The Union College Distinguished Science and Engineering Lecture Series presents:

EXPLORING OUR CHANGING POLES

DR. ROBIN ELIZABETH BELL
PGI Senior Research Scientist
Lamont-Doherty Earth Observatory of Columbia University

- **Tuesday, April 20, 2010, Union College**
- **4:45-5:45 PM, Olin Center Auditorium**
- Sponsors: Skidmore-Union ADVANCE Network Project, Union College Department of Geology

Abstract: The polar ice sheets are changing. As the land-based ice sheets of Greenland or Antarctica melt or fall into the sea, sea levels will rise globally. Liquid water forms at the base of the ice sheets, where it "greases" their slide toward the sea. During the International Polar Year 2007-9 a team of scientists from 7 nations headed to the top of the largest ice sheet on Earth. Using two research aircraft flying over the center of the Antarctic ice sheet, we discovered lakes and rivers nestled in a mountain range larger than the Adirondack. This hidden plumbing system pushes water up the river valleys, forming lakes high along the mountain ridges where the water freezes to the base of the ice sheet and is carried away towards the global oceans.

Biographical Information: Robin E. Bell is the PGI Senior Research Scientist at Columbia University's Lamont Doherty Earth Observatory where she leads major programs in polar science. Bell has over 23 years of experience in the study of polar environments. She is the principle Investigator of NSF-funded and NASA-funded projects in Antarctica, and Greenland. She has authored over 60 peer-reviewed publications, including 5 in *Nature* and 1 in *Nature Geosience*. She served an 8-year term Member of the National Academy of Sciences Polar Research Board including 6 years as chair during the planning of the International Polar Year. In her role as Chair of the Polar Research Board she was a major player in US and global development of International Polar Year. During the IPY 2007-9 she was the lead scientist on a 7 major polar expeditions including the International Polar Year Program to explore Antarctica's Dome A and the Gamburtsev Mountains. Bell has been an innovator of aerogeophysics, particularly airborne gravity, gravity gradiometry techniques and integrated sensor technologies. She conducted the first academic experimental demonstration of gravity with small aircraft and founded start-up using gravity gradiometry technology for oil and gas exploration. With support from New York State, Bellhas mapped the entire Hudson River from Staten Island to Troy. Bell with co-workers from NASA, University of Washington and Lamont, discovered major subglacial lakes linked to onset fast ice flow. Bell has advanced the concept of geologic control on ice stream onset and developed first systemic flux estimates through subglacial Lake Vostok. Bell has recently completed a NSF supported $5M 5 year program to enhance diversity in science and engineering. Bell is keenly interested in the role of subglacial hydrology in ice sheet stability.