A massive international effort aimed at making the first direct observations of gravitational waves now has a University of Florida professor at its helm. **David Reitze**, a professor of physics, has been elected spokesperson of the Laser Interferometer Gravitational Wave Observatory (LIGO) Scientific Collaboration. The job is akin to that of a scientific chief executive.

“This is a very exciting time for the LIGO Science Collaboration because our instruments have become sufficiently sensitive to the point where we are confident they can detect gravitational waves,” Reitze said. “To put it as simply as I can, it is an honor and a privilege to serve during this exciting period.”

Reitze is the second UF faculty member and physicist chosen to head a major international scientific collaboration in recent years. The other is Jacobo Konigsberg, who was selected last year as spokesperson for the world’s largest high energy physics project, the Collider Detector at Fermilab collaboration near Chicago.

“It is very unusual for a single university to have spokespersons in two major international collaborations at the same time,” said Guenakh Mitselmakher, a distinguished professor of physics. “It shows that UF’s physics department is regarded very highly by its peers at other major universities.”

The LIGO Science Collaboration consists of 500 people from 45 scientific institutions and seven countries and oversees the scientific mission of two U.S. observatories (LIGO) and one European Observatory seeking to detect gravitational waves, elusive ripples in space-time first predicted by Albert Einstein in 1916. LIGO was built with $300 million from the National Science Foundation and is managed by the California Institute of Technology and the Massachusetts Institute of Technology. Each observatory contains highly specialized detectors called laser interferometers capable of measuring ultrasmall displacements caused by passing gravitational waves. Although the LIGO observatories in Washington and Louisiana first became operational in 2002, it wasn’t until 2005 that the instruments began performing with enough sensitivity to detect the waves, Reitze said.

Chances remain small for detection with the current instruments, but anticipated continued improvements to the instruments will make it steadily more likely in the next few years, Reitze said. That’s exciting for physicists because observing gravitational waves directly raises the possibility of answering questions about the origin of the universe, black holes and the nature of space and time, he said.

Reitze said that some gravitational waves date back to the Big Bang, the primeval explosion that brought about the universe. As a result, observing these waves would allow physicists to peer into the universe just fractions of a second after it came into being.

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Professor Rodney J. Bartlett, Graduate Research Professor of Chemistry and Physics, Quantum Theory Project, University of Florida, has been selected as the recipient of the ACS Award in Theoretical Chemistry in 2007 sponsored by IBM Corporation, which is one of the most prestigious international awards in the field. The past 14 recipients of the award include 10 National Academy members and 2 Nobel Laureates. Celebrating this Award, Quantum Theory Project and the Department of Chemistry will present joint Annual Löwdin Lecture and Department Colloquium by Professor Rodney J. Bartlett on Friday, April 6, 2007 at 4:15 pm at CLB C130. The speaker will be introduced by Professor John F. Stanton (University of Texas, Austin) and a brief reception will follow the presentation.

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“Our direct knowledge of the Big Bang ends about 380,000 years after it happened, and the reason for that is that light and the other things we measure only came into being then,” Reitze said. “Gravitational waves existed right at the start. If we could probe them directly, we would be able to probe the origin of the universe exactly at the moment of its birth. LIGO cannot directly access these relic waves, but we can begin to put limits on what fraction of the universe is made of gravitational waves.”

Because black holes emit gravitational waves as other stars merge into them, observing gravitational waves would also allow physicists to learn about how gravity behaves near black holes, revealing more about the nature of space and time, Reitze said. In his new position, Reitze will serve as the public face of the collaboration, and he will be in charge of maintaining its scientific agenda. As the collaboration’s third spokesperson, he will serve a two-year term.
STUDENT NEWS

A one-week “Summer School on Methods and Applications of Neutron Spectroscopy” will be held June 25-29, 2007 at the NIST Center for Neutron Research. For information about the summer school go to:
http://www.ncnr.nist.gov/summerschool/ss07/

The Summer School is sponsored in part by the National Science Foundation. Limited support for graduate students, postdocs and junior faculty will be available. Attendance will be limited to 32 participants, and preference will be accorded to applicants from North American institutions.

For further information and/or to apply, please go to http://www.ncnr.nist.gov/summerschool/ss07/. Early application is recommended as attendance is limited and typically this course is largely over-subscribed.

Summer 2007 Courses

Physics courses for Summer 2007 have been posted online at:
http://www.phys.ufl.edu/courses/summer07.html

QUALIFYING EXAMS for PhD

February 27, Alix Preston
“Stable Structures for Interferometric Gravitational Wave Detectors” Chair, Guido Mueller

Position Available

The University of Florida Physics Department has an opening for an experimental optical physicist at the University of Florida to be based at the LIGO Livingston Observatory in Livingston, LA. While expertise in high average power and stabilized lasers, high precision measurements, and control systems is desirable, we are looking for talented individuals who are willing to actively contribute to an exciting and rapidly growing area of gravitational wave astrophysics. The position is available immediately. Further information may be found at http://www.phys.ufl.edu/ligo/.

Appointments will be made at either the Ph.D. research scientist and or postdoctoral level depending upon qualifications. Interested persons should send a CV and the names and addresses of three references to Professor David Reitze, Physics Department, University of Florida, PO Box 118440, Gainesville, FL, 32611-8440, reitze@phys.ufl.edu
Students from Williams Elementary School had opportunity to tour the exhibits in the Physics Lobby as part of Engineering Week. See pictures below.