The Yellowstone Volcano: Past, Present and Future - Monitoring the sleeping giant beneath Yellowstone National Park

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The talk will focus on the past, present and future of the Yellowstone volcanic and geothermal system. Over the past two million years, Yellowstone has produced some of the largest single explosive volcanic eruptions known on Earth, as well as hundreds of lava flows, large earthquakes, and massive steam explosions. The region continues to exhibit continual volcanic unrest, such that scientists with the Yellowstone Volcano Observatory watch over a sophisticated monitoring network to detect new activity. The incursion of heat and mass from the Yellowstone hotspot on pre-existing Archean basement, and Mesozoic and Cenozoic sediments results in a remarkable coalescence of mantle, crustal, and atmosphere-derived fluids that interact in the geothermal system. Studies of Yellowstone renowned geothermal system therefore provide insight both into the mantle, but also into the billions of years of geologic history that preceded recent volcanism.

Biography: **Dr. Jake Lowenstern** is a native of Virginia, and a graduate of Dartmouth College (A.B.) and Stanford University (M.S. and Ph.D.). His career has focused on magmas and the hydrothermal systems that form above them. Since 1993, he has worked at the U.S. Geological Survey in Menlo Park, where he has led studies on topics ranging from gas geochemistry to igneous petrology to zircon geochronology to geothermal prospecting. Since 2002, he has served as scientist-in-charge of the Yellowstone Volcano Observatory.