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### From the Director

CLIMATE CHANGE INSTITUTE SCIENTISTS conduct climate change research around the globe — from the deserts and highlands of Peru throughout the Andes, throughout the glaciers of the Arctic onto the summit of Greenland, throughout the Himalayas and the Tibetan Plateau, across the vast Antarctic continent, to the rocky shores of Maine.

CCI's work has led to important discoveries with far-reaching implications, such as the phenomena of **abrupt climate change** that revolutionized the field of climate science in the early 1990s; the contribution of **marine-based ice sheets** to past and future sea-level rise; documented **retreat of glaciers** in Antarctica, Greenland, South America, Asia and New Zealand over the last few decades with implications for sea-level rise, water resources and ocean circulation; a **framework for assessing climate change**; demonstration of the **unprecedented rise in human source pollutants** over the last century; and the impact of **climate change on humans and ecosystems**.

CCI researchers have extensive field experience and expertise to tackle critical, complex issues related to climate change and human adaptations to changing climates. These issues are extremely challenging, but they are particularly well suited to the character of the Climate Change Institute. Physical, chemical and biological climate change issues are deeply embedded in the fabric of local to global-scale concerns about economy, health and overall quality of life. Change in the physical and chemical characteristics of the climate system is compelling, and understanding the state of current and future levels of human source pollutants, including greenhouse gases, acids, toxic metals and radioactivity, will define our reality and opportunities in the future.

OUR MISSION continues to evolve as CCI researchers probe further into the complexities and implications of Earth's changing climate, and as we strive to provide unique scientific products:

#### Long-term Perspective

in the form of records of past climate (ice cores, lake sediment cores, glacial deposits, human adaptation) from around the world.

#### Climate Prediction and Planning

from local to global, long-term to abrupt scales through highly detailed and innovative analysis of climate records within climate modeling perspectives. Positive Policy Implications, such as environmental and renewable founded on sound science.

#### Technological Advances

in environmental monitoring, processing and analyses of archives containing physical and chemical climate information, and cyberinfrastructure needed to interpret climate data.