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Congressman Bishop Among Dignitaries at Dedication Ceremony For the Center for Functional Nanomaterials at Brookhaven Lab

Construction Expected to Start Later This Year; Research to Commence in 2007

- U.S. Representatives Timothy Bishop (D-New York) and David Hobson (R-Ohio), and U.S. Department of Energy Office of Science Director Raymond Orbach were among the attendees at an April 15th ceremony dedicating the area on the Brookhaven Lab site on which the Center for Functional Nanomaterials will be constructed.
- As one of five nanoscience centers funded by the Energy Department, BNL's Center will provide scientists, particularly from New York State and the rest of the Northeast, with state-of-the-art capabilities to make and study "nanomaterials."
- These materials are built atom by atom, molecule by molecule on the scale of a billionth of a meter, or a nanometer, which is 1,000 times smaller than a human hair.
- Although the Center is not scheduled to open until 2007, nanoscience research is well underway within Brookhaven's Chemistry, Material Sciences and Physics Departments, as well as at the National Synchrotron Light Source (see story below and schedule on the reverse).



A rendering of the Center for Functional Nanomaterials at BNL

3-D 'Nanocomposite' Structure Determined at Brookhaven Lab

Novel Material May Be Useful in Improved Solar Energy Cells and Flat-Screen Displays

- From medical devices and sporting goods, to roads and bridges, to satellites and spacecraft, the use of composite materials is ever increasing.
- Most products we use every day are made from a single material, such as a plastic, or from combined materials, such as metal alloys, in which individual materials cannot be distinguished. A composite material, however, is made up of two or more materials that are combined in such a way that you can still distinguish the individual materials.
- To improve the functioning of composite materials, they are now being built and studied molecule by molecule at the level of a nanometer, which is a billionth of a meter. The three-dimensional structure of one such "nanocomposite" was recently determined by scientists from the U.S. Department of Energy's Brookhaven National Laboratory and two Michigan universities.
- Using the ultra-intense x-rays provided by the National Synchrotron Light Source at Brookhaven, these researchers determine the arrangement of atoms in a "polymer nanocomposite." Meaning "many parts," a polymer is a chemical compound made up of up to millions of the same small, simple molecule.
- This nanocomposite was studied because of its promise for a variety of uses, including more efficient solar cells and flatter television and computer displays.

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Have You Heard the Good News?

Summer Sundays Are Again Open-to-the-Public Free Family-Fun Days

As the lazy, hazy, crazy days of summer are about to roll out, mark your calendar for the seven sizzling 2005 Summer Sundays super-science events offered free to the public.

On Sundays, 10 a.m. to 3 p.m., from July 10th through August 21st, Brookhaven Lab will again open its site for the world to see and experience the high-tech world of big science machines and cutting-edge research.

Sunday, July 10th: Local Forecast, National Weather

- Discover what everyone is talking about and what the National Weather Service at Brookhaven Lab is doing something about — the weather!
- Track storms with Doppler radar, computer-simulate hurricanes and tornados, learn how to be prepared for whatever the weather will bring — and watch a 3:30 p.m. weather balloon launch!

Sunday, July 17th: Medical Marvels & Brilliant Biology

- Explore the lab where human insulin was first synthesized, where L-dopa was first used for Parkinson's disease, and where the reason to wear sunscreen was discovered!
- Watch DNA sequencing and see what an electron microscope can see!

Sunday, July 24th: Creative Chemistry & New Nanoscience

- Visit the lab where the heart stress-test tracer used the world around was developed, where catalysts used in cars and for other reactions are being improved, and where brain studies are now revealing the mechanisms of addiction!
- Learn about nanoscience, the study of materials at a billionth of a meter, and create your own chemical reaction — to make slime!

Sunday, July 31th: Science-Museum Fun, Fun, Fun Day

- Explore the Long Island science-museum scene on one site!
- Visualize in 3-D, try your hand at Brookhaven's hands-on science exhibits, play with the L.I. ScienCenter's physics of toys, win at the Goudreau Museum's math games, and learn the science behind the tricks of a magician's trade!

Sunday, August 7th: Seeing the Light

- Visit one of the world's brightest sources of light— the National Synchrotron Light Source at Brookhaven Lab!
- See where one of the 2003 Nobel Prize laureates in Chemistry did much of his winning work and learn how intense x-ray, infrared, and ultraviolet light is used to examine everything from the AIDS virus to zeolites!

Sunday, August 14th: Celebration Fun, Fun, Fun Day

- Join the World Year of Physics festivities commemorating Albert Einstein's discoveries! Enjoy the "Einstein and Beyond" magic show!
- Plus go back in Brookhaven history to World War I and II's Camp Upton!

Sunday, August 21st: RHIC the Relativistic Raceway

- Discover RHIC — the Relativistic Heavy Ion Collider — where gold ions are collided in bang 'em up collisions near the speed of light!
- Visit the subterranean magnet tunnel and the two colossal particle detectors the size of a house! Learn for your self about the state of matter that this giant atom-smasher just uncovered and what it says about the Big Bang birth of the universe!

No reservations required! Arrive between 10 a.m. and 3 p.m. for free family fun and sizzling science during Summer Sundays at Brookhaven Lab, LIE exit 68, north 1-1/2 miles on County Route 46. Ages 16 and over, bring photo ID. For more information, go to www.bnl.gov or call (631) 344-BNL1.



Upcoming, Open-to-the-Public Event

Noon 'Pianofest' Recital, Wednesday, July 20th, 12 noon, Berkner Hall: Prize-winning participants in "Pianofest," a summer piano workshop in the Hamptons, will display style, interpretation and technical ability in a showcase recit e.