

# OUR CHANGING WORLD

UNDERSTANDING THE SCIENCE OF CLIMATE CHANGE

“The Arctic is now experiencing some of the most rapid and severe climate change on earth. Over the next 100 years, climate change is expected to accelerate, contributing to major physical, ecological, social and economic changes, many of which have already begun. Changes in Arctic climate will also affect the rest of the world through increased global warming and rising sea levels.”

– Arctic Climate Impact Assessment, “Impacts of a Warming Arctic”

**Special thanks to the University of Maine's Climate Change Institute**  
*Mission statement*

The Climate Change Institute is an interdisciplinary research unit organized to conduct world-class research, graduate education and environmental outreach focused on the variability of Earth's climate system, and on the interaction between humans and the natural world. Institute investigations cover the Quaternary Period, a time of numerous glacial/interglacial cycles and abrupt changes in climate, ranging in time from the present to nearly 2 million years ago. Research activities include field, laboratory and modeling studies that focus on the timing, causes and mechanisms of natural and anthropogenically forced climate change, and on the effects of past climate changes on the physical, biological, chemical, social and economic conditions of the Earth. Institute research is supported by grants from a variety of sources including the National Science Foundation, the National Oceanic and Atmosphere Administration, the National Aeronautics and Space Administration, and an endowment from the Bingham Trust.

To accomplish its goal of better understanding climate change and its impact on humans and ecosystems the institute includes faculty, staff and students from the departments of Anthropology, Biological Sciences, Computer Science, Earth Sciences, History and Marine Sciences. Facilities include the Stable-Isotope Laboratory, the Ice Core Microparticle and Tephronchronology Laboratory, the Ion Chromatography and Glaciochemistry Laboratory, the Marine Geology/Geophysics and Geographic Information Systems Laboratory, the Micropaleontology Laboratory, the Laboratory for Paleocology and Paleohydrology, the Zooarchaeology Laboratory, the Laboratory for Northeastern Prehistory and the Andean Archaeology Laboratory.

Institute research is of international scope and significance, and includes projects in the United States, Antarctica, Asia, Canada, Europe, Greenland, New Zealand, South America, and many regions of the world's oceans. The institute maintains a strong program of international collaboration with a variety of organizations including: Stockholm University, the Chinese Academy of Sciences, the Government of Nepal's Department of Hydrology and Meteorology (Nepal), the Russian Academy of Sciences and the Canadian Geological Survey. The institute has a tradition of honorary members, including the late Thor Heyerdahl.

Field, laboratory and modeling aspects of the institute's research routinely involve graduate and undergraduate students. Find out more about the Climate Change Institute at [www.ume.maine.edu/iceage/](http://www.ume.maine.edu/iceage/)

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A SPECIAL REPORT  
BY THE BANGOR DAILY NEWS

IN COLLABORATION WITH THE UNIVERSITY OF MAINE'S  
CLIMATE CHANGE INSTITUTE

Cover photograph  
An iceberg melts in Kulusuk, Greenland, near the Arctic Circle on Aug. 16, 2005. Scientists say that global warming has an increasing effect on the Arctic region by shrinking glaciers, raising water temperatures and softening the permafrost.  
– John McConnico/The Associated Press

