Recent, widely recognized changes in the Earth system are, in effect, changes in the coupled human/environment system. We have entered the Anthropocene, when human activity — along with solar forcing, volcanic activity, polar wobbling and the like — must be considered a component (a “driver”) of global environmental change (Crutzen and Stoermer 2000; Levin 1998). The dynamic nonlinear system in which we live is not in equilibrium and does not act in a predictable manner. If our species is to continue to thrive, it is of utmost importance that we identify the ideas and practices that nurture both our species and the planet. One important laboratory for this is the past, where long-, medium-, and short-term variables can be identified and their roles evaluated. Perhaps the past is our only laboratory: large-scale experimentation requires time we might not longer have. Thus re-analyzing the past and integrating our understanding of human history with that of the Earth system evolution is a timely and urgent task.

Projects are underway to build on archaeological practice and connect the historical sciences with contemporary work in ecology and complex adaptive systems. The Integrated History and Future of the People on Earth (IHOPE) facilitates an interdisciplinary network of scholars, fosters their projects, and offers a framework for integration at regional, continental, and global scales. IHOPE is a special project of the International Geosphere-Biosphere Programme (IGBP). In addition to IGBP, IHOPE’s sponsors are the International Human Dimensions Programme (IHDP) and two IGBP core projects: Analysis, Integration and Modeling of the Earth System (AIMES) and Past Global Changes (PAGES).

IHOPE goals are to produce an integrated record of biophysical and human system change beginning in the later Pleistocene, with emphasis on the last several millennia. This integrated record will be used to generate research questions, eschewing a simple causation narrative based on temporal or geographic proximity. The global environmental change community recognizes the value of the archaeological and historical record, realizes that the laboratory of the past flags mistakes and uncovers solutions, and seeks collaboration with the social sciences and humanities and with all stakeholders. IHOPE attempts to facilitate this process.

Human and Earth History as a Complex System: Theoretical Challenges explores complex adaptive systems from four perspectives: the physical sciences, the biological sciences, the social sciences, and the humanities.

Panel Participants and Papers:

Joseph Tainter – “Resources and Societies: Past and Future”

Jon Norberg – “Formalizing social capital in natural resource economics”