

The Ohio State University
Department of Geography
COLLOQUIUM SERIES 2013-2014

**Hydrosocial transformation in an Andean waterscape:
Implications for coupling human Variables
with Climate-Glacier Runoff Models (Santa River, Peru)**

Bryan G. Mark

Associate Professor, Department of Geography
& the Byrd Polar Research Center
The Ohio State University

Climate change and dramatic glacier mass loss in the Cordillera Blanca, Peru, has transformed downstream hydrology, with implications for domestic, agricultural and industrial water resources. My collaborative research project⁽ⁱ⁾ has coupled multiscale observations of changes in glacier volume, hydrology, water quality, and land usage with social and economic data about perceptions of and responses to environmental change. Based on historical runoff and glacier data, the upper Santa River watershed is found to be on the descending limb of a conceptual multi-decadal hydrograph. I argue that societal forces shape water usage over time, but perceptions of water availability and actual water use practices remain relatively divorced from the amount of either glacier runoff or Santa River water flow. In order to identify, understand, model, and adapt to these climate-glacier-water changes, it is vital to integrate the analysis of both water availability (the domain of hydrologists) and water use (the focus for social scientists).

(i) The project involves four institutions and is funded by the National Science Foundation's "Dynamics of Coupled Human and Natural Systems" program.

Friday, September 27, 2013
Derby Hall Room 1080
3:30-5:00 pm



The Geography Colloquium series is funded in part through the John Nelson Endowment and the alumni, faculty, and friends of the Ohio State Geography endowment