

SMS Spring 2024 Eyring Lecture

Friday March 29 | 3pm | NEEB 105

The Origins of Life: An uncanny resemblance to the old Protein Folding Problem

How did the first living cells come into being from the earth's molecular soup 3.5 billion years ago? Despite much speculation – maybe RNA came first, or proteins, or chemical networks – there's not yet a consensus origins story. New insights are coming from thinking not just about life's molecules, but about biology's dynamics; its process of adaptation. The Darwinian evolution process must have preceded the origins of life. This, and the apparent needle-in-a-haystack nature of sequence space, indicate a key role of proteins in life's origins.

Ken Dill, PhD

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Ken Dill is the Laufer Family Endowed Professor of Physical Biology and SUNY Distinguished Professor, and was Founding Director of the Laufer at Stony Brook University. He received SB and SM degrees from MIT in Mechanical Engineering in 1971, a PhD in Biology with BH Zimm at the University of California, San Diego, did postdoctoral research with PJ Flory at Stanford University, and was on the faculty in the Department of Pharmaceutical Chemistry at UCSF for 28 years. His research is at the intersection of statistical physics with the biophysics of proteins and cells. He has worked on the physics of protein folding; computational structural biology; proteostasis in the cell; and on foundational problems in nonequilibrium statistical physics. Dill is a past president of the Biophysical Society and a co-author of two textbooks. He received the Hans Neurath Award from the Protein Society, the Max Delbruck Award from the American Physical Society and the Sackler Prize in Biophysics. Dill is a member of the US National Academy of Sciences and the American Academy of Arts and Sciences.

