

# Jason Scott Alexander

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Department of Geology and Geophysics - University of Wyoming - 402.630.576 - jalex13@uwyo.edu

## EDUCATION

**PhD Graduate Student** – University of Wyoming, Dept. of Geology and Geophysics; exp. grad. May 2018

- Major advisor: Dr. Brandon McElroy
- Proposed project: Relations between flow dynamics and macroform geometry in sandy bed rivers.

**M.S. – Fluvial Geomorphology** – Utah State University, Dept. of Watershed Sciences – Dec. 2007 – GPA: 3.74

- Major advisor: Dr. John C. Schmidt
- Thesis: “The timing and magnitude of channel adjustments in the upper Green River below Flaming Gorge Dam in Browns Park and Lodore Canyon, Colorado: and analysis of the pre- and post-dam river using high-resolution dendrogeomorphology and repeat topographic surveys”.

**B.S. – Geology and Watershed Science** [dual] – Colorado State University – Dept. of Earth Resources – May 2000 – GPA: 3.34

- Senior Thesis: “Hydrologic Analysis and feasibility of surface coal mining, Watering Trough basin, Colorado.”

## PROFESSIONAL EXPERIENCE

**Hydrologist** – U.S. Geological Survey, Lincoln Nebraska – December 2007 to March 2014

- Project chief of numerous scientific investigations of moderate to high complexity. Managed budgets, schedules, and logistics for science teams of 2 to 5 people.
- Wrote grants to successfully obtain approximately \$500,000 in grant money over 5 years to fund various geomorphology-related scientific investigations in Nebraska and South Dakota.

**Integrated Water Management Analyst** – Nebraska Department of Natural Resources, Lincoln, Nebraska – August 2007 to December 2007.

**Research Assistant** – Department of Watershed Sciences, Utah State University – June 2004 to June 2007

**Engineering Specialist** – Wright Water Engineers Inc., Glenwood Springs, Colorado – May 2002 to June 2004.

**Geomorphologist** – Stetson Engineers, Inc., San Rafael, California – December 2000 to May 2002.

## ACADEMIC EXPERIENCE / INTERNSHIPS

**July 2004 – May 2007:** Research Assistant, Department of Watershed Sciences at Utah State University.

**Fall 99’, Spring 99, Fall 98’:** Teaching Assistant, ER140 - Introduction to Geology, Colorado State University, Fort Collins, CO.

**Summers 99’ and 98’:** Field Technician, Dr. Ellen Wohl, Colorado State University, Fort Collins, CO.

**Spring 98’ and Fall 97’:** Merit Work Study Program, Department of Earth Resources, Colorado State University, Fort Collins, CO.

**Summer 97’:** NSF-REU Intern, Dr. Ellen Wohl, Colorado State University, Fort Collins, CO

**Spring 97’:** Independent Work Study Program, Department of Earth Resources, Colorado State University, Fort Collins, CO

## PUBLISHED PAPERS AND REPORTS

Mueller, E.R., Grams, P.E., Schmidt, J.C., Hazel, J.E., Jr., Alexander, J.S., and Kaplinski, M., 2014, The influence of controlled floods on fine sediment storage in debris fan-affected canyons of the Colorado River basin: Geomorphology, v. 226, p. 65-75.

Mueller, E.R., Grams, P.E., Schmidt, J.C., Hazel, J.E., Jr., Kaplinski, M., Alexander, J.A., and Kohl, K., 2014, Monitoring and research to describe geomorphic effects of the 2011 controlled flood on the Green River in the Canyon of Lodore, Dinosaur National Monument, Colorado and Utah: U.S. Geological Survey Scientific Investigations Report 2014-5022, 66 p.

Alexander, J.S., Jacobson, R.B., and Rus, D.L., 2013, Sediment transport and deposition in the lower Missouri River during the 2011 flood: U.S. Geological Survey Professional Paper 1798-F, 27 p

Alexander, J.S., Schultze, D.M., and Zelt, R.B., 2013, Emergent sandbar dynamics in the lower Platte River in eastern Nebraska—Methods and results of pilot study, 2011: U.S. Geological Survey Scientific Investigations Report 2013-5031, 42 p. with appendixes.

Galloway, J.M., Rus, D.L., and Alexander, J.S., 2013, Characteristics of sediment transport at selected sites along the Missouri River during the high-flow conditions of 2011: U.S. Geological Survey Scientific Investigations Report 2013-5006, 31 p.

Braulik, G.T., Reichert, A.P., Ehsan, T., Khan, S., Northridge, S.P., Alexander, J.S., and Garstang, R., 2012, Habitat use by a freshwater dolphin in the low-water season: Aquatic Conservation—Marine and Freshwater Ecosystems, v. 22, p. 533-546.

Alexander J.S., Wilson, R.W., and Green, W.R., 2012, A brief history and summary of the effects of river engineering and dams on the Mississippi River system and delta: U.S. Geological Survey Circular 1375, 43 p.

Schaepe, N.J., and Alexander, J.S., 2011, Sediment samples and channel-geometry data, lower Platte River watershed in Nebraska, 2010: U.S. Geological Survey Data Series Report 2011-572, 22 p.

Alexander, J.S., Zelt, R.B., and Schaepe, N.J., 2010, Hydrogeomorphic and hydraulic habitats of the Niobrara River, Nebraska—with special emphasis on the Niobrara National Scenic River: U.S. Geological Survey Scientific Investigations Report 2010-5141, 62 p.

Soenksen, P.J., Flyr, B.B., Alexander, J.S., and Schaepe, N.J., 2010, Streamflow gains and losses in the Niobrara River Basin, Nebraska, 1980 and 2009: Journal of Environmental Hydrology, v. 18, 18 p.

Alexander, J.S., R.B. Zelt, and N. Schaepe, 2009, Geomorphic segmentation, hydraulic geometry, and hydraulic microhabitats of the Niobrara River – Methods and initial results: U.S. Geological Survey Scientific Investigations Report 2009-5008, 52 p.

Hallum, D., Alexander, J., Ostdiek, A., Cartwright, T., Lear, J., Pun, M., Bradley, J., Josiah, S., Koester, P., and Kloch, D., 2008, Assessment of resources available to quantify non-beneficial consumptive water use by riparian vegetation in Nebraska: Nebraska Department of Natural Resources Technical Report Number 2008-01, 58 p.

## **PUBLISHED ABSTRACTS AND PROCEEDINGS**

Lundstrom, S., Alexander, J.S., 2014, Contrasts between the late Quaternary geologic records of the Niobrara National Scenic River (NIOB) and the Missouri National Recreational River (MNRR) of the Central Great Plains—Relations to late Pleistocene glaciation of the Laurentide ice sheet: Program with Abstracts Geological Society of America—Annual Meeting 2014, Vancouver, B.C.

Alexander, J.S., 2014, Seasonal dynamics of sandbars in the lower Platte River, Nebraska. Oral presentation. In Program with Abstracts Geological Society of America, North Central Section—Annual Meeting 2014, Lincoln, NE.

Lundstrom, S., and Alexander, J.S., 2014, Geomorphic responses to moderate rainfall events in the aftermath of a major recent fire across the valley of the Niobrara National Scenic River, Nebraska. Oral presentation. In Program with Abstracts Geological Society of America, North Central Section—Annual Meeting 2014, Lincoln, NE.

Alexander, J.S., and Zelt, R.B., 2012, Geometries and distributions of emergent sandbars in the lower Platte River: Implications for informed management of large sandy bed rivers in the Great Plains Region. Poster presentation. In Program with Abstracts of University of Nebraska Water Center: 2012 Water—Science, Practice, and Policy 2012, Lincoln, Nebraska.

Alexander, J.S., and Zelt, R.B., 2011, Sandbar dynamics in the lower Platte River Pilot Study—methods and initial results. Oral presentation. In Program with Abstracts of University of Nebraska Water Center: 2011 Climate, Water and Ecosystems Conference, Lincoln, Nebraska.

Lundstrom, S.C., Berry, M.E., and Alexander, J.S., 2011, Holocene incision interrupted by aggradational episodes along the middle Niobrara River, northern Nebraska—complex landscape response to postglacial climate history. Oral presentation. In Program with Abstracts of Geological Society of America—Annual Meeting 2011, Minneapolis, MN.

Woodward, B.K., Alexander, J.S., and Howle, J., 2011, Estimation of alluvial erosion and deposition rates at two temporal and spatial scales along the Belle Fourche River. Oral Presentation., In Program with Abstracts of the Western South Dakota Hydrology Conference, Rapid City, South Dakota.

Alexander, J.S., Stamm, J.F., Woodward, B.K., and Lamothe, P., 2011, A classification of alluvial landforms associated with mine tailings along the Belle Fourche River, western South Dakota. Oral Presentation. In Program with Abstracts of the Western South Dakota Hydrology Conference, Rapid City, South Dakota.

Alexander, J.S., 2010, Hydraulic and hydrogeomorphic characteristics of the Niobrara River in the National Scenic Reach, Nebraska. Oral Presentation., In Program with Abstracts of the University of Nebraska Water Center: 2010 Platte River Basin Symposium.

Alexander, J.S., Zelt, R.B., and Stamm, J.F., 2010, Ice-related longitudinal and lateral connection and disconnection of rivers and floodplains, some examples from the Niobrara and Belle Fourche Rivers—Great Plains, United States. Oral presentation. In Program with Abstracts of Geological Society of America – Annual Meeting 2010, Denver, Colorado.

Alexander, J.S., Woodward, B.K., Stamm, J.F., Lamothe, P., Maddox, A., Howle, J., and Larson, D., 2010, Legacy mine tailings and alluvial deposits along the Belle Fourche River, South Dakota—an integrated, multi-scale investigation of channel dynamics. Poster presentation. In Program with Abstracts of Geological Society of America, Rocky Mountain Section – Annual Meeting 2010, Rapid City, South Dakota.

Alexander, J.S., and J.C. Schmidt, 2007, A tale of two rivers: channel adjustments to restorative floods in the Green River in Dinosaur National Monument as compared to those in the Colorado River in Grand Canyon, N.P. Oral presentation. In Program with Abstracts of American Geophysical Union – Fall Meeting 2007, San Francisco, CA.

Alexander, J.S., Dean, D.J., Scott, M.J., Shafroth, P.B., and Schmidt, J.C., 2007, Using new high-resolution dendrogeomorphic tools to reconstruct a fine-scaled history of 20th century floodplain deposition and channel narrowing, Oral presentation. In Program with Abstracts of 2007 Geological Society of America Annual Meeting, Denver, Colorado.

Alexander, J.S., Scott, M.L., and J.C. Schmidt, 2006, Hydrologic scenarios for floodplain building in a vertically accreting, suspended sediment river. Oral presentation. In Program with Abstracts of American Geophysical Union-Fall Meeting 2006, San Francisco, CA.

Alexander, J.S., Scott, M.L., and J.C. Schmidt, 2006, Chicken or Egg? Floodplain sedimentation as the precursor or result of tamarisk invasion. Oral presentation. In Program with Abstracts of American Geophysical Union-Fall Joint Assembly Meeting 2006, Baltimore, MA.

Alexander, J.S., Schmidt, J.C., and Scott, M.L., 2005, Evaluating channel change at Tamarisk removal and control reaches following a prescribed flood on the upper Green River, Lodore Canyon, Dinosaur National Monument. Poster presentation. In Program with Abstracts of 2005 Geological Society of America, Annual Meeting, Salt Lake City, UT.

Rubin, D.M., Draut, A.E., Schmidt, J.C., Topping, D.J., Alexander, J.S., Brown, K.M., Fuller, A.E., Galbraith, D., Hanes, D.M., Hernandez, J., Johnson, K., Kaplinski, M., Melis, T.S., Nelson, N., Wright, S.A., 2005, Sedimentology of deposits of the 2004 flood in Grand Canyon, Colorado River Ecosystem Science Symposium Abstracts, U.S. Geological Survey, Southwest Biological Science Center, p. 87.

## **PROFESSIONAL TRAINING**

- Statistical methods for environmental data analysis – April 2009
- Using StorRM within MD\_SWMS (USGS-OED) - March 2009
- Field Water Quality Methods for Ground-Water and Surface-Water (USGS-OED) - May 2009
- Sediment data collection techniques (USGS-OED) - March 2010
- Sediment records computation and interpretation (USGS-OED) - May 2010
- Statistical methods for trend and load analysis (USGS-OED) - February 2011
- Quality-control sample design and interpretation (USGS-OED) – January 2012

## **PROFESSIONAL MEMBERSHIPS**

American Geophysical Union (since 2004)

Geological Society of America (since 2004)

## **COLLEGIATE MEMBERSHIPS AND AWARDS:**

- Member of 1998 Colorado State University Student Water Symposium planning committee.
- Vice-President of CSU Geology Club 1998; Secretary 1997.
- “Best College of Natural Resources Research Presentation”, for presentation of REU work in the CSU spring 1998 University Research Symposium.
- “Best of Sediment Transport Session” for presentation of REU work in the CSU fall 1997 Student Water Symposium.
- Inducted to CSU Golden Key National Honor Society fall 1997.

## **PROFESSIONAL SKILLS**

I have a wide spectrum of field and office skills. In the field I am proficient at topographic surveying including level, total-station, and RTK-GPS methods, as well as geomorphic mapping, excavation and interpretation of floodplain trench stratigraphy, dendrochronology, streamflow measurements, and surface and groundwater-quality sampling and processing. I have done much of my fieldwork in remote areas, where good planning and dynamic leadership are imperative. I am proficient in ArcGIS software, and can generally adapt to new software packages rapidly.