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UCSB Physicist Receives International Acclaim for His Work in Theoretical Physics

Joseph Polchinski, a permanent member of UC Santa Barbara's Kavli Institute for Theoretical Physics (KITP) and professor of physics at UCSB, has been named one of three recipients of the 2013 Physics Frontier Prize from the Milner Foundation.

With the award, Polchinski becomes a nominee for the foundation's \$3 million Fundamental Physics Prize, which will be presented on March 20, 2013, in a special ceremony at the European Organization for Nuclear Research (CERN) in Geneva. Frontier Prize laureates who do not win the Fundamental Physics Prize receive an award of \$300,000, and are automatically nominated again each year for the next five years.

"This is a great day for physics at UC Santa Barbara," said Pierre Wiltzius, the Susan & Bruce Worster Dean of Science at UCSB. "The inaugural list of this prize reads like a Who's Who in physics. Professor Polchinski's contributions to string theory are clearly being recognized as groundbreaking."

Said Professor Lars Bildsten, director of the KITP: "I am tremendously excited to learn of Joe's recognition. His ability to continuously break new scientific ground is awe inspiring, and I'm happy to see his unique talents recognized in this way."

According to the award citation, the Physics Frontier Prize recognizes Polchinski's broad contributions to fundamental physics, most notably the discovery of D-branes. These have been shown to provide the atomic structure of black holes, predicted long ago by Stephen Hawking, and, as such, are one of the basic building blocks of spacetime.

"The previous winners of the Fundamental Physics Prize chose the new awardees, so it is very gratifying to get this kind of recognition from my fellow scientists," Polchinski said of the honor. "It is also a pleasure to share the recognition with UCSB and the KITP, because their support and stimulating atmosphere have made my work possible. I expect the award will enhance my research in many ways."

Said Nima Arkani-Hamed, a member of the selection committee: "Choosing this year's recipients from such a large pool of spectacular nominations was a very difficult task. The selected physicists have done transformative work, spanning a wide range of areas in fundamental physics."

As a prizewinner, Polchinski has been invited to present a public talk, the details of which will be announced by the KITP at a later date.

A member of the KITP since 1992, Polchinski is a recognized leader in theoretical physics. He has carried out studies across a broad range of theoretical physics, with special emphasis on string theory. He is the author of a classic two-volume text on string theory, and has published over 150 articles.

A native of New York, Polchinski received his Bachelor of Science degree from the California Institute of Technology, and his Ph.D. from UC Berkeley. After two years as a research associate at the Stanford Linear Accelerator, and another two at Harvard University, Polchinski joined the faculty of the University of Texas at Austin as an assistant professor and rose through the ranks to become full professor. He came to UCSB in 1992.

Polchinski is the recipient of numerous awards and honors, including an Alfred P. Sloan Fellowship. He is a fellow of the American Association for the Advancement of Science, and of the American Physical Society. In addition, he is a member of both the American Academy of Arts and Sciences and the National Academy of Sciences. He is a co-recipient of the Dannie Heineman Prize for Mathematical Physics, and a recipient of the Dirac Medal, which is awarded annually by the Abdus Salam International Centre for Theoretical Physics.

Also honored by the Milner Foundation is Joseph Incandela, professor of physics at UCSB and spokesman for the Compact Muon Solenoid (CMS) experiment at CERN's Large Hadron Collider (LHC) in Europe. He will share a special \$3 million Fundamental Physics Prize with six scientists who are being recognized for their leadership role in the scientific endeavor that led to the discovery of the new Higgs-like particle by the CMS and ATLAS collaboration at the LHC.

The awards are presented through the Fundamental Physics Prize Foundation, a non-profit corporation established by the Milner Foundation, which was founded by Russian Entrepreneur Yuri Milner. Both are dedicated to advancing the knowledge of the universe and honoring scientific breakthroughs, as well as bringing the excitement of fundamental physics to the general public.

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