machines. This project will be valuable for research in biology, medicine, and materials science, as well as nanotechnology and new areas of science that will be critical to our national competitiveness. The State funding puts Cornell in a strong position to compete for more than $400 million in federal funding for a next generation x-ray source.

"Scientific advancements have always shaped our lives, generating new industries and creating jobs, improving our health, and providing a better understanding of the world around us," Governor Pataki said. "Cornell is a national and global leader in technology, and along with other institutions in our State's premier educational system, they are playing a critical role in building our high tech economy. I am pleased to provide State support for this latest project, and look forward to the progress being made through our strong partnerships with Cornell and other universities."

Image 1. *During Saturday's announcement, New York Gov. George E. Pataki and Cornell representatives pose with young students from the Ithaca, N.Y., Sciencenter - a public science-education and museum facility with programmatic links to Cornell. The hats they are wearing read: "ERL Cornell, Physics is Cool." Back row, left to right: Charles Trautman, executive director of the Sciencenter and Cornell adjunct professor; Robert Richardson, Cornell vice provost for research; Gov. George Pataki; and Cornell Professor Sol Gruner, director of CHESS and Principal Investigator for the ERL. Front row, left to right: Bernard Anderson 10; Colden Kimber, 9; Jake Karpovage, 10; Quinn Bissen, 9; and Drew Bissen, 7. (Credit: Robert Barker/Cornell University)*

Cornell President David J. Skorton said, "This funding from the State is a major investment in America's scientific leadership and U.S. competitiveness. The fruits of the project will benefit New York's high-technology economy, basic research, and science education."

State Senator George H. Winner Jr. said, "This project is a great investment for the State of New York. I toured the facility a little over a year ago and was more than impressed with Cornell's world- renowned research expertise in this field. I am pleased and excited that Governor Pataki has found this project equally important and am glad to see the ERL project moving forward."

Assemblywoman Barbara Lifton said, "This State award will position Cornell to continue as a national leader in research. Cornell's current $561.3 million research program is an important engine in economic development for our region."

By enabling investigations of matter that are impossible to perform with existing x-rays, these increased capabilities will enhance our understanding of the properties and atomic composition of matter.

The State's $12 million appropriation will be used over four years for civil engineering feasibility studies, and technology and infrastructure development. Cornell has invested $10 million in this project, with additional investments planned. This combined funding, along with the commitment it illustrates, is vital to ensuring the Cornell can effectively compete nationally for this project.

The project also will help to train students – the next generation of scientists – who will use their knowledge of cutting-edge ERL technology in their future employment with government, academia, or private enterprises. The existing national x-ray facility at Cornell is already providing opportunities for students from colleges and universities in New York and from institutions across the country and around the world. The Sciencenter students at today's announcement have been learning about elementary physics and the important research being done at Cornell's Wilson Synchrotron Lab.

In 2005, the National Science Foundation awarded Cornell $18 million for prototype development of vital components of the machine at the university's Wilson Synchrotron Lab. The ERL would expand the existing underground electron storage ring, which has been operating on campus since 1979. The prototype design is nearly finished, with construction and testing expected to be completed in 2008.

A full-scale facility, based on the prototype findings, is in the early design stage and will be submitted to the National Science Foundation toward the end of 2007. If successful, the university expects to be awarded more than $400 million in federal funding for construction and equipment to build the ERL, along with annual operating support of $35-$40 million. It would take about five years to build the facility once funding is approved.

The ERL would replace the existing Cornell High Energy Synchrotron Source (CHESS), which currently provides synchrotron radiation facilities for research in physics, chemistry, biology, and environmental and materials sciences. CHESS has been in use since 1979 and has been the site for many of the seminal developments in the synchrotron radiation field.

If Cornell wins the competition for the ERL, it will bring in more than $1 billion in federal funds to New York State in the form of construction, equipment, operational support, and associated research projects.

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