



Presents the

2014 ANNUAL WORKSHOPS IN ARCHAEOLOGY PROGRAM




Climate Change and the Archaeological Record: Implications for the 21st Century

Saturday, November 8, 2014
9:00 a.m. – 6:00 p.m.

The State Museum of Pennsylvania
300 North Street
Harrisburg, PA 17120-0024

cosponsored by:
Society for Pennsylvania Archaeology
Pennsylvania Archaeological Council
PA Bureau for Historic Preservation

 Pennsylvania Historical & Museum Commission
Tom Corbett, Governor
Andrew E. Masich, Chairman
James M. Vaughan, Executive Director

2014 Annual Workshops in Archaeology Program

The Archaeology Section of the State Museum of Pennsylvania invites you to attend the annual Workshops in Archaeology on Saturday, November 8, 2014. This program is designed to provide the general public with an overview of archaeological discoveries across the Commonwealth. This year's theme is climate change and its effects on cultural adaptations in Pennsylvania. Archaeology is the study of past cultural behavior and one of its goals is to use the patterns of cultural change to predict or at least prepare, for cultural change in the future. Archaeologists have a long history of studying environmental change and they offer a unique opportunity to examine the interaction between culture and the environment over thousands of years. The program will begin with an overview of the major climatic episodes of the past 20,000 years followed by six presentations on how Native American cultures reacted to these changes. The final presentation will focus on how climate and culture may interact in the future. As you will hear, climate change has not always been harmful, and in some cases, it has been quite beneficial to human adaptation.

In addition to the presentations, attendees can share their archaeological discoveries with staff from the Bureau for Historic Preservation who will provide assistance with artifact identification and recording archaeological sites, an essential task for protecting and preserving our archaeological heritage. An additional offering includes a demonstration by a master flintknapper who will make stone tools using Native American techniques. A reception at the close of the sessions will provide an opportunity for the attendees to meet with the presenters and staff in the Anthropology and Archaeology Gallery of the State Museum.

Session Descriptions

9:00 a.m.-9:10 a.m.

Opening Remarks – David Dunn, Director, The State Museum of Pennsylvania

9:10a.m.-9:50 a.m.

[Session1] *Environmental Overview: Paleoenvironments of Pennsylvania from the Late Glacial Advance to the Present*

Frank Vento

Professor Emeritus, Department of Geology, Clarion University of Pennsylvania

Paleoclimatologists study changes in the climate using pollen, plant and animal remains and changes in river dynamics to reconstruct past environments. This presentation summarizes the major climatic episodes of the past 20,000 years and establishes a framework and context for the next six presentations on the reaction by humans to these changes. Although the major climatic episodes have been identified across the continent, they were not expressed in the same manner and some were more severe than others. Some long-term climate changes are cyclical but some are less predictable and cultures must be able to adapt to both in order to survive.

9:50 a.m.-10:30 a.m.

[Session2] *The Solutrean Connection*

Dennis Stanford

Director of the Paleoindian/Paleoecology Program, Smithsonian Institution

More than a decade ago Dennis Stanford and Bruce Bradley proposed that North America was first settled by Europeans, not Asians. They proposed an Atlantic crossing by watercraft at a much earlier time than the land migration across the Bering Strait. A major question in response to this proposal is what would motivate people in Europe to get into boats and sail across the Atlantic under severe arctic like weather conditions to settle in a new and unfamiliar land? This presentation will describe the new evidence for this migration and the environmental conditions that led to it.

BREAK – coffee and snacks

10:45 a.m.-11:25 a.m.

[Session 3] *Pre-Clovis Adaptations in the Americas*

J. M. Adovasio

Mercyhurst Archaeological Institute, Mercyhurst University

Meadowcroft Rockshelter was initially excavated over 35 years ago and at the time, represented the best evidence for Pre-Clovis occupation in the New World. For decades, however, it stood as the solitary example and, therefore, was highly controversial. Since then, the number of excavated pre-Clovis sites has grown and the majority of the archaeological community now accepts the concept of people arriving in the New World thousands of years prior to the development of fluting and the Clovis tradition. This presentation will focus on the variety of Pre-Clovis adaptations that have been found to date in the New World and will offer several alternative ages for the earliest colonization pulse.

11:25 a.m.-11:45 a.m. Questions and discussion

Lunch on your own - See boxed lunch options.

1:00 p.m.-1:40 p.m.

[Session 4] *Paleoindians and the Younger Dryas Climatic Episode*

Jonathan C. Lothrop

New York State Museum

Shortly before 11,000 years ago, Paleoindian populations with fluted-point technologies colonized the Eastern Great Lakes and Mid-Atlantic regions and then settled the New England Maritimes. Around 10,900 years ago, the warming trend of the terminal Pleistocene was interrupted by colder conditions of the Younger Dryas, a climatic reversal that lasted until the onset of the warm, dry climate of the early Holocene, about 10,100 years ago. We first examine how these climatic changes affected vegetation communities and animal populations in the glaciated Northeast and the Mid-Atlantic. Against this backdrop, we then review regional archaeological records for shifts through time in Paleoindian lifeways, considering how these cultural changes may have been linked to climate change.

1:40 p.m.-2:20 p.m.

[Session 5] *The Archaic Period: The Transition to the Holocene, Population Growth and Cultural Diversity*

Christopher Bergman

URS Corporation

About 10,000 years ago, Ice Age glaciers began to recede and a long period of climatic amelioration known as the Holocene epoch began. Accompanying the warming trend were significant changes in the types and distribution of plant and animal communities. These shifting environmental conditions were mirrored in the cultural adaptations of Native American populations. This presentation will consider the cultures that occupied Pennsylvania's prehistoric landscape of the early Holocene, manifested during the period that archeologists refer to as the Archaic.

2:20 p.m.-3:00 p.m.

[Session 6] *Transitional Period: The Mid-Holocene Warm and Dry Episode*

Heather Wholly

Associate Professor of Anthropology, West Chester University

Since the end of the Ice Age, the environment was warm and wet, however, beginning around 4500 years ago, the climate became warmer and drier. This change impacted the abundance and distribution of food resources, influencing the rate of human population growth and patterns of community settlement. A population-resources threshold may have been reached in eastern Pennsylvania that precipitated significant technological innovations and social changes. This presentation will describe these innovations and changes and evaluate the role of climate change in resources availability, technological developments and population density.

BREAK – coffee and snacks

3:20 p.m.-4:00 p.m.

[Session 7] Warming, Cooling and Agricultural Evolution
John P. Hart
New York State Museum

The classic expression of Native American agriculture in temperate northeastern North America is the three sisters — maize, common bean and squash. Each of these crops entered into the region separately beginning over 5,000 years ago and ending as recently as 700 years ago. As a result of interactions with human populations and subregional environments, each crop had its own unique evolutionary history. The crop varieties and agricultural management systems that evolved over the centuries across the Northeast were well adapted to the short northern growing seasons and changes to regional climatic patterns such as the Little Ice Age.

4:00 p.m.-4:40 p.m.

[Session 8] Dire Predictions: Understanding Global Warming
Michael Mann
Distinguished Professor and Director, Earth System Science Center (ESSC)

This lecture will begin with a review of the now proven evidence for a human influence on the climate of recent decades. Such evidence includes instrumental measurements available for the past two centuries, paleoclimate observations spanning more than a millennium and comparisons of the predictions from computer models with observed patterns of climate change. The lecture will then address future likely impacts of human-induced climate change, including possible influences on sea level rise, severe weather and water supply. The lecture will conclude with a discussion of possible solutions to the climate change problem.

4:40 p.m.-5:00 p.m. Questions and discussion

5:00 p.m.-6:00 p.m. Reception in the Hall of Anthropology and Archaeology

Additional Programming

Flintknapping Demonstration (Auditorium Foyer), Steve Nissly

This presentation will feature an expert flintknapper who will demonstrate how stone tools were made by Native Americans in Pennsylvania during prehistoric times.

Artifact Identification (Susquehanna Room), Doug McLearen, Chief, Archaeology and Protection and Kira Heinrich, Bureau for Historic Preservation

These individuals have over 50 years of experience with archaeological artifacts. Bring in your historic or prehistoric artifacts for identification and analysis by the experts.

Site Recording in Cultural Resources Geographic Information System (Susquehanna Room), Noel Strattan and Tom Held, Bureau for Historic Preservation

Recording of archaeological sites is an essential task in protecting and preserving our archaeological resources. Assistance in recording your archaeological sites will be provided by these qualified individuals.



2014 ANNUAL WORKSHOPS IN ARCHAEOLOGY PROGRAM

8:30 a.m. – 9:00 a.m. Registration (Foyer to the Auditorium)

All sessions listed below will be held in the Auditorium of the State Museum

9:00 a.m. – 9:10 a.m. Opening remarks - David Dunn, Director, The State Museum of Pennsylvania

9:10 a.m. – 9:50 a.m. **Session 1** Environmental Overview: Paleoenvironments of Pennsylvania from the Late Glacial Advance to the Present - Frank Vento

9:50 a.m. – 10:30 a.m. **Session 2** The Solutrean Connection - Dennis Stanford

10:30 a.m. – 10:45 a.m. Break (Foyer to the Auditorium)

10:45 a.m. – 11:25 a.m. **Session 3** Pre-Clovis Adaptations in the Americas - J.M. Adovasio

11:25 a.m. – 11:45 p.m. Questions and discussion

11:45 a.m. – 1:00 p.m. Lunch (on your own)

1:00 p.m. – 1:40 p.m. **Session 4** Paleoindians and the Younger Dryas Climatic Episode - Jonathan C. Lothrop

1:40 p.m. – 2:20 p.m. **Session 5** The Archaic Period: The Transition to the Holocene, Population Growth and Cultural Diversity - Christopher Bergman

2:20 p.m. – 3:00 p.m. **Session 6** Transitional Period: The Mid-Holocene Warm and Dry Episode - Heather Wholly

3:00 p.m. – 3:20 p.m. Break (Foyer to the Auditorium)

3:20 p.m. – 4:00 p.m. **Session 7** Warming, Cooling and Agricultural Evolution - John P. Hart

4:00 p.m. – 4:40 p.m. **Session 8** Dire Predictions: Understanding Global Warming - Michael Mann

4:40 p.m. – 5:00 p.m. Questions and discussion

5:00 p.m. – 6:00 p.m. Reception in the Hall of Anthropology and Archaeology

Additional Programming

9:00 a.m. – 12:00 p.m. Flintknapping Demonstration - Auditorium Foyer

9:00 a.m. – 4:00 p.m. Site Recording in Cultural Resources Geographic Information System - Susquehanna Room

1:10 p.m. – 3:30 p.m. Artifact Identification - Susquehanna Room

Register by completing the attached form. Mail it and your check made payable to **Pennsylvania Archaeological Council** to:
Workshops in Archaeology
The State Museum of Pennsylvania
300 North Street
Harrisburg, PA 17120-0024

Workshop Registration Form

Registration Fee:
\$25.00 Early Registration (Oct. 31)
\$15.00 Student
\$15.00 Heritage Society, SPA and PAC Members
Registration at Door \$35.00
No Discounts at Door

Registrant Name(s) _____

Affiliation, if applicable _____

Contact Information: _____

(Street) _____

(State) _____

(Zip) _____

Phone (Home) _____

(Work) _____

Boxed Lunch Option; must pre-order and pay in advance. _____ **\$8.00 per lunch**
Each option comes with fruit cup, cookie, chips and beverage

Option #1: Wrap - Whole wheat - American cheese **Turkey and parmesan garlic spread**
 Ham and honey mustard spread

Option #2: Kaiser roll - American cheese **Turkey** **Ham** **Roast beef**

Total Amount Enclosed: \$ _____

Make check payable to: **Pennsylvania Archaeological Council (PAC)**
and mail to: **Workshops in Archaeology**
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