

**UCLA****Mani L. Bhaumik**  
Institute for Theoretical Physics

# Distinguished Bhaumik Lecture and Physics & Astronomy Colloquium

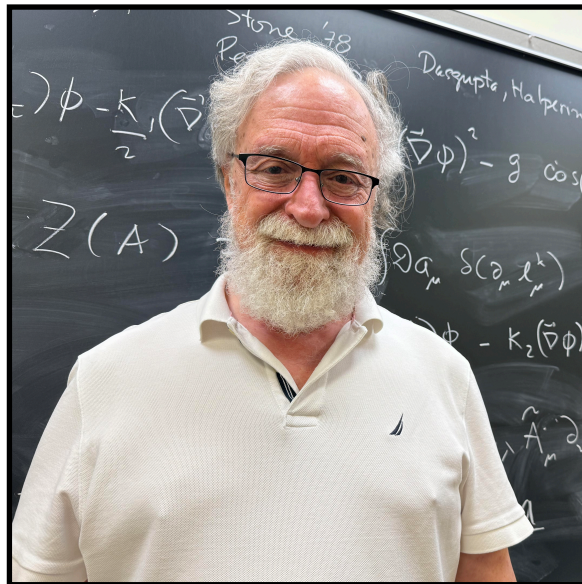
Thursday, May 7<sup>th</sup> 2026, 4PM

Physics & Astronomy Building (PAB) 1-434

*Refreshments will be served at 3:30PM on the 3rd floor patio*

## Duality in Condensed Matter Physics and Field Theory

Eduardo Fradkin  
(University of Illinois)



Duality has a long history in physics going back to the electromagnetic symmetry discovered by Dirac in 1931 and by the duality symmetry of pf the two-dimensional Ising model of Statistical mechanics discovered by Kramers and Wannier in 1941. By now there are many extensions and generalizations of duality in several areas of physics ranging from condensed matter to quantum field theory and gravity. In the talk I will give a brief sketch of this rich history, focusing on recent discoveries. Duality is often a mapping that relates a strongly coupled theory to another weakly coupled one, often with seemingly different nature. I will end my colloquium showing for duality has helped understanding a mysterious symmetry seen in experiments in quantum Hall fluids.