

John Ryan Banta

Desert Research Institute
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Education

Ph.D., University of Nevada, Reno, Hydrology, 2006
M.S., University of Nevada, Reno, Hydrology, 2004
B.S., University of California, Davis, Soil and Water Science, 1996
- minor, University of California, Davis, Environmental Toxicology, 1996

Research Interests

Dr. Banta's current research focuses on interdisciplinary approaches to investigate hydrologic and atmospheric implications of high resolution trace element ice core and surface snow records from Greenland and Antarctica. Dr. Banta is also involved with lower-latitude research interests in the hydrologic cycle, water mass balance, as well as surface water and ground water interactions.

Teaching Interests

Dr. Banta has demonstrated a strong desire to teach at both the undergraduate and graduate level. He has taught an upper graduate level course on "Applied Data Analysis" and has keen interests in teaching courses in hydrology, geography, climate change, and general earth sciences.

Professional History

Desert Research Institute, Post-Doctoral Fellow, 2006 - present
Desert Research Institute, Graduate Research Assistant, 2002-2006
ENTRIX, Inc., Staff Scientist, 2000-2002
ENTRIX, Inc., Asst. Staff Scientist, 1999-2000
Villa Mt. Eden Winery, Chemist, 1997-1999
Telecom New Zealand, Information Coordinator, 1996
University of California, Davis, Student Laboratory Technician, 1995-1996
Novo Nordisk Entotech, Inc., Advanced Testing Biolaboratory Technician, 1993-1995

Publications

Banta, J. R., J. R. McConnell, M. Frey, R. Bales, and K. Taylor (2008), Spatial and temporal variability in snow accumulation at the West Antarctic Ice Sheet Divide over recent centuries, *Journal of Geophysical Research*, 113, D23102, doi:10.1029/2008JD010235.

Banta, J. R., J. R. McConnell, R. Edwards, and J. P. Engelbrecht (2008), Delineation of carbonate dust, aluminous dust, and sea salt deposition in a Greenland glaciochemical array using positive matrix factorization, *Geochemistry, Geophysics, Geosystems*, 9, Q07013, doi:10.1029/2007GC001908.

Banta, J. R., and J. R. McConnell (2007), Annual accumulation over recent centuries at four sites in central Greenland, *Journal of Geophysical Research*, 112, D10114, doi:10.1029/2006JD007887.

John Ryan Banta (cont.)

- Banta, J. R. (2006), Interpretation of glaciochemical records from an array of Greenland ice cores, *Ph.D. Dissertation*, Hydrologic Sciences Program, University of Nevada, Reno.
- McConnell, J.R., R. Edwards, G.L. Kok, M.G. Flanner, C.S. Zender, E.S. Saltzman, J.R. Banta, D.R. Pasteris, M.M. Carter, and J.D.W. Kahl (2007), 20th century industrial black carbon emissions altered Arctic climate forcing. *Science*, August 9, 2007, DOI: 10.1126/science.1144856.
- McConnell, J. R., A. J. Aristarian, J. R. Banta, P. R. Edwards, and J. C. Simões (2007), 20th Century Doubling in Atmospheric Dust over the Antarctic Peninsula Parallels Climate Change and Desertification in South America, *Proceedings of National Academy of Science*, 104(14):5743-5748, doi:10.1073/pnas.0607657104.
- McGwire, K.C., J.R. McConnell, R.B. Alley, J.R. Banta, G.M. Hargreaves, and K.C. Taylor (2008), Dating annual layers of a shallow antarctic ice core with an optical scanner, *Journal of Glaciology*, 54(188), 831-838 .

Presentations

2009

- Banta, J.R., J.R. McConnell, T. Cahill, J. Burkhart, R. Bales (2009), Year-round measurements and interpretations at Greenland Environmental Observatory at Summit (GEOSummit), *NOAA Global Monitoring Annual Conference*, abstract submitted, Boulder, CO.
- McConnell EG McConnell, J.R., D. Koch, R. Miller, J.R. Banta, C. Wake, and K. Kreutz (2009), Assessment of Asian dust emission and transport variability to the Arctic during the past 120 years using the NASA GISS ModelE and an array of ice core dust records, *European Geosciences Union*, Geophysical Research Abstracts, Vol. 11, abstract submitted, Vienna, Austria.

2008

- Banta, J.R., J.R. McConnell, T. Cahill, J. Burkhart, and R. Bales (2008), Greenland Environmental Observatory at Summit (GEOSummit): Year-Round Measurements and Results, *American Geophysical Union, Fall Meeting*, Abstract A11A-0098, San Francisco, CA.
- Banta, J.R., J.R. McConnell, R. Edwards, J. Burkhart, R. Bales (2008), GEOSummit baseline measurements: results and interpretations of year-round monitoring, *NOAA Global Monitoring Annual Conference*, Boulder, CO.
- Brown, T.J., J.R. Banta, and B.L. Hall (2008), Looking for patterns in global sea surface temperatures and North American fire danger with positive matrix factorization, *American Meteorological Society 19th Conference on Probability and Statistics*, Boise, ID.
- McConnell, J.R., and J.R. Banta (2008), Temporal and spatial variability in snow accumulation at WAIS Divide over recent centuries, *American Geophysical Union, Fall Meeting*, Abstract C31B-0493, San Francisco, CA.
- McConnell, J.R., A.J. Aristarain, M.A.J. Curran, E.R. Thomas, J.R. Banta, and R. Edwards (2008), New high-resolution records of dustiness over recent centuries from Greenland and Antarctic ice cores, *Geochimica et Cosmochimica Acta*, 72, 12.
- McConnell, J.R.; J.R. Banta, T. Cahill, J. Burkhart, R. Bales (2008), GEOSummit baseline measurements (Greenland Environmental Observatory at Summit), *Arctic Observatory Network (AON) Meeting*, Palisades, NY.

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McConnell, J.R., R. Edwards, and J.R. Banta (2008), Ultra-trace chemistry in the WAIS Divide ice core, *WAIS Divide Science Meeting*, Denver, CO.

Taylor, K.C., J.R. Banta, and K.C. McGwire (2008), Dating the WAIS Divide ice core, *WAIS Divide Science Meeting*, Denver, CO.

2007

Bales, R., J. Burkhart, T. Cahill, J. McConnell, and J.R. Banta (2007), Baseline measurements and results from the Greenland Environmental Observatory (GEOSummit), *European Geosciences Union*, Geophysical Research Abstracts, Vol. 9, 09984, Vienna, Austria.

Banta, J.R., J. McConnell, T. Cahill, J. Burkhart, and R. Bales (2007), GEOSummit baseline measurement results and long term plans, *NOAA Global Monitoring Annual Conference*, Boulder, CO.

Banta, J.R., J.R. McConnell, and R. Edwards, Spatial and temporal variability in snow accumulation at WAIS Divide over recent centuries (2007), *WAIS Divide Science Meeting*, Kings Beach, CA.

Banta, J.R., J.R. McConnell, R. Edwards, J. Burkhart, and R. Bales (2007), GEOSummit Baseline Measurements: Results and Interpretations of Surface Snow Elemental Concentrations, *American Geophysical Union, Fall Meeting*, Abstract A53B-1152, San Francisco, CA.

Brown, T., J.R. Banta, and B. Hall (2007), Global sea surface temperatures and North American fire danger variability, *American Meteorological Society Annual Meeting*, San Antonio, TX.

Brown, T., J.R. Banta, and B. Hall (2007), Predictability of sea surface temperatures for fire danger, *Seventh Symposium on Fire and Forest Meteorology*, Bar Harbor, ME.

McConnell, J.R., and J.R. Banta (2007), Accumulation studies in southern Greenland, *2007 PARCA/NASA Workshop at the Jet Propulsion Laboratory*, Pasadena, CA.

McConnell, J.R., A. J. Aristarian, J.R. Banta, M. Curran, P.R. Edwards, P. Ginoux, D. Pasteris, J. Pedro, and L. Thomas (2007), Preliminary ultra-trace results: The WAIS Divide Dust Record in the context of an Antarctic Ice Core Array, *WAIS Divide Science Meeting*, Kings Beach, CA.

McConnell, J.R., R.C. Bales, and J.R. Banta (2007), GEOSummit (Greenland Environmental Observatory at Summit), *Arctic Observing Network Meeting*, Boulder, CO.

McConnell, J.R., R. Edwards, G.L. Kok, M.G. Flanner, C.S. Zender, E.S. Saltzman, J.R. Banta, D.R. Pasteris, M.M. Carter, and J.D.W. Kahl (2007), Concentrations and Sources of Soot in Greenland Precipitation from 1788 to 2002: Implications for Radiative Forcing, *American Geophysical Union, Fall Meeting*, San Francisco, Abstract A44B-01.

Spikes, V.B., J.R. McConnell, J.R. Banta (2007), Annual layer mapping and net snowfall measurements across the southern Greenland ice sheet using shallow radar and ice cores, *American Geophysical Union, Fall Meeting*, Abstract C11A-0087, San Francisco, CA.

2006

Banta, J.R., J.R. McConnell, and R. Edwards (2006), The influence of Arctic Oscillation variability on Greenland glaciochemical ice core records, *American Geophysical Union, Fall Meeting*, Abstract U43B-0859, San Francisco, CA.

McConnell, J.R., A.J. Aristarian, J.R. Banta, and R. Edwards (2006), Atmospheric dust over the Antarctic Peninsula and climate change in South America, *American Geophysical Union, Fall Meeting*, Abstract PP31C-1757, San Francisco, CA.

John Ryan Banta (cont.)

McConnell, J.R., and J.R. Banta (2006), Ultra trace element ice core laboratory at the Desert Research Institute, *Nevada System of Higher Education Board of Regents Meeting*, Las Vegas, NV.

2005

Banta, J.R., J.R. McConnell, and R. Edwards (2005), High-resolution sea salt and dust records over past centuries from Greenland ice cores, *American Geophysical Union, Fall Meeting*, Abstract C51B-0297, San Francisco, CA.

Edwards, R., J.R. McConnell, and J.R. Banta (2005), Changes in atmospheric flux of iron to the Arctic over past 100 yr, *American Geophysical Union, Fall Meeting*, Abstract PP33C-1582, San Francisco, CA.

2004

Banta, J.R., J.R. McConnell, and R. Edwards (2004), Source Apportionment mixing models for high resolution trace element ice core records over the past 350 years at Siple Dome, Antarctica, *American Geophysical Union, Fall Meeting*, Abstract PP23B-1410, San Francisco, CA.

Banta, J.R. (2004), High-resolution trace element dust flux records from Siple Dome, Antarctica, *Siple Dome Science Meeting*, Reno, NV.

Banta, J.R., J.R. McConnell, G.W. Lamorey, R. Edwards, and M. Frey (2004), Correlation of atmospheric circulation indexes with high resolution trace element flux records from West Antarctica, *SCAR Open Science Meeting*, Bremen, Germany.

Edwards, R., J.R. McConnell, J.R. Banta, and D. Solter-Goss (2004), Decadal to century scale variability in the atmospheric deposition of iron to Siple Dome during the past 400 y. *SCAR Open Science Meeting*, Bremen, Germany.

2003

Banta, J.R., J.R. McConnell, G.W. Lamorey, R. Edwards, and M. Frey (2003), High-resolution dust flux records at Siple Dome and other West Antarctic sites, *American Geophysical Union, Fall Meeting*, Abstract A11E-0026, San Francisco, CA.

McConnell, J.R., and J.R. Banta (2003), A 250-year, very high-resolution record of trace element deposition in central Greenland, *XVI INQUA Congress*, 71-4, Reno, NV.

McConnell, J.R., P.R. Edwards, J.R. Banta, and D. Solter-Goss (2003), A novel analytical approach greatly expands ice core records of climate change and industrial pollution, *SEARCH Open Science Meeting*, Seattle, WA.

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Memberships, Affiliations, and Awards

American Geophysical Union, Member, 2002 – present
Geological Society of America, 2009 – present
American Water Resources Association, Member, 2002 – 2006
 AWRA Local Chapter President, 2003-2004
University of Nevada, Reno, Hydrologic Sciences Program, 2002 – 2006
 Outstanding Master’s Student Award, 2004
European Research Course on the Atmospheres, Grenoble, France, Participant, 2005
NASA Nevada Space Grant.
 NASA Nevada Space Grant – Fellowship Award, 2004 – 2005
 NASA Nevada Space Grant – Poster Competition Award, 2004
 NASA Nevada Space Grant – Paper Competition Award, 2004
Society of Environmental Toxicology, Member, 1999-2002

Extracurricular

Invited Guest Speaker
 American Meteorologic Society, Reno Local Chapter Meeting – March, 2008
 KOLO TV Morning Show – February, 2008
 Science Student of the Year Award Ceremony – May 24, 2007
 Atmospheric Sciences Graduate Program, Data Analysis course guest lecture – Fall, 2006
Desert Research Institute, assisted Chemical Safety Officer search committee – January, 2008
Desert Research Institute, Post-doc representative for DRI bi-laws committee – December, 2008
Western Nevada Regional Science & Engineering Fair
 Team Leader/Volunteer Judge, March, 2008
 Volunteer Judge, March, 2007
 Volunteer Judge, March, 2006
Nevada Department of Environmental Protection “Annual Snapshot Day” –
 Team Leader - Sampling Truckee River, May, 2008
 Volunteer - Sampling Truckee River, May, 2006
Adopt a Highway, Desert Research Institute – August, 2006
Truckee Meadows Weed Coordination Group “Pulling Together Day” –
 Dorostkar Park, May, 2006