

## CORNELL CHRONICLE DRAFT

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Pataki brings \$12 million more for new accelerator to create world's brightest X-rays

Making his second visit to the Cornell campus in a week, New York Gov. George Pataki again brought funding, this time \$12 million for preliminary work on the proposed Energy Recovery Linac (ERL), which will help create the brightest source of X-rays in the world.

Construction of the ERL, in a 1.3-kilometer-long tunnel under university parking lots, is scheduled to begin at the end of this decade, at an estimated cost of about \$400 million.

Cornell scientists are currently developing critical components of the ERL, and in 2008 expect to complete construction and testing of a prototype, for which the National Science Foundation (NSF) has provided \$18 million and Cornell \$10 million.

"But there's still a gap," Pataki said during a brief ceremony in the Duffield Hall atrium Aug. 19. "So the state is providing a \$12 million capital appropriation."

The money will help support the engineering design of the ERL, according to Sol Gruner, Cornell professor of physics and director of X-ray science for the Cornell Laboratory for Accelerator-based Sciences and Education (CLASSE), which will oversee the project. "That's the kind of thing the NSF doesn't support," Gruner said.

In the linac, or linear accelerator, electrons will be pushed to almost the speed of light, then fed into the Cornell Electron Storage Ring (CESR). At various points around the ring, facilities of the Cornell High Energy Synchrotron Source (CHESS), will convert them into high-energy X-rays. CHESS will become what Robert Richardson, Cornell vice provost for research, who shared the podium with Pataki, called "the brightest X-ray source in the history of the world."

With the ERL in operation, CHESS will provide X-ray beams that can be focused down to one nanometer (one-billionth of a meter) in diameter to analyze the structure of biological molecules and advanced materials. It will create pulses so short that researchers expect to use them to make movies of chemical reactions that take place in tiny fractions of a second.

The \$400 million spent on the ERL, Pataki said, will attract another billion dollars in investments and help create a "critical mass" of science and technology that will attract more scientists and high-tech business to the state.

“I decided when I came into office that state government would take the lead and create centers of excellence for scientific research,” Pataki said. “We’re committed to being your partner as you go forward.”

During a previous visit to campus Aug. 14, Pataki announced a grant of \$50 million in funding for renovation and consolidation of the New York State Animal Health Diagnostic Center at Cornell’s College of Veterinary Medicine.