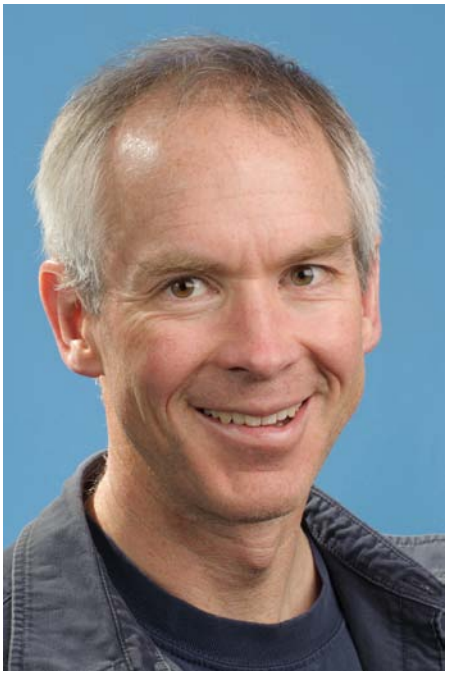

Shawn Marshall

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Education
PhD, University of British Columbia
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Research Areas / Keywords
Glaciology, climatology, paleoclimate, glacial cycles, computational methods, geophysical fluid dynamics, earth system history, climate/cryosphere interactions

Biography
Marshall received his PhD in Geophysics, in studies with Garry K.C. Clarke from the University of British Columbia, where he did doctoral research (1991-1996) and post-doctoral studies (1997-1999). He and Clarke have explored numerous aspects of ice age climate dynamics, including the climatic and glaciological patterns of ice sheet nucleation, reconstruction of the Last Glacial Maximum ice sheets in North America, processes of deglaciation at the end of the glacial periods, and the role of ice sheets in millennial climate variability. This work has expanded into collaborations with Peter Clark (Oregon State University) and Kurt Cuffey (University of California, Berkeley) to examine other aspects of Laurentide and Greenland Ice Sheet dynamics. Marshall moved to the Department of Geography at the University of Calgary in 2000, where he continues his work with ice sheet modelling. This includes current projects to couple glaciological models with GCMs (joint with Andy Bush at the University of Alberta, Andrew Weaver at the University of Victoria, and Bette Otto-Bliesner at NCAR). He also continues to collaborate with Garry Clarke and Gwenn Flowers (Simon Fraser University, Vancouver) to improve the representation of subglacial processes in ice sheet models.

Research Interests
Shawn Marshall's research interests include regional-scales icefield dynamics and their sensitivity to climate change. This has provided him with an escape from my computer to new field projects on the Haig Glacier, Canadian Rockies, and the Prince of Wales Icefield, Ellesmere Island (Canadian High Arctic). These projects are focused on glacier-climate processes and mesoscale climate variability, including melt modelling and improved understanding of surface temperature lapse rates in glacierized terrain. Field studies are specifically targeted to improve the quantification of free parameters and climate (temperature, precipitation) downscaling strategies that are required for glacier-climate modelling. Insights will be applied to regional- and global-scale icefield simulations, to improve forecasts of the water resource and sea-level rise impacts that are expected from ongoing glacier retreat in the decades ahead.