

PROFESSIONAL EXPERIENCE

Climate Ocean and Sea Ice Modeling (COSIM) project

Fluid Dynamics and Solid Mechanics Group

Los Alamos National Laboratory

Los Alamos, NM (4/2010-present)

Title: Scientist II

Duties: Development and application of three-dimensional, predictive ice-flow models for the purpose of predicting changes in global sea level as a result of changes in ice sheet volume.

Climate Ocean and Sea Ice Modeling (COSIM) project

Fluid Dynamics and Solid Mechanics Group

Los Alamos National Laboratory

Los Alamos, NM (3/2008 – 4/2010)

Title: Post Doctoral Research Fellow

Duties: Development and application of three-dimensional, predictive ice-flow models for the purpose of predicting changes in global sea level as a result of changes in ice sheet volume.

Supervisors: Bill Lipscomb, Phil Jones

Bristol Glaciology Centre

School of Geographical Sciences

University of Bristol

Bristol, U.K. (8/2006 – 2/2008)

Title: Post Doctoral Research Associate

Duties: Development and application of a higher-order, three-dimensional, ice-flow model of the Greenland ice sheet for the purpose of understanding current and future changes in ice sheet volume.

Supervisor: Tony Payne

The Department of Earth and Space Sciences

University of Washington

Seattle, Washington (6/2001 – 6/2006)

Title: Graduate Research and Teaching Assistant

Duties: Development and application of higher-order, two-dimensional, ice-flow models for the purpose of interpretation of ice-core records and radio-echo sounding data, ice-core site selection, and investigations into the controls on ice-stream flow; scientific programming; scientific writing for journal publication; presentations at scientific conferences; preparing and presenting lecture and lab materials for undergraduate courses in earth science

Advisors: Howard Conway, Edwin Waddington

SAIC General Sciences Corporation, NASA Goddard Space Flight Center

Greenbelt, MD (9/1998 – 6/2001)

Title: Programmer/Analyst

Duties: Support of physical glaciology research including: polar field work; GPS surveying and processing; shallow ice core recovery/processing; scientific programming for data processing and analysis; scientific writing for journal publication

Supervisor: Patricia Vornberger (SAIC-GSC), Robert Bindshadler (NASA)

Byrd Polar Research Center and Department of Geological Sciences

The Ohio State University, Columbus, OH (1/1996 - 9/1998)

Title: Graduate Research Assistant

Duties: Support of physical glaciology research including: polar field work; GPS surveying and processing; shallow

ice core recovery/processing; satellite image processing and analysis; computer programming for data processing

and analysis; scientific writing for journal publication

Advisors: Ian Whillans (academic and field research), Gordon Hamilton (field research)

Juneau Icefield Research Program, University of Idaho and University of Alaska, S.E.
Alaska/British Columbia (6/1996 - 8/1996)

Title: Graduate Teaching Assistant

Duties: Assistance in supervising college undergraduate and high school student summer research in geology and glaciology; field party leadership; facilities and logistic operations

Supervisor: Maynard Miller (JIRP), Gretchen Weeks (field and facilities support)

EDUCATION

The University of Washington: Ph.D. Geophysics (10/2006)

The Ohio State University: M.Sc. Geology (12/1998)

The University of North Carolina at Wilmington: B.Sc. Geology (7/1995)

SCHOLARSHIPS & AWARDS

- National Academy of Sciences Kavli Fellow, 2008
- Los Alamos National Laboratory, Directors Postdoctoral Fellow, 2008
- David Johnston Scholarship, Dept. of Earth and Space Sciences, Univ. of Washington, 2002
- Ohio State University Dept. Geological Sciences, Graduate Student Achievement award
- North Carolina Systems Wide Field Camp scholarship, 1995
- REU scholarship, 1994, Juneau Icefield Research Program
- UNCW Dept. of Earth Sciences, Student Achievement award, 1994

PROFESSIONAL SOCIETIES

American Geophysical Union

European Geophysical Union

International Glaciological Society

COMMUNITY INVOLVEMENT

CISM (Community Ice Sheet Model) steering committee member and lead developer

NCAR Land Ice Working Group community liaison

Portland State Univ. Ice Sheet Modeling Summer School instructor

Member U.S. CLIVAR working group on ice sheet / ocean interactions in Greenland

CONTACT INFORMATION

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COSIM project

Fluid Dynamics and Solid Mechanics Group

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PUBLICATIONS (published)

- Price, S.F.**, A.J. Payne, I.M. Howat, and B.E. Smith. 2011. Committed sea-level rise for the next century from Greenland ice sheet dynamics during the past decade. *PNAS*, doi:10.1073/pnas.1017313108.
- Price, S.F.**, G. Flowers, and C. Schoof. 2011. Improving hydrology in land ice models. *EOS*, **92**(19), 164.
- Price, S.F.** 2009. From the front. *Nature Geosc.*, **2**(1), doi:10.1038/ngeo424.
- Price, S.F.**, A.J. Payne, G.A. Catania, and T.A. Neumann. 2008. Seasonal acceleration of inland ice via longitudinal coupling to marginal ice. *J. Glaciol.*, **54**(185), 213-219.
- 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.**, E.D. Waddington, and H. Conway. 2007. A full-stress, thermomechanical flowband model using the finite-volume method. *J. Geophys. Res.*, **112**, F03020, doi:10.1029/2006/JF000724.
- Price, S.F.**, H. Conway, and E.D. Waddington. 2007. Evidence for late Pleistocene thinning of Siple Dome, West Antarctica. *J. Geophys. Res.*, **112**, F03021, doi:10.1029/2006/JF000725.
- Price, S.F.** and J.S. Walder. 2007. Modeling the Dynamical Response of a Crater Glacier to Lava-Dome Emplacement Mount St. Helens, Washington, U.S.A. *Ann. of Glaciol.*, **45**, 21-28
- Price, S.F.**, R.A. Bindschadler C.L. Hulbe, and D.D. Blankenship. 2002. Force balance along an inland tributary and onset to Ice Stream D, West Antarctica. *J. Glaciol.* **48**(160), 20-30.
- Price, S.F.**, R.A. Bindschadler, C.L. Hulbe and I. Joughin. 2001. Post-stagnation behavior in the upstream regions of Ice Stream C, West Antarctica. *J. Glaciol.*, **47**(157), 283-294.
- Price, S.F.** and I.M. Whillans. 2001. Crevasse patterns at the onset to Ice Stream B, West Antarctica. *J. Glaciol.*, **47**(156), 29-36.
- Price, S.F.** and I.M. Whillans. 1998. Delineation of a catchment boundary using velocity and elevation measurements. *Ann. Glaciol.*, **27**, 140-144.
- Leng, W., L. Ju, M. Gunzburger, **S. Price**, and T. Ringler. 2012. A Parallel High-Order Accurate Finite Element Nonlinear Stokes Ice-Sheet Model and Benchmark Experiments. *J. Geophys. Res.*, **117**, F01001, doi:10.1029/2011JF001962.
- Bougamont, M., **S. Price**, P. Christoffersen, and A.J. Payne. 2011. Dynamic patterns of ice stream flow in a 3d higher-order ice sheet model with plastic bed and simplified hydrology. *J. Geophys. Res.*, **116**, F04018, doi:10.1029/2011JF002025.
- Dukowicz, J. K., **S.F. Price**, and W. H. Lipscomb. 2011. Incorporating arbitrary basal topography in the variational formulation of ice sheet models. *J. Glaciol.* **57**(203), 461-467.
- Lemieux, J.F., **S.F. Price**, K.J. Evans, D. Knoll, A.G. Salinger, D. Holland, and A.J. Payne. 2011. Implementation of the Jacobian-Free Newton-Krylov method for solving the first-order ice sheet momentum balance. *J. Comput. Phys.*, **230**, 6531-6545, doi:10.1016/j.jcp.2011.04.037.
- Zhang H., L. Ju, M. Gunzburger, T. Ringler, and **S. Price**. 2011. Coupled models and parallel simulations for three-dimensional full Stokes ice sheet modeling. *Numer. Math. Theor. Meth. Appl.* **4**, 396-418.
- Dukowicz, J. K., **S.F. Price**, and W. H. Lipscomb. 2010. Consistent approximations for ice-sheet dynamics from a principle of least action. *J. Glaciol.*, **56**(197), 480-496.
- Catania, G.A., T.A. Neumann, and **S.F. Price**. 2008. Characterizing englacial drainage in the ablation zone of the Greenland ice sheet. *J. Glaciol.* **54**(187), 567-578.
- Lipscomb, W.H., R.A. Bindschadler, E. Bueler, D. Holland, J.V. Johnson, and **S.F. Price**. 2008. A community ice sheet model for sea level prediction. *EOS*, **3**, 23.
- Neumann, T.A., H.B. Conway, **S.F. Price**, E.D. Waddington, G.A. Catania, and D.L. Morse. 2008. Holocene accumulation and ice-sheet dynamics in central West Antarctica, *J. Geophys. Res.*, **113**, F02018, doi:10.1029/2007JF000764.
- Pattyn, F., Perichon, L., Aschwanden, A., Breuer, B., de Smedt, B., Gagliardini, O., Gudmundsson, G. H., Hindmarsh, R., Hubbard, A., Johnson, J. V., Kleiner, T., Kononov, Y., Martin, C., Payne, A. J., Pollard, D., **Price, S.**, Ruckamp, M., Saito, F., Soucek, O., Sugiyama, S., and Zwinger, T. 2008. Benchmark experiments for higher-order and full-Stokes ice sheet models (ISMIP-HOM), *The Cryosphere*, **2**, 95-108.
- Joughin, I., S. Tulaczyk, R.A. Bindschadler, **S.F. Price**. 2002. Changes in west Antarctic ice stream velocities: Observation and analysis, *J. Geophys. Res.*, **107**(B11), 2289, doi:10.1029/2001JB001029.
- Joughin, I., L. Gray, R. Bindschadler, **S. Price**, D. Morse, C. Hulbe, K. Mattar and C. Werner. 1999. Tributaries of West Antarctic ice streams revealed by Radarsat interferometry. *Science*, **286** (5438), 283-286.

PUBLICATIONS (other)

Price, S.F. 1998. Studies in the catchment and onset regions of Ice Stream B, West Antarctica. (masters thesis, The Ohio State University.)

Price, S.F. 2006. Development and applications of a full-stress flowband model for ice. (Ph.D. thesis, University of Washington.)