

2013 DISTINGUISHED LECTURE SERIES

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MATHEMATICS and the MELTING POLAR ICE CAPS

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July 10, 2013, 1:00 - 2:00 p.m.

UC Davis Conference Center, Ballroom A, B, C



In September of 2012, the area of the Arctic Ocean covered by sea ice reached its lowest level ever recorded in more than three decades of satellite measurements. In fact, compared to the 1980's and 1990's, this represents a loss of more than half of the summer Arctic sea ice pack. While global climate models generally predict sea ice declines over the 21st century, the precipitous losses observed so far have significantly outpaced most projections.



Dr. Golden will discuss how mathematical models of composite materials and statistical physics are being used to study key sea ice properties and advance how sea ice is represented in climate models. This work is helping to improve projections of the fate of Earth's ice packs, and the response of polar ecosystems. In addition, an exciting video from a 2012 Antarctic expedition where sea ice properties were measured will be shown.

Kenneth M. Golden is a Professor of Mathematics and Adjunct Professor of Bioengineering at the University of Utah. His scientific interests lie in sea ice, climate change, composite materials, phase transitions, and inverse problems. He has published 56 papers in mathematics, physics, geophysics, electrical engineering, mechanical engineering, and biomechanics journals, and given over 350 invited lectures on six continents, including three presentations in the US Congress. Dr. Golden has journeyed seven times to Antarctica and nine times to the Arctic to study sea ice. He is a Fellow of the Society for Industrial and Applied Mathematics, as well as the American Mathematical Society.



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