

Rebecca L. Caldwell

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Education and Research	<p>Indiana University – Bloomington, IN Ph.D., Geology: expected May 2017 <i>Thesis:</i> “Catchments to Coastlines: Determining the controls on the global distribution of delta morphology and stratigraphy” <i>Advisor:</i> Dr. Douglas Edmonds <i>Minor:</i> Geophysics; <i>Minor Advisor:</i> Dr. Gary Pavlis</p> <p>Boston College – Chestnut Hill, MA M.S., Geology: May 2013 <i>Thesis:</i> “The effect of grain size on river delta process and morphology” <i>Advisor:</i> Dr. Douglas Edmonds</p> <p>University of Pennsylvania – Philadelphia, PA B.A., Geology; Environmental Studies: May 2010 <i>Thesis:</i> “A Cathaysian calamite and its paleobiogeographic implications” <i>Advisor:</i> Dr. Hermann Pfefferkorn <i>Additional research:</i> “Quantifying the effects of wave energy on delta shoreline morphology” <i>Advisor:</i> Dr. Douglas Jerolmack</p>
Awards and Honors	<p>2016 Dissertation Year Research Fellowship, College of Arts and Sciences, Indiana University</p> <p>2016 Outstanding SEPM Oral Presentation Award – Honorable Mention, American Association of Petroleum Geologists Annual Convention & Exhibition 2016</p> <p>2016 Departmental Citizenship Award, Dept. of Geological Sciences, Indiana University</p> <p>2016 Crossroads Geology Conference Best PhD Poster Presentation, Dept. of Geological Sciences, Indiana University</p> <p>2016 First Place, Three Minute Thesis (3MT) research communication competition, The University Graduate School, Indiana University</p> <p>2015 Outstanding Student Paper Award, American Geophysical Union 2015 Fall Meeting</p> <p>2014 Estwing Award for Outstanding Academic Achievement, Dept. of Geological Sciences, Indiana University</p> <p>2014 GSA Research Grant, The Geological Society of America Student Grant Program</p> <p>2014 AAPG Richard W. Beardsley Named Grant, American Association of Petroleum Geologists Grants-in-Aid Program</p> <p>2014 SEPM Student Research Grant, Society for Sedimentary Geology Student Grant Program</p> <p>2013 Crossroads Geology Conference Best PhD Poster Presentation, Dept. of Geological Sciences, Indiana University</p> <p>2013 CSDMS 2.0 Meeting Best Presentation Award, Community Surface Dynamics Modeling System 2013 Annual Meeting</p> <p>2012 Robert Shrock Fellowship in Sedimentary Geology, Dept. of Geological Sciences, Indiana University</p> <p>2011 Outstanding Student Paper Award, American Geophysical Union 2011 Fall Meeting</p> <p>2011 Best 1st Year Research Colloquium Presentation, Dept. of Earth & Environmental Sciences, Boston College</p> <p>2006-2010 Annenberg Scholars Challenge Grant, for “portraying leadership qualities and academic abilities,” University of Pennsylvania</p>

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Publications	<p>Caldwell, R. L., Edmonds, D. A., The effects of sediment properties on deltaic processes and morphologies: A numerical modeling study, 2014, <i>J. Geophys. Res. – Earth Surf.</i></p> <p>Tejedor, A., Longjas, A., Caldwell, R., Edmonds, D., Zaliapin, I., Fofoula-Georgiou, E., Quantifying the signature of sediment composition on the topologic and dynamic complexity of river delta channel networks and inferences toward delta classification, 2016, <i>Geophys. Res. Lett.</i></p> <p>Nijhuis, A. G., Edmonds, D. A., Caldwell, R. L., Cederberg, J. A., Slingerland, R. L., Best, J. L., Parsons, D. R., Robinson, R. A. J., Fluvio-deltaic avulsions during relative sea-level fall, 2015, <i>Geology</i>.</p> <p>Burpee, A. P., Slingerland, R. L., Edmonds, D. A., Parsons, D., Best, J., Cederberg, J., McGuffin, A., Caldwell, R., Nijhuis, A., Royce, J., Grain-size controls on the morphology and internal geometry of river-dominated deltas, 2015, <i>J. Sediment. Res.</i></p> <p>Edmonds, D. A., Caldwell, R. L., “River delta processes and shapes,” 2014, <i>Encyclopedia of Natural Resources</i></p> <p>Caldwell, R. L., Edmonds, D. A., Morphodynamic stratigraphy of river-dominated deltaic bars, <i>in prep</i>, intended for <i>Earth Surf. Proc. Land</i>.</p>
Invited Talks	<p>2014 CSDMS 2014 Annual Meeting Invited Student Keynote, Community Surface Dynamics Modeling System 2014 Annual Meeting, Boulder, CO. (May 21, 2014)</p>
Select Conference Abstracts	<p>Caldwell, R. L., Edmonds, D. A., Best, J. L., Parsons, D. R., Slingerland, R. L., AAPG 2016, “Morphodynamic stratigraphy of river-dominated deltaic bars,” American Association of Petroleum Geologists Annual Convention & Exhibition, Calgary, Alberta, Canada. (June 22, 2016)</p> <p>Tejedor, A., Longjas, A., Caldwell, R., Edmonds, D., Zaliapin, I., Fofoula-Georgiou, E., EGU 2016, “Moving beyond the Galloway diagrams for delta classification: A graph-theoretic approach,” European Geosciences Union General Assembly 2016, Vienna Austria. (April 19, 2016)</p> <p>Caldwell, R. L., Edmonds, D. A., Baumgardner, S. E., Whaling, A., AGU 2015, “Developing a truly global delta database to assess delta morphology and morphodynamics,” American Geophysical Union Fall Meeting, San Francisco, CA. (December 17, 2015)</p> <p>Parsons, D., Burpee, A., Slingerland, R., Edmonds, D., Best, J., Cederberg, J., McGuffin, A., Caldwell, R., Nijhuis, A., IAS 2015, “Grain size controls on the morphology and stratigraphy of river-dominated deltas,” 31st International Association of Sedimentology Meeting of Sedimentology, Krakow, Poland (June, 2015)</p> <p>Caldwell, R. L., Sun, T., AGU 2014, “Fluvio-deltaic response to tectonic and sea-level perturbations,” American Geophysical Union Fall Meeting, San Francisco, CA. (December 18, 2014)</p> <p>Sun, T., Caldwell, R. L., Covault, J. A., Harris, A. D., Milliken, K. T., Moran, K. E., AGU 2014, “Upstream and downstream controls on sediment routing and deposition in a complete ‘source-to-sink’ system,” American Geophysical Union Fall Meeting, San Francisco, CA. (December 15, 2014)</p> <p>Cederberg, J., Slingerland, R. L., Edmonds, D., Best, J., Parsons, D., Burpee, A., Caldwell, R., Lynton, B., McGuffin, A., AAPG 2014, “The effects of relative base level fall on river deltas: A quantitative assessment,” American Association of Petroleum Geologists Annual Convention & Exhibition, Houston, TX (April 7, 2014)</p> <p>Caldwell, R. L., Edmonds, D. A., ICFS 2013, “A morphodynamic link between grain size and delta morphology,” 10th International Conference on Fluvial Sedimentology, Leeds, UK (July 16, 2013)</p>

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<p>Select Conference Abstracts (continued)</p>	<p>Nijhuis, A. G., Edmonds, D. A., Slingerland, R., Parsons, D. R., Best, J. L., Burpee, A., Cederberg, J., Caldwell, R., McGuffin, A., Royce, J., ICFS 2013, "Fluvio-deltaic response to relative sea-level fall: a case study of the Goose River delta, Labrador, Canada," 10th International Conference on Fluvial Sedimentology, Leeds, UK (July, 2013)</p> <p>Burpee, A. P., Slingerland, R. L., Edmonds, D. A., Parsons, D. R., Best, J., Caldwell, R., Nijhuis, A., Royce, J., Cederberg, McGuffin, A., Prozeller, S., AAPG 2013, "Grain size controls on planform morphology and stratigraphy of river-dominated deltas," American Association of Petroleum Geologists Annual Meeting, Pittsburgh, PA (May, 2013)</p> <p>Caldwell, R. L., Edmonds, D. A., CSDMS 2013, "A morphodynamic link between grain size and delta morphology," Community Surface Dynamics Modeling System Annual Meeting, Boulder, CO. (March 23, 2013)</p> <p>Slingerland, R., Edmonds, D. A., Parsons, D. R., Best, J. L., Royce, J., Burpee, A., Cederberg, J., Caldwell, R., Nijhuis, A., McGuffin, A., AGU 2012, "Morphodynamics and sedimentology of a falling stage sandy fjord delta, Goose River, Labrador," American Geophysical Union Fall Meeting, San Francisco, CA. (December 7, 2012)</p> <p>Caldwell, R. L., Edmonds, D. A., GSA 2012, "Grain size control on the morphology of deltas and their distributary channels," Geological Society of America Annual Meeting, Charlotte, NC. (November 5, 2012)</p> <p>Caldwell, R. L., Edmonds, D. A., AGU 2011, "The effect of grain-size distribution on river delta morphology," American Geophysical Union Fall Meeting, San Francisco, CA. (December 6, 2011)</p>
<p>Employment</p>	<p>2014, 2015 Associate Instructor, Dept. of Geological Sciences, Indiana University - Prepared and taught sedimentology and stratigraphy labs. - Aided in construction of labs and lectures.</p> <p>2013-2015, 2011-2012 Research Assistant, Dr. Douglas Edmonds, Dept. of Geological Sciences, IU; and Dept. of Earth & Environmental Sciences, Boston College - Conducted research of river delta systems using numerical modeling, remotely sensed data, and field data. - Extensive experience with Delft3D, MATLAB, ground-penetrating radar collection and processing, and ArcGIS.</p> <p>2013, 2014, 2015 Earth Science Intern, Basin Analysis R&D, Chevron Energy Technology Company - Participated in development, testing, and application of computational model for source-to-sink sediment transport and stratigraphic simulation. Led a validation and calibration effort for the model. Developed code/tools for model output analysis. - Experience with numerical forward stratigraphic models Dionisos and Sedsim.</p> <p>2010-2011 Teaching Assistant, Dept. of Earth & Environmental Sciences, Boston College - Constructed and taught geology labs and lectures to undergraduate students.</p> <p>2010 Data Management Intern, John Yagecic, Delaware River Basin Commission, Trenton, NJ - Constructed extensive database housing Commission's water quality monitoring data.</p> <p>2009-2010 Research Assistant, Dr. Ted Daeschler, Academy of Natural Sciences of Philadelphia, Philadelphia, PA - Identified Devonian vertebrate fauna and constructed digital database of collection.</p> <p>2006-2009 Intern, Global Youth Leadership Institute, Milwaukee, WI - Directed workshops in environmental leadership for students and teachers. - Responsible for development of group cohesion and communication for 40+ people.</p>

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Field and Short Courses	<p>2014 BanglaPIRE Field School: Interaction of Sedimentation and Tectonics in the Ganges-Brahmaputra River Delta</p> <p>2013 ExxonMobil Global Geoscience Recruiting Guadalupe Mountains Field Course</p> <p>2012 Sequence Stratigraphy for Graduate Students, GSA Annual Meeting</p>
Leadership and Service	<p>American Geophysical Union. 2011-2016 <i>Student Committee member</i>, Earth and Planetary Surface Processes focus group, 2014-2016 - Plan and execute annual student networking event and participate in the EPSP Executive Committee meeting during the AGU Fall Meeting.</p> <p>American Association of Petroleum Geologists, Indiana University. 2012-2016 <i>Chapter President</i>, 2014-2016 - Responsible for overall administration of group, planning of various departmental career-related workshops, and organization of group participation in national and regional AAPG activities.</p> <p>Sigma Gamma Epsilon, The National Honor Society for the Earth Sciences, Indiana University. <i>Crossroads Geology Conference Co-Chair</i>, 2016 - Co-organize annual departmental student-run geology conference for ~50 student participants. <i>President of Rho Chapter</i>, 2012-2014 - Responsible for overall administration of group, organization of service events, and external affairs. Participated in organization of annual Crossroads Geology Conference, 2013-2015.</p> <p>Graduate Student Association, Boston College. 2010-2012 <i>Graduate Group Leader for Dept. of Earth & Environmental Sciences</i>, 2011-2012 - Organized annual departmental research colloquium and educational workshops.</p> <p>Boston College Graduate Dance Group, Boston College. 2010-2012 <i>Co-Founder and Chair</i> - Responsible for establishing the group of 25+ members, overall administration, class instruction, and external affairs.</p> <p>Alpha Phi Omega National Service Fraternity, UPenn. 2008-2010 (lifetime member) - Distinguished Service Key, chapter's highest distinction "in recognition for outstanding service." - Service Award "for showing exceptional commitment to the community, to the brotherhood, and to other fields of service."</p>