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EDUCATION

Ph.D., 1996, Geology. University of California, Los Angeles.
B.S., 1991, Geology. University of Michigan, Ann Arbor.

ACADEMIC POSITIONS

Associate Professor. Department of Geological Sciences, Ohio State University. 2006-present.
Assistant Professor. Department of Geological Sciences, Ohio State University. 2000-2006.
Visiting Assistant Professor. Department of Geoscience, University of Iowa. 1998-2000
Adjunct Assistant Professor, Department of Earth and Space Sciences, UCLA. 1997

PRIMARY RESEARCH INTERESTS

- Role of the geochemical carbon cycle in climate change
- Carbon and strontium isotopic evolution of the oceans
- Phosphorus and nitrogen limitation of marine productivity
- Causes of marine mass extinction events
- Eustatic and tectonic changes in sea level

RESEARCH AWARDS

- 2008-2010 National Science Foundation, Principal Investigator “Testing the uplift-weathering hypothesis for the Late Ordovician ice age”.
- 2008-2010 National Science Foundation. Principal Investigator “Foreland basin development and biotic change in Late Ordovician trilobite faunas of eastern North America”.
- 2007-2009 National Science Foundation, Principal Investigator “The Permian-Triassic transition in Antarctica: Evaluating the rates and variability of carbon isotope fluctuations in terrestrial organic matter”.
- 2004-2007 National Science Foundation, Principal Investigator, “Collaborative Research: Understanding Carbon Isotope Excursions in the Paleozoic: An Integrated Chemostratigraphic and Modeling Approach”.
- 2002-2004 National Science Foundation, Co-Principal Investigator, “Extinction and Recovery of Crinoids Resulting from Climatic Change during the Ordovician-Silurian Biotic Crisis”.
- 2000-2004 National Science Foundation, Principal Investigator, “Carbon isotope stratigraphy of the Carboniferous in the Arrow Canyon Range, southeastern Nevada: Reconstructing carbon cycling during a Greenhouse-Icehouse transition”.
- 2000-2001 National Science Foundation, Principal Investigator, “SGER: An integrated study of Lower Mississippian (Kinderhookian-Early Osagean) Earth history: Linking faunal turnover, sea-level changes and carbon cycling”.
- 2001 Faculty Seed Grant, Ohio State University. “Carbon isotope stratigraphy of the Late Paleozoic Greenhouse to Icehouse Transition (350 Million Years Ago)”.

- 1995 Institute for Cambrian Studies (Boulder, CO), Research Grant.
 1994 American Association of Petroleum Geologists, Grant-in-Aid.
 1994 Wyoming Geological Association, J. David Love Field Geology Scholarship.
 1992-1995 Geological Society of America, Research Grant.
 1992 Sigma Xi Scientific Society, Grant-in-Aid.
 1991-1992 Center for Study of Evolution and Origin of Life (UCLA), Graduate Fellowship.
 1991 National Association of Geological Teachers, Field Geology Scholarship.

PUBLICATIONS (*student advisee):

In press

- *Cramer, B.D., **Saltzman, M.R.**, Day, J.E., and Witzke, B.J., Lithological Expression of Global Positive Carbon Isotope Excursions in Epeiric Sea Settings: Carbonate Production, Organic Carbon Burial, and Oceanography during the late Famennian, In Press, *Geological Association of Canada Special Paper*.

2007

- *Cramer, B.S., and **Saltzman, M.R.**, 2007, Early Silurian paired $\delta^{13}\text{C}_{\text{carb}}$ and $\delta^{13}\text{C}_{\text{org}}$ analyses from the Midcontinent of North America: Implications for paleoceanography and paleoclimate, *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 256, p. 195-203.
 *Cramer, B.S., and **Saltzman, M.R.**, 2007, Fluctuations in epeiric sea carbonate production during Silurian positive carbon isotope excursions: A review of proposed paleoceanographic models, *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 245, p. 37-45.
 Gill, B.C., Lyons, T.W., and **Saltzman, M.R.**, 2007, Parallel, high-resolution carbon and sulfur isotope records of the evolving Paleozoic marine sulfur reservoir, *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 256, p. 156-173.
 Babcock, L.E., Robison, R.A., Rees, M.N., Peng, S.C., and **Saltzman, M.R.**, 2007, The global boundary stratotype section and point (GSSP) of the drumian stage (Cambrian) in the drum mountains, Utah, USA, *Episodes*, v. 30, p. 85-95.
 *Barta, N.C., Bergstrom, S.M., and **Saltzman, M.R.**, 2007, First Record of the Ordovician Guttenberg ^{13}C Excursion (GICE) in New York State and Ontario: Local and Regional Chronostratigraphic Implications, *Northeastern Geology and Environmental Sciences*, v. 29, p. 276-298.

2006

- *Cramer, B.D., Kleffner, M.A., and **Saltzman, M.R.**, 2006, The Late Wenlock Mulde positive carbon isotope excursion in North America, *GFF*, v. 128, p. 85-90.
 *Cramer, B.D., **Saltzman, M.R.**, Kleffner, M.A., 2006, Spatial and Temporal Variability in Organic Carbon Burial during Global Positive Carbon Isotope Excursions: New Insight from High Resolution carbon isotope Stratigraphy from the Type Area of the Niagaran Provincial Series, *Stratigraphy*, v. 2, no. 4, p. 327-340.
 Bergström, S.M., **Saltzman, M.R.**, and Schmitz, B., 2006, First record of the Hirnantian (Upper Ordovician) $\delta^{13}\text{C}$ excursion in the North American midcontinent and its regional implications: *Geological Magazine*, v. 143, p. 657-678.
 Albanesi GL, Carrera MG, Canas FL, **Saltzman M.R.**, 2006, A proposed Global Boundary Stratotype Section and Point for the base of the Middle Ordovician series: The Niquivil section, Precordillera of San Juan, Argentina: *Episodes*, v. 29, p. 1-15.

2005

- Saltzman, M.R.**, 2005, Phosphorus, nitrogen, and the redox evolution of the Paleozoic oceans: *Geology*, v. 33, p. 573-576.

- Saltzman, M.R.** and *Young, S.A., 2005, A long-lived glaciation in the Late Ordovician?: Isotopic and sequence stratigraphic evidence from western Laurentia: *Geology*, v. 33, p. 109-112.
- *Cramer, B.D., and **Saltzman, M.R.**, 2005, Sequestration of ^{12}C in the deep ocean during the early Wenlock (Silurian) positive carbon isotope excursion, *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 219, p. 333-349.
- *Young, S.A., **Saltzman, M.R.**, and Bergström, S.A., 2005, Late Ordovician (Mohawkian) carbon isotope ($\delta^{13}\text{C}$) stratigraphy in Eastern and Central North America: regional expression of a perturbation of the global carbon cycle, *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 222, p. 53-76.
- Cowan, C., Fox, D.L., Runkel, A.C., and **Saltzman, M.R.**, 2005, Terrestrial-marine carbon cycle coupling in ~500 million year-old phosphatic brachiopods, *Geology*, v. 33, p. 661-664.

2004

- Saltzman, M.R.**, Groessens, E., and Zhuravlev, A.V., 2004, Carbon cycle models based on extreme changes in $\delta^{13}\text{C}$: An example from the Lower Mississippian: *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 213, p. 351-369.
- Saltzman, M.R.**, Runkel, A.C., Cowan, C.A., Runnegar, B., Stewart, M.C., and Palmer, A.R., 2004, The upper Cambrian SPICE ($\delta^{13}\text{C}$) event and the Sauk II-Sauk III regression: New evidence from Laurentian basins in Utah, Iowa and Newfoundland: *Journal of Sedimentary Research*, v. 74, p. 366-377.

2004 (continued)

- Peng, S., Babcock, L.E., Robison, R.A., Huanling, L., Rees, M.N. and **Saltzman, M.R.**, 2004, Global Standard Stratotype-Section And Point for the Furongian Series and Paibian Stage (Cambrian), *Lethaia*, v. 37, p.365-378.
- Bergström, S.M., Huff, W.D., **Saltzman, M.R.**, Kolata, D.R., and Leslie, S.A., 2004, The greatest volcanic ash falls in the Phanerozoic: Trans-Atlantic relations of the Ordovician Millbrig and Kinnekulle K-bentonites: *Sedimentary Record*, v.2 (4), p.4-8.

2003

- Saltzman, M.R.**, 2003, Organic carbon burial and phosphogenesis in the Antler foreland basin: An out of phase relationship during the Lower Mississippian: *Journal of Sedimentary Research*, v. 73, p. 844-855.
- Saltzman, M.R.**, 2003, The Late Paleozoic Ice Age: Oceanic gateway or $p\text{CO}_2$? *Geology*, v. 31 , p. 151-154.

2002

- Saltzman, M.R.**, 2002, Carbon isotope ($\delta^{13}\text{C}$) stratigraphy across the Silurian-Devonian transition in North America: Evidence for a perturbation of the global carbon cycle: *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 187, p. 83-100.
- Saltzman, M.R.**, 2002, Carbon and oxygen isotope stratigraphy of the Lower Mississippian (Kinderhookian-early Osagean), western United States: Implications for seawater chemistry and glaciation: *Geological Society of America Bulletin*, v. 114, p. 96-108.

2001

- Saltzman, M.R.**, 2001, Silurian $\delta^{13}\text{C}$ stratigraphy: A view from North America, *Geology*, v. 29, p. 671-674.
- Denniston, R.F., Gonzalez, L.A., Asmerom, Y., Polyak, V., Reagan, M.K., and **Saltzman, M.R.**, 2001, A high-resolution speleothem record of climatic variability at the Allerød-Younger

Dryas transition in Missouri, central United States: *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 176, p. 147-155.

2000

Saltzman, M.R., Brasier, M.D., Ripperdan, R.L., Ergaliev, G.K., Lohmann, K.C., Robison, R.A., Chang, W.T., Peng, S. and Runnegar, B., 2000, A global carbon isotope excursion during the Late Cambrian: Relation to trilobite extinctions, organic-matter burial and sea level, *Palaeogeography, Palaeoceanography, Palaeoclimatology*, v. 162, p. 211-224.

Saltzman, M.R., Gonzalez, L.A. and Lohmann, K.C., 2000, Earliest Carboniferous cooling step triggered by the Antler Orogeny?, *Geology*, v. 28, p. 347-350.

1999

Saltzman, M.R., 1999, Upper Cambrian carbonate platform evolution, *Elvinia* and *Taenicephalus* trilobite zones, northwestern Wyoming. *Journal of Sedimentary Research*, v. 69, p. 926-938.

1998

Saltzman, M.R., Runnegar, B. and Lohmann, K.C., 1998, Carbon-isotope stratigraphy of the Pterocephaliid Biome in the eastern Great Basin: Record of a global oceanographic event during the Late Cambrian. *Geological Society of America Bulletin*, v. 110, p. 285-297.

1995

Saltzman, M.R., Davidson, J.P., Holden, P., Lohmann, K.C. and Runnegar, B., 1995, Sea level-driven changes in ocean chemistry at an Upper Cambrian extinction horizon, western United States. *Geology*, v. 23, p. 893-896.

Conference Proceedings (peer-reviewed) and Comment-Reply (editor-reviewed):

Saltzman, M.R., 2001, Earliest Carboniferous cooling step triggered by the Antler Orogeny? — Reply, *Geology*, v. 29, p. 92-93.

Saltzman, M.R., Bergström, S., Huff, W., and Kolata, D., 2003, Conodont and graptolite biostratigraphy and the Ordovician (early Chatfieldian, middle Caradocian) $\delta^{13}\text{C}$ excursion in North America and Baltoscandia: Implications for the interpretation of the relations between the Millbrig and Kinnekulle K-bentonites, *Proceedings of the 9th International Ordovician Symposium, San Juan, Argentina*, p. 41-47.

Albanesi, G.L., Carrera, M.G., Cañas, F.L. and Saltzman, M.R., 2003, The Niquivil section, Precordillera of San Juan, Argentina, Proposed GSSP for the Lower/Middle Ordovician boundary, *Proceedings of the 9th International Ordovician Symposium, San Juan, Argentina*, p. 41-47.

Technical Reports and Guidebooks:

Shanichi, P., Babcock, L.E., Robison, R.A., Huanling, L., Rees, M.N. and Saltzman, M.R., 2001, Proposed Global Standard Stratotype-Section And Point for the Paibian Stage and Furongian Series (Upper Cambrian), IUGS Cambrian Subcommittee on Stratigraphy.

Runkel, A. C., McKay, R. M., Cowan, C. A. and Saltzman, M. R., 2000, Relative sea level changes across the Marjumiid-Pterocephaliid biome boundary as recorded in the siliciclastic strata of the central midcontinent in Stratigraphy and sedimentology of Cambrian strata in west-central Wisconsin and southeastern Minnesota, Guidebook for the 30th annual field conference, Great Lakes Society SEPM, p. 35-40.

Saltzman, M.R., 1999, Trilobite mass extinction events in the southern Gallatin Range, Yellowstone National Park. In: Santucci, V.L. (ed), *National Park Service Paleontological Research Volume*, Geologic Resource Division Technical Report NPS/GRDTR-98/01, Denver, 12 p.

INVITED TALKS

Virginia Tech, Department of Geology (2/08)
Northwestern University, Department of Geology (2/07)
University of Kentucky, Department of Geological Sciences (4/06)
University of Oklahoma, Department of Geology (3/06)
Syracuse University, Department of Geology (2/06)
Miami University, Department of Geology (11/05)
Byrd Polar Research Center, Ohio State University (6/05)
Harvard University, Department of Earth and Planetary Sciences (4/05)
Ohio University, Department of Geology (5/05)
Denison University, Department of Geology (11/04)
Indiana University-Purdue University at Indianapolis, Department of Geology (9/03)
University of North Carolina–Wilmington, Department of Geology and Geography (2/03)
University of Cincinnati, Department of Geology (11/02)
Oberlin College, Department of Geology (11/02)
University of Kansas, Department of Geology (3/02)
University of Saskatchewan, Department of Geology (12/01)
Case Western Reserve University, Department of Geological Sciences (4/01)
Wright State University, Department of Geology (1/01)
Pennsylvania State University, Department of Geosciences (10/00)
Northwestern University, Department of Geology and Geophysics (7/00)
University of Missouri-Columbia, Department of Geology (4/99)
University of Chicago, Department of Geophysical Sciences (5/97)
Boston College, Department of Geology and Geophysics (1/97)

PROFESSIONAL SERVICE

Geological Society of America, Organized (w/ M. Pope) SEPM-sponsored GSA Theme Session: “*Ocean chemistry through the Precambrian and Paleozoic*” (Denver, 2004)
National Science Foundation, Participant in NSF workshop: “*Chronos: Geochemical Cycles*” (San Antonio, 2004)
Geological Society of America, Representative on North American Committee on Stratigraphic Nomenclature, Four-year term
International Subcommission on Ordovician Stratigraphy, Voting member, Eight-year term
Co-Editor for a special volume of Palaeogeography, Palaeoceanography, Palaeoclimatology on Ocean Chemistry during the Precambrian and Paleozoic (w/ Mike Pope, Julie Bartley, Tom Algeo)
International Subcommission on Cambrian Stratigraphy, Chair of isotope chemostratigraphy working group and Corresponding member
International Subcommission on Carboniferous Stratigraphy, Corresponding member

GRADUATE STUDENTS

COMPLETED

PhD

2008 Seth A. Young “A Chemostratigraphic investigation of the Late Ordovician Greenhouse- Icehouse transition”

MS

- 2003 Seth A. Young “A Late Middle Ordovician carbon isotope excursion in central and eastern North America: sequence stratigraphic, biostratigraphic, and K-bentonite event stratigraphic relations”
- 2004 Nathaneal Barta “Investigation of the correlation of the lower Chatfieldian (upper Middle Ordovician) strata of New York, Ontario and Pennsylvania using the Guttenberg carbon isotope excursion”
- 2004 Bradley D. Cramer “Glaciation, CO₂, and organic carbon burial during the early Silurian: carbon isotope stratigraphy from the mid-continent of North America”
- 2004 Matthew J. Williams “Carbon isotope chemostratigraphy and ocean chemistry analysis within the Helderberg group: Silurian-Devonian, Appalachian Basin”
- 2005 Kate E. Tierney “Carbon isotopic response to oceanographic changes at Milankovitch scale periodicity in Pennsylvanian aged limestones from Arrow Canyon, Nevada”
- 2006 Lisa Fay, “Carbon cycling in the Devonian Onondaga Formation of New York: Paleogeographic implications”

CURRENT

PhD

Kate E. Tierney

Bradley D. Cramer

MS

Jeremy Gouldey

Alexa Sedlacek

TEACHING AT OHIO STATE

Honors and Awards

2002 Distinguished Teaching Award, Department of Geological Sciences

Courses Taught

GS 122: Historical Geology

GS 100: Earth Systems I: The Geologic Environment

GS 605: Chemostratigraphy

GS 581/582: Field Geology (taught in Ephraim, UT, with Terry Wilson and David Elliot)

GS 601.02: Petrology of Carbonates and Shales

GS 694: Orogeny: Igneous, Metamorphic, Sedimentary Records (with Mike Barton)

GS 670: General and Economic Geology of Selected Areas

GS 800: Field Seminar in Stratigraphy

GS 800: Seminar in Stratigraphy

GS 888: Colloquium in Geological Sciences