

National Science Foundation Research Grant “Gateway to the Americas” Awarded to the Maxwell Museum

The Maxwell Museum received a \$43,914 award, “Gateway to the Americas”, in April 2009 from the National Science Foundation’s (NSF) Office of Polar Programs. Gateway to the Americas is designed to search for submerged archeological sites on the continental shelf of Southeast Alaska dating to the last Ice Age that may be more than 14,000 years old.

Dr. James Dixon, Director of the Maxwell Museum and Professor of Anthropology at UNM, is the Principal Investigator. He will be assisted by UNM Anthropology graduate student Kelly Monteleone, and work in partnership with a team from the Norwegian University of Science and Technology, Museum of Natural History and Archaeology, Trondheim, Norway. The Norwegian team brings state of the art high latitude cold-water underwater archeological expertise to the underwater survey, which will take place in the summer of 2010. Members of the United States Forest Service’s Tongass National Forest will also participate in the project.

Native American oral histories, recent discoveries by fishermen of artifacts on the ocean floor, and refined paleoenvironmental and geological data, may make it possible to identify specific locales where ancient submerged sites may be located. In cooperation with other team members, Kelly Monteleone will develop a Geographic Information Systems (GIS) model to help guide the search for ancient underwater sites. Specific areas will be surveyed using remotely operated vehicles (ROVs), multibeam sonar, grab sampling, and hydraulic screening.

During the last Ice Age (Pleistocene) glaciers stretched from the western slopes of the Canadian Rocky Mountains in the west to the Atlantic Ocean in the east. This created an impenetrable icescape that blocked the southward movement of humans who had migrated from Asia and reached Alaska. However, archeological sites located south of North America’s continental glaciers have been accurately dated prior to the melting of the ice. These facts have led some archeologists to explore new theories in an effort to explain how humans first reached the southern areas of North America.

The Pleistocene was a time when vast amounts of the earth’s water were trapped in glaciers. This lowered global sea level and exposed the continental shelf along the west coast of the Americas. When the massive glaciers melted, sea level rose and submerged the ancient coast. Some archeologists postulate that this ancient submerged coast may have provided a route for the very first people to enter North America. This hypothesis suggests that between 16,000 and 12,000 years ago humans using watercraft may have colonized refugia (areas that were not glaciated during the last Ice Age) and deglaciated areas of the continental shelf. If this hypothesis is correct, some of the oldest archeological sites in North America may be located underwater on the western continental shelf of the continent.

The NSF grant to the Maxwell museum provides an opportunity to begin testing this hypothesis. High-risk research projects such as this hold the potential to revolutionize traditional interpretations of North American archeology. It places the Maxwell Museum in the forefront of scientific research directed to enhancing our understanding of humans as colonizers and how, when and why the American continents were first colonized by people.



UNM Anthropology graduate student, Kelly Monteleone, at work in a Maxwell Museum research laboratory. Ms. Monteleone is developing a geographic information system model to help guide the search for ancient underwater archeological sites on the continental shelf of Southeast Alaska.

Archeology on Ice

As a result of climate change, rare archeological materials are melting from ancient glaciers and ice patches worldwide. Some of the spectacular organic artifacts that have been found include prehistoric bows and arrows, spears, hunting tools, baskets, clothing, and even human remains. These unusual discoveries have been preserved and frozen in ice for thousands of years and provide an unprecedented glimpse into the lives of ancient people and have captured public attention around the world.

Ice patches are comparatively small areas of perennial ice that occur along the margins of high plateaus and other large landforms. Caribou and sheep use these small glaciers during the summer to escape from heat and insects and to drink fresh water from the melting ice. People have hunted these animals at some ice patches for thousands of years. Many of the artifacts they left or lost on the ice became frozen and are perfectly preserved. This is important because archeologists usually only find non-perishable artifacts such as stone and pottery. These small glaciers are exceptional because they preserve examples of perishable artifacts made of bark, wood, and leather. The recovery and study of these rare artifacts provides new insights into the ecological role of small glaciers in the life-ways of ancient people in high altitude and high latitude environments.

E. James Dixon, Maxwell Museum Director and Professor of Anthropology is completing the third year of a five-year grant from the National Science Foundation Office of Polar Programs to identify ice patches most likely to contain and preserve artifacts in Alaska's Wrangell-St. Elias National Park. With the

funding from the National Science Foundation, several small glaciers are being revisited and surveyed annually by Dixon along with, Native American participants affiliated with the Ahtna Heritage Foundation and UNM graduate students Nick Jarman and Michael Grooms. This research was expanded in 2008 to include Alaska's Lake Clark National Park and Preserve under a five-year cooperative agreement with the National Park Service. Collectively these research projects have received more than \$1,150,000 in funding from both the National Science Foundation and National Park Service and will continue until 2012.

Lake Clark National Park has been at times home to one of the largest caribou herds in Alaska. In 2008, UNM and NPS archaeologists conducted aerial reconnaissance of the Park's ice patches and small glaciers. In cooperation with NPS archeologist Jeanne Schaaf, the research team will conduct a helicopter-supported pedestrian survey of promising ice patches in 2009. These projects provide financial support and training for three UNM graduate students - Nicolas Jarman, Michael Grooms, and Kelly Monteleone.



Archeological survey at an Alaskan ice patch. Organic artifacts exposed on the surface (foreground) recently exposed by the melting ice patch.

The study of ice patches and the artifacts and biological specimens they contain, provides valuable knowledge for studying environment, climate, and culture change through time. The projects incorporate the partnership of local Athapaskan tribal groups and individuals. Native people participate in the archeological surveys and have shared their knowledge. This research expands the scope of an exciting new international research frontier incorporating both archeology and climate change, and creates new opportunities for students at the University of New Mexico.