

## Citation for Richard Alley

The Awards Committee unanimously nominates Richard Alley, Evan Pugh Professor of Geosciences at the Pennsylvania State University, as the next recipient of the Seligman Crystal for his prodigious contribution to our understanding of the stability of the ice sheets and glaciers of Antarctica and Greenland, and of erosion and sedimentation by this moving ice. Through the interpretation of paleoclimatic records from ice cores, Prof. Alley has examined their response to past and future climate change. He has provided evidence that large, abrupt global climate changes have occurred repeatedly in the Earth's history and has contributed to our understanding of the driving mechanisms of these changes.

Professor Alley received his BSc, and MSc from the Geology Department of Ohio State University. His PhD, completed in 1987, was carried out at the Geology Department of University of Wisconsin-Madison, where he was mentored by experts such as Charles Bentley. After a short stint as a post-doc in Wisconsin, he was appointed to the faculty of the Pennsylvania State University, where he became Evan Pugh Professor of Geosciences in 2000.

Prof Alley has over 150 refereed publications, including numerous papers in high profile journals such as *Nature*, *Science*, and *Scientific American*. He has mentored more than 16 post-doctoral and graduate students and has won accolades for his undergraduate teaching (for example, Wilson EMS Teaching Award). His research efforts have been recognized by the Pennsylvania State University through their award of a Faculty Scholar Medal. Further, he has already received a number of awards from other organizations: the Horton Award of Hydrology Section of the American Geophysical Union, the D.& L. Packard Fellowship, and Presidential Young Investigator Award. He presented the Nye lecture to American Geophysical Union in December 2004. He even has a glacier named after him, the Alley Glacier in the Britannia Range of the West Antarctic Ice Sheet, in honour of his study of ice streams.

He has a high public profile with more-than weekly interviews to TV and radio, in addition to educational outreach. This visibility has been fueled by his award-winning book *The Two-Mile Time Machine: Ice Cores, Abrupt Climate Change, and Our Future*, published by Princeton University Press in 2000. He frequently provides advice to a very senior level in U.S. Government on research activities to address the possibility of climate surprises (*Abrupt Climate Change: Inevitable Surprises*, National Academy Press, 2002). He has disseminated this information to a wider audience in *Science*.

His contribution to the glaciological community includes the 2001 editorship of AGU publication, Alley, R.B. and R.A. Bindshadler, eds., *The West Antarctic Ice Sheet: Behavior and Environment*, American Geophysical Union, Antarctic Research Series v. 77, and as the chair of the National Research Council panel on Abrupt Climate Change, which produced *Abrupt Climate Change: Inevitable Surprises*, National Academy Press,

2002. He has served or is serving on a multitude of panels and advisory bodies to improve national and international research (Abrupt Climate Change panel, National Academy of Sciences; Polar Research Board, National Academy of Sciences; Paleoceanography and Paleoclimatology Panel of American Geophysical Union; International Commission on Snow and Ice Working Group on Physics of Ice-Core Records; Earth System History Advisory Committee to the National Science Foundation; the West Antarctic Ice Sheet Project Executive Committee; WAISCORES West Antarctic Ice Sheet Coring Executive Committee; Ice Core Working Group; West Antarctic Ice Sheet and West Antarctic Ice Cores Projects; NOAA Abrupt Climate Change Panel; Polar Research Board) as well as serving on the editorial boards of *Quaternary Research* and *Geology*.