NIMBioS
National Institute for Mathematical and Biological Synthesis

NIMBioS Interdisciplinary Seminar

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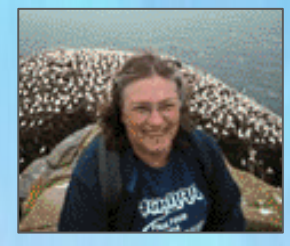

3:30 p.m.*, Tuesday, April 9, 2013

"Modeling the demography of a pre-Columbian Southwest US population: The Artificial Long House Valley (ALHV) project"

Population settlement, growth, expansion and eventual abandonment of ancestral Pueblo sites in the Four Corners region of the United States have posed enduring questions for bioarchaeologists and paleodemographers. An agent-based computer model, the Artificial Anasazi (AA) model, was developed to aid in understanding this population history. The model uses extensive archaeological and environmental data to simulate the rise and fall of populations in the Long House Valley, located in northeastern Arizona. It focuses on demographic changes at the household level, however, which prohibits it from incorporating individual-level demographic processes such as age-specific fertility and mortality. These processes have been built into an extension of the model, which we call the Artificial Long House Valley (ALHV) model. Simulation outcomes from the ALHV model are very different from those of the AA model. In this talk we describe the structure of the two models, show how the results differ, and suggest reasons for these differences. We hope to generate discussion that will aid in determining how best to further incorporate individual-level demographic processes into the ALHV model to improve our efforts at measuring the impact of infectious disease, changes in fertility, and other individual-level factors on the collapse of the population and abandonment of the Long House Valley.

Hallam Auditorium, Room 206, Claxton Education Building, 1122 Volunteer Blvd.
***Join us for refreshments at 3 p.m. in the 1st floor visitor breakroom.*

For more information about this and other NIMBioS Seminars, visit http://www.nimbios.org/seminars

The National Institute for Mathematical and Biological Synthesis (NIMBioS) brings together researchers from around the world to collaborate across disciplinary boundaries to investigate solutions to basic and applied problems in the life sciences. NIMBioS is sponsored by the National Science Foundation, the U.S. Department of Homeland Security, and the U.S. Department of Agriculture with additional support from The University of Tennessee, Knoxville.

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