

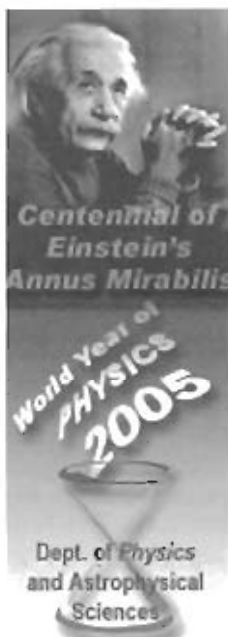
Princeton Physics News

EINSTEIN CENTENNIAL

On the occasion of the Centennial of Einstein's *Annus Mirabilis* and of the World Year of Physics, the Departments of Physics and Astrophysics and Princeton University organized a series of public events that spanned 2005.

One of the physics colloquia dedicated to Einstein, titled "The Assassin of Relativity," was given by Peter Galison, Mallinckrodt Professor of the History of Science and Physics at Harvard University. It dealt with the friendship between Einstein and Friedrich Adler, a fellow student at the Zurich Polytechnic. In the midst of World War I, Adler assassinated the Prime Minister of the Austro-Hungarian Empire, and eventually spent years in prison trying to disprove the theory of relativity while corresponding with Einstein on this topic.

Brian Greene of Columbia University, author of *The Elegant Universe*, discussed "The Fabric



of the Cosmos," the topic of his most recent book. Alex Filippenko from Berkeley gave a series of lectures on cosmology, including "Einstein's Biggest Blunder? The Case for Cosmic 'Antigravity'."

In May, during a special reunion week-end event titled "Princeton and Einstein's Legacy," four Princeton alumni made presentations on the relationship between their current research and Einstein's 1905 papers. Speakers were Richard Gott from Astrophysical Sciences in Princeton, Hideo Mabuchi from Caltech, Edward Witten from the Institute for Advanced Study in Princeton, and Claire Yu from the University of California at Irvine. The event ended with an observation night at the FitzRandolph Observatory.

A fall finale featured an afternoon of music, "Superstrings: a Celebration of Einstein and Physics," and a talk titled "An Introduction to Einstein and Music."

FROM THE CHAIR



Dan Marlow

Dear Alumni and Friends:

On behalf of the faculty, staff, and students of the Princeton Physics Department, it's my pleasure to extend greetings to all of you.

The following pages contain information about several exciting developments, including the centennial celebration of Einstein's "miracle year" in 1905, the awarding of the Nobel Prize in Physics to David Gross and Frank Wilczek for work done here in Jadwin, and the founding of a new Center for Theoretical Physics. We hope you find the articles to be of interest.

For those of you too

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STUDENTS' FIELD TRIP TO CALIFORNIA



Photo courtesy of the *Hi-Desert Star*, November 2, 2005

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UPDATE ON JOHN ARCHIBALD WHEELER

Since his times in Los Alamos, John Wheeler started using bound record books—either because of security requirements at Los Alamos or because he was following Enrico Fermi's lead, as he occasionally claimed.

By now he has filled dozens of them. He brings one with him every Tuesday and Thursday morning when he comes to his office in Jadwin Hall. These books, containing calculations, drawings, musings, clippings and photos, provide revealing insights on John's current thoughts.

John is much taken with the idea that evolution may not be just a feature of biology. He wonders whether physical laws and physical constants evolve, too, through a process of natural selection—whether what we see around us and the rules that govern our world have not been here "from everlasting to everlasting" but have been shaped by evolution.

Why $3 + 1$ dimensions? he asks. Why not more? There is no law against more. Is the dimensionality of space and time itself a product of natural selection? And even more importantly: How does something arise from nothing? He is still fascinated with quantum mechanics and its interpretation. He ponders the question whether we humans actually create the laws by our observations, in the way that a magician creates illusion—that what we observe around us is no more real than what we observe at a magic show. On his wall

hangs a sweatshirt with the logo: What part of quantum theory don't you understand? He never fails to point it out to his visitors, while asking with a laugh: How do you like my sweatshirt?

John and Janette, his wife of more than 70 years (they were married in 1935), live at Meadow Lakes in Hightstown, where they have been since they returned from Texas in 1986.

John is now 94, Janette, 97. John's secretary, Jackie Fuschini, serves as the twice-a-week chauffeur and valued assistant, doing what she can to help them both.

John is physically frail, has great difficulty hearing, and sometimes seems lost in reverie. Yet he clings to the belief that he may come up with yet another important idea. He has lost none of his persistence, nor any of his courtliness. Any colleague or student stopping by to say hello in Room 394 will be rewarded with a big smile, a warm handshake, and perhaps a penetrating question.

Ken Ford, who received his Ph.D. from Princeton in 1953 and collaborated with John Wheeler on Wheeler's autobiography, *Geons, Black Holes, and*

Quantum Foam: A Life in Physics (1998), is the contributor of this article. He is a frequent visitor to Jadwin Hall, driving up from his Philadelphia home at least two or three times each month to visit with Wheeler and assist with correspondence.



Professor John Wheeler

THE NEW PRINCETON CENTER FOR THEORETICAL PHYSICS

In the 21st century, the rapid expansion of the scope of theoretical physics beyond its traditional boundaries calls for new approaches to nurturing excellence in theory. The Center for Theoretical Physics (CTP), a cooperative venture of theoretical physicists at Princeton University across several departments, is an innovative response to this challenge.

The mission of the Center will be to promote and support the exploration at Princeton of the most exciting frontiers of theoretical natural science. The Center will engage faculty, post-doctoral fellows and students in research and educational activities that cross the boundaries between Princeton's traditional areas of strength in fundamental theory: particle and string theory, condensed matter and materials theory, cosmology and astrophysics, theoretical biophysics and mathematical physics. Cooperation between faculty members from a range of theoretical disciplines will be needed to exploit many of the most important scientific opportunities of the coming decades and the Center is designed to encourage and facilitate such cooperation.

The mission of the Center will be to promote and support the exploration at Princeton of the most exciting frontiers of theoretical natural science.

The Center will be associated with the Physics Department and will be housed in newly-renovated space in Jadwin Hall. The Center will have a Director, responsible for the overall intellectual direction of the enterprise, and a corps of Center Faculty Fellows from Physics and other departments, whose responsibilities will include choosing the programs and overseeing the selection and mentoring of Center Postdoctoral Fellows. The first director will be Professor Curtis Callan, who will work with Associate Director Paul Steinhardt. Every year, three Center Postdoctoral Fellows will be selected competitively, with the aim of identifying the most outstanding and promising young theorists. Fellows will be appointed for three-year terms, will have complete freedom to pursue their own research interests, and will be encouraged to participate in, and help organize Center programs.

The latter are thematic programs focused on forefront issues in theoretical physics. The topics of the first two will be "The Beginning of the Universe," and "Frontiers in Quantum Computations." More information can be found at:

<http://www.ctp.princeton.edu/ctp>