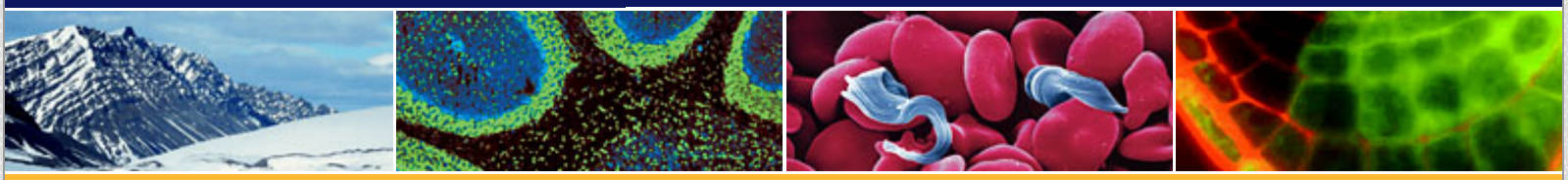

U.S. Kavli Frontiers of Science

20th Annual
Kavli Frontiers of Science Symposium

U.S. National Academy of Sciences

Arnold and Mabel Beckman Center
November 6-8
Irvine, California

Light from the Early Universe and Quantum effects in Gravity

-Presentation

Eva Silverstein, Stanford University

Please click on the above link to watch the presentation - both slides and audio. This presentation file is in Adobe Flash player format, available free online.

Inflationary cosmology -- exponential expansion of the universe at early times -- provides a simple, observationally tested scenario for understanding the observed flatness and homogeneity of the universe and the seeds of structure formation. Within this broad framework, there are diverse mechanisms for theoretically modeling inflation and structure, many of which make distinctive predictions for observations of the Cosmic Microwave Background Radiation (CMBR).
The mechanism behind inflation is sensitive to very high-energy physics, and requires input from a more complete theory of gravity (such as string theory) going beyond Einstein's General Relativity.

After introducing the phenomenon of early universe inflation, I will describe two effects of interest -- gravitational radiation, and nonlinear effects in the CMBR -- and their role in the challenging problem of trying to connect string theory to observations.

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National Academy of Sciences
500 Fifth Street, NW
Washington, DC 20001