

# Gravity in the Quantum World and the Cosmos

XXXIII SLAC Summer Institute SSI05 July 25 - August 5, 2005

## SCHOOL LECTURES

General Relativity Primer  
Gravitational Radiation  
Gravity Wave Interferometers  
Testing General Relativity with Pulsars  
Primordial Gravity Waves and CMB Polarization  
Black Holes  
Neutron Stars  
Extreme Neutron Stars  
Observations of Black Holes  
Unifying the Forces  
Extra Dimensions and Strong Dynamics  
Unification and Proton Decay Experiments  
Searching for Extra Dimensions at Accelerators  
Strings for Dummies  
String Cosmology  
The Cosmological Constant  
Probing Dark Matter with Gravitational Lensing  
Gravity and Dark Energy  
Understanding Space and Time

Sean Carroll  
Alessandra Buonanno  
Gabriela Gonzalez  
Ingrid Stairs  
Sarah Church  
Scott Hughes  
James Lattimer  
Chris Thompson  
Andy Fabian  
Keith Dienes  
Raman Sundrum  
Chang Kee Jung  
Tracy Berry  
Joe Lykken  
Eva Silverstein  
Shamit Kachru  
Priya Natarajan  
Rocky Kolb  
Lawrence Krauss

## THEME

Gravity influences everything: it controls how our universe evolves and affects particle physics at the smallest scales. Scientists are building upon Einstein's legacy and taking the exploration of gravity into the 21<sup>st</sup> century, from string theory to the discovery of dark energy and the observation of black holes.

The 2005 SLAC Summer Institute will focus on gravity and its role in particle physics, astrophysics, and cosmology. The morning lectures will cover the basics of general relativity, gravity waves, black holes, neutron stars, string theory and extra-dimensions. Topical talks on current research and discussion sessions will take place in the afternoons.

The SLAC Summer Institute is hosted by Stanford University and co-sponsored by the US Department of Energy and the Stanford Linear Accelerator Center.

The painting in the upper left is by Ms. Dawn Neal Meson entitled "Kaluza - Klein (Invisible Architecture III)"

## CONTACT

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