

Thursday, November 30, 2023

Refreshments at 3:15pm outside PSF 101
Colloquium from 3:30pm - 4:30pm in PSF 101

Adventures with Black Holes: Past, Present and Future

Professor Andrew Strominger
Harvard University



Abstract:

In the last decade black holes have come to center stage in both theoretical and observational science. Theoretically, they were shown a half-century ago by Stephen Hawking and others to obey a precise but still-mysterious set of laws which imply they are paradoxically both the simplest and most complex objects in the universe. Compelling progress on this paradox has occurred recently. Observationally, they have finally and dramatically been seen in the sky, including at LIGO and the Event Horizon Telescope. Future prospects for progress on both fronts hinge on emergent symmetries occurring near the black holes. An elementary presentation of aspects of these topics and their interplay will be given.

Biography:

Dr. Andrew Strominger received his PhD from MIT in 1981, and held a postdoctoral position at the Institute for Advanced Study in Princeton. After a position at University of California, Santa Barbara, he joined the Harvard faculty where he is now the Gwill E. York Professor of Physics. As a director of the Center for the Fundamental Laws of Nature and member of the Black Hole Initiative, Andy's research has endeavored to shed light on the unsolved problems in the fundamental laws of nature, which are as we currently understand them both incomplete and self-contradictory. These problems include the unification of forces and particles, the origin of the universe, and the quantum structure of black holes and event horizons.

His work on these topics has earned him several prestigious prizes, most recently including the Breakthrough Prize in Fundamental Physics, the Dannie Heineman Prize for Mathematical Physics from APS, the Physics Frontiers Breakthrough Prize from the Milner Foundation, the Dirac Medal, the Oskar Klein Medal, and the Leonard Eisenbud Prize.

Host: Prof. Cindy Keeler

View our Fall 2023 Physics Colloquium schedule at <https://physics.asu.edu/colloquia>