Biographical Sketch

Howard Conway
Research Professor
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Professional Preparation

1972	B.E. in Chemical Engineering, University of Canterbury, N.Z.
1986	Ph.D. in Chemical Engineering University of Canterbury, N.Z.
1987 – 1991	Post-doctorate of Geophysics, University of Washington, Seattle, USA.

Appointments

2002 -	Research Professor of Earth and Space Sciences, University of Washington, Seattle, USA.
1997 - 2002	Research Associate Professor of Geophysics, University of Washington, Seattle, USA.
1991 - 1997	Research Assistant Professor of Geophysics, University of Washington, Seattle, USA.
1989 - 1990	Research Associate, California Institute of Technology, USA.
1979 – 1986	Research Associate, University of Maine (Orono), USA.

Professional contributions

- International Glaciological Society: Western USA correspondent
- Scientific Committee on Antarctic Research - Antarctic Climate Evolution: LGM-Holocene sub-committee
- U.S. Ice core working group committee
- American Association of Avalanche Professionals: Research committee

Honors and Awards

- Conway Ridge, West Antarctica (2004). Named by the U.S. Advisory Committee on Antarctic Names
- New Zealand Mountain Safety Award (2002). In recognition for concern for the safety of others, sharing outdoor knowledge and experience, and service to the community

Synergistic activities

- Development of collaborations (both national and international) with researchers in atmospheric science, geology, glaciology and glacial geology. Synthesis of geophysical and glaciological data from Antarctica.

- Public dissemination of research findings through press, radio and television interviews. Workshops for avalanche technicians and National Park Rangers. Seminars and presentations at public and scientific meetings.
- Mentoring of undergraduate, graduate and post-doctoral students. Promotion of experiential learning by involving students in fieldwork and glaciological projects in Antarctica, Patagonia, Himalaya, the Cascade and Olympic Mountains of USA. Helped support, supervise and served on graduate committees for: Ginny Catania, Kurt Cuffey, Tony Gades, Jordy Hendrikx, Hans-Peter Marshall, David Morse, Nadine Nereson, Tom Neumann, Erin Pettit, Steve Price, Summer Rupper and Lhakpa Sherpa, Ben Smith (all now graduated), Claire Todd, and current PhD students: Michelle Koutnik, Jessica Lundin, Joe McGregor, Kristin Poinar, and Donovan Power.

Research interests

My research focuses on observing and modeling physical processes in the cryosphere. In particular, I study the behavior of snow and ice masses and their impacts on society and their response to the environment. My research is interdisciplinary. On-going research includes:

1. Flow history and stability of the Antarctic Ice Sheet

Recent measurements show that parts of the West Antarctic ice sheet are now undergoing rapid and dramatic change, but it is not clear whether the changes are manifestations of natural short-term variability or impending collapse. Our ongoing studies use geophysical methods and models to infer the flow history of the ice sheet.

2. Climate-glacier interactions

Glacier records contain a non-linear transformation of climate. My research is directed toward understanding climate-glacier interactions with the goal of using the glacier record to interpret patterns of past climate, useful for predicting future response. Collaborating colleagues are from University of Alaska, Jet Propulsion Laboratory, Nagoya University (Japan), University of Stockholm, Norwegian Water and Energy (NVE) Directorate, and Universidad de Magallanes (Chile).

3. Timing, size and impact of snow avalanches

Snow avalanches have a major impact on society, primarily through indirect costs associated with mitigation, litigation, insurance, and loss of both travel and business opportunities. Over the past decade my students and I have worked with avalanche technicians at Snoqualmie Pass and the Milford Road to improve predictions of the timing of avalanche release.

Recent collaborators

Kurt Cuffey (University of California, Berkeley)
George Denton (University of Maine)
Brenda Hall (University of Maine)
Bernard Hallet (University of Washington)
Richard Hindmarsh (British Antarctic Survey)
Ian Joughin (University of Washington)
David Morse (University of Texas)
Felix Ng (Massachusetts Institute of Technology)
Ted Scambos (University of Colorado, Boulder)
Al Rasmussen (University of Washington)
Charlie Raymond (University of Washington)
Eric Rignot (Jet Propulsion Laboratory, California Technical Institute)
John Stone (University of Washington)
John Sylvester (University of Washington)
Ed Waddington (University of Washington)
Dale Winebrenner (University of Washington)

Selected Publications

Catania, G., T.A. Scambos, H. Conway and C.F. Raymond, 2006. Sequential stagnation of Kamb Ice Stream, West Antarctica. *Geophys. Res. Letts.* **33** L14502, doi:10.1029/2006GL026430.

Catania, G., H. Conway, C.F. Raymond and T.A. Scambos, 2006. Evidence for grounding-line fluctuations prior to the stagnation of Kamb Ice Stream, West Antarctica. *J. Geophys. Res.* **111** F01005, doi:10.1029/2005JF000355.

Catania, G., H. Conway, C.F. Raymond and T.A. Scambos, 2005. Surface morphology and internal layer stratigraphy in the downstream end of Kamb Ice Stream, West Antarctica. *J. Glaciology*, **51**(174), 423-431.

Conway, H., B. Smith, P. Vaswani, K. Matsuoka, E. Rignot and P. Claus, *Submitted*. Airborne radar sounding of Alaskan outlet glaciers. *Annals Glaciol.*

Conway, H., G. Catania, C. F. Raymond, A. M. Gades, T. A. Scambos and H. Engelhardt, 2002. Switch of flow direction in an Antarctic ice stream. *Nature*, **419**, 465-467.

Conway, H., B.L. Hall, G.H. Denton, A.M. Gades and E.D. Waddington, 1999. Past and future grounding-line retreat of the West Antarctic Ice Sheet. *Science*, **286**, 280-283.

Conway, H. and C. Wilbour, 1999. Evolution of snow slope stability during storms. *Cold Reg. Sci. and Tech.*, **30**(1-3), 67-77.

Conway, H., L.A. Rasmussen and H.-P. Marshall, 1999. Annual mass balance of Blue Glacier, USA: 1957-97. *Geografiska Annaler*, **81A**(4), 509-520.

Cuffey, K.M., H. Conway, A.M. Gades, H. Hallet, R. Lorrain, J.P. Severinghaus, E.J. Steig, B. Vaughn and J.W.C. White, 2000. Entrainment at cold glacier beds. *Geology*, **28**(4), 351-354.

Neumann, T.A., H. Conway, S. Price, E.D. Waddington and D.L. Morse, 2008. Holocene accumulation and ice-sheet dynamics in central West Antarctica. *J. Geophys. Res.,* 113, doi:10.1029/2007JF000764

Ng, F. and H. Conway, 2004. Fast-flow signature in the stagnated Kamb Ice Stream, West Antarctica. *Geology*, **32**(6), 481-484.

Price, S.F., H. Conway, E.D. Waddington and R.A. Bindschadler, 2008. Model investigations of inland migration of fast-flowing outlet glaciers and ice streams. *J. Glaciol.***54**(184), 49-60

Price, S.F., H. Conway and E.D. Waddington, 2007. Evidence for late Pleistocene thinning of Siple Dome, West Antarctica. *J. Geophys. Res.*.**112**, doi:10.1029/2006JF000725

Rasmussen, L.A., H. Conway and C. F. Raymond, 2007. Influence of upper air conditions on the Patagonia Ice Fields. *Global and Planetary Change,* **59**, 203-216.

Rasmussen, L.A., L.M. Andreassen and H. Conway, 2007. Reconstruction of mass balance of glaciers in southern Norway back to 1948. *Annals Glaciol.*, **46,** 255-260.

Rasmussen, L.A. and H. Conway, 2005. Influence of upper-air conditions on glaciers in Scandinavia, *Annals Glaciol.*, **42**, 402-408.

Rasmussen, L.A. and H. Conway, 2004. Climate and glacier variability in western North America. *J. Climate*, **17**(9), 1804-1815

Waddington, E.D., H. Conway, E. Steig, R.B. Alley, E.J. Brook, K.C. Taylor and J.W.C. White, 2005. Decoding the dipstick: thickness of Siple Dome, West Antarctica, at the last glacial maximum. *Geology*, **33**(4), 281-284