



# PHYSICS and ASTRONOMY

presents

## the 19<sup>th</sup> Primakoff Lecture

### David Gross

Department of Physics, UCSB  
Director, Institute for Theoretical Physics



**D**avid Gross is a Professor of Physics and the Director of the Institute for Theoretical Physics at the University of California, Santa Barbara. A native of Washington, D.C., he obtained his undergraduate degree from Hebrew University in Jerusalem in 1962, and his Ph.D. from Berkeley in 1966. He spent three years as a Junior Fellow at Harvard before moving to Princeton, where he was promoted to full professor in 1973 and named Eugene Higgins Professor of Physics in 1986. In 1997, Gross moved to Santa Barbara to assume the directorship of the ITP. He is a member of the National Academy of Sciences, the American Academy of Sciences, and a recipient of the Sakurai Prize, the Dirac Medal, a MacArthur Foundation Prize fellowship, and the Harvey Prize.

Gross has been a central figure in theoretical developments surrounding the emergence of quantum chromodynamics (QCD) as the accepted theory of the strong (nuclear) force. His discovery, with his student Frank Wilczek, of asymptotic freedom - the primary feature of non-Abelian gauge theories - led Gross and Wilczek to the formulation of QCD. His incisive papers on many other aspects of quantum field theory and particle physics have been widely influential. He has made seminal contributions to the theory of superstrings, taking a critically inventive role in the explosive development of string theory in the 1980s. With collaborators he originated the "Heterotic String Theory," a prime candidate for a unified theory of all the forces of nature. He continues to do research in this field at the ITP, a world center of string theory.

#### The Discovery of Asymptotic Freedom and the Emergence of QCD

Tuesday, March 26<sup>th</sup>, 2002

1:30PM

Auditorium A4

#### The Coming Revolutions in Fundamental Physics

Wednesday, March 27<sup>th</sup>, 2002

4:00PM

Auditorium A1

David Rittenhouse Laboratory  
209 South 33rd Street

*I will survey the "Top Ten Questions" in theoretical physics, and I shall review the current state of String Theory, an ambitious attempt to construct a unified theory of matter and gravity. I shall discuss the reasons why we have been led to this theory, the marvelous structures that it has revealed and speculate on its future prospects.*

Further Information: Vivian Hasiuk: [Hasiuk@physics.upenn.edu](mailto:Hasiuk@physics.upenn.edu) / 215-898-5954

University of Pennsylvania Department of Physics and Astronomy / 209 South 33rd Street / Philadelphia, PA 19104-6396 / 215-898-8141 / [www.physics.upenn.edu](http://www.physics.upenn.edu)

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