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EDUCATION

2003 Ph.D. Geology, University of Wyoming. *Glaciological Observations Using Radio Echo-Sounding in Temperate and Cold Ice*

1996 M.S. Geology, University of Colorado at Boulder. *2-Dimensional and Pseudo 3-Dimensional Migration of Radio Echo-Sounding Data from Temperate Valley Glaciers*

1993 B.A. Geology, Middlebury College, VT. *Mafic Intrusions in the Adirondack Highlands, A Chemical and Petrographic Comparison*

1992 Jæren Folkehøgskule, Kleppe, Norway, Semester Abroad (Ecology and Environmental Policy).

PROFESSIONAL POSITIONS

9/2003 – present: Assistant Professor (non-tenure track), Physics and Environmental Studies, St. Olaf College.
Courses taught: ES255-GIS & Remote Sensing, ES245-Climate Change, ES137-Introduction to Environmental Studies, PH123-Geophysics, co-founded the campus-wide GIS User Group.

3/2005: Developed curriculum materials for adding GIS to introductory undergraduate geosciences courses for the Scientific Education Resource Center at Carleton College. (serc.carleton.edu)

7/2000 – 8/2003: Instructor, Physics and Environmental Studies, St. Olaf College.

RESEARCH & FUNDING

2006 – 2008: Co-principal investigator with Dr. Robert Jacobel to study the subglacial and englacial conditions of major outlet glaciers draining East Antarctica into the Ross Ice Shelf as part of the U.S. International Trans-Antarctic Scientific Expedition (US-ITASE 2) traverse program. (www.stolaf.edu/other/cegsic/itase2/)

2004 – 2006: Funded by the U.S.G.S. Alaska Volcano Observatory and N.S.F. to map the ice and subglacial melt water flow paths within the caldera of Mt. Veniaminof, an active stratovolcano on the Alaska Peninsula. (www.stolaf.edu/other/cegsic/veniaminof/)

2000 - 2003: Postdoctoral fellow at St. Olaf College and member of the US-ITASE 1 traverse program. Studies of englacial and subglacial conditions in central West Antarctica. (www.stolaf.edu/other/cegsic/itase/, www.secretsoftheice.org - outreach program)

1997 - 2000: Graduate Research Assistant/Teaching Assistant, Univ. of Wyoming. Field work in Alaska & Wyoming. Numerical modeling of geological and glacio-hydrological systems, radio echo-sounding, Geographic Information Systems (GIS) (research.gg.uwyo.edu/crag/).

1998 – 1999: Founder and organizer of Dept. of Geology & Geophysics Student Talk Series, Univ. of Wyoming

1994 – 1997: Graduate Research Assistant, INSTAAR, Univ. of Colo. Field work in Alaska & Colorado: radio echo-sounding on glaciers, optical & GPS surveys, seasonal snow pack & stream flow surveys.

1993: Cornell University, Department of Earth & Atmospheric Sciences, Curator of Geological Collections.

FELLOWSHIPS AND AWARDS

2000 - Ellbogen Award for Outstanding Graduate Teaching Assistant, University of Wyoming.

1997- 2000: Graduate Research Fellowship, Univ. of Wyoming

1994 - 1997: Graduate Research Fellowship, Institute of Arctic & Alpine Research, Univ. of Colorado

1993: Charles M. Dall Award for Best Undergraduate Presentation, Vermont Geological Society.

1993: All-East NCAA Division I Cross-Country Skiing

PROFESSIONAL AFFILIATIONS & JOURNAL REVIEWS

American Association for the Advancement of Science, American Geophysical Union

Journal of Geophysical Research, Journal of Glaciology, Annals of Glaciology, Arctic Antarctic & Alpine Research

COMPUTER & LANGUAGE SKILLS

- GIS, Remote Sensing, & Geophysical Technical Experience: ArcView v.8.x, ArcView Spatial Analyst, ArcView 3D Analyst, ENVI, GPS Instrumentation, EarthVision, SeismicUnix.
- Programming experience in MatLab, IDL, HTML, VisualBasic, C++, JavaScript, UNIX/Linux, and Excel.
- Extensive experience in UNIX/Linux, DOS, Macintosh, and Windows operating systems and networking.
- Website development and graphic design.
- Fluent in Norwegian (Bokmål), spoken and written.

OUTREACH & OTHER ACTIVITIES

2005-present: Lead GIS Users Group at St. Olaf College for faculty, staff, and students.

2000-present: Presentations of research activities and earth science to local schools (pre-school through Grade 12)

1993 (Fall): Head Coach of Cornell University Cross-Country Ski Team, Ithaca, NY

1992: Student Teaching: Earth Science & Environmental Science, Middlebury Union High School, Middlebury, VT

1992-1993: Teaching Assistant, Dept. of Geology, Middlebury College

SELECTED MANUSCRIPTS AND ABSTRACTS *Student co-authors.

Welch, B.C., M. Helgen*, K. Dwyer*, C.F. Waythomas, R.W. Jacobel, Geophysical survey of the intra-caldera icefield of Mt. Veniaminof, Alaska, *Ann. of Glaciol.*, (in press).

Welch, B.C. and R.W. Jacobel, 2005, Bedrock topography and wind erosion sites in East Antarctica, observations from the 2002 US-ITASE traverse. *Ann. of Glaciol.*, **41**, 92-96.

Jacobel, R.W. and **B.C. Welch**, 2005, A time marker at 17.5 kybp detected throughout West Antarctica. *Ann. of Glaciol.*, **41**, 47-51.

Welch, B.C., K. Dwyer*, M. Helgen*, C.F. Waythomas, and R.W. Jacobel, 2005, Glacio-hydrologic studies of the intracaldera icefield of Mt. Veniaminof, Alaska. *Eos Trans. AGU*, **86**(52), Fall Meet. Suppl., Abstract C51B-0304.

Jacobel, R. W., **B. C. Welch**, E. J. Steig, and D. P. Schneider, 2005, Glaciological and climatic significance of Hercules Dome, Antarctica: An optimal site for deep ice core drilling, *J. Geophys. Res.*, **110**, F01015, doi:10.1029/2004JF000188.

Siegert, M.J., **Welch, B.**, Morse, D., Vieli, A., Blankenship, D.D., Joughin, I., King E.C., Leysinger Vieli, G.J.M.C., Payne, A.J., Jacobel, R., 2004, Ice flow direction change in interior West Antarctica, *Science*, **305**, 1948-1951.

Welch, B.C., S.A. Arcone, R.W. Jacobel, M. Helgen*, 2004, Shallow (400-MHz) and deep (3-MHz) radar used to image wind erosion features in East Antarctica, *Eos Trans. AGU*, **85**(47), Fall Meet. Suppl., Abstract C43A-0222.

Welch, B.C., and R.W. Jacobel, 2003, Analysis of Deep-Penetrating Radar Surveys of West Antarctica, US-ITASE 2001, *Geophys. Res. Lett.*, **30**(8), 1444, doi:10.1029/2003GL017210.