J. Wesley Lauer

Education

Ph.D., Civil Engineering (2006)
University of Minnesota, Minneapolis, MN

M. Eng., Civil Engineering (1998)
University of California, Berkeley, CA

B.S.E., Civil Engineering (1996)
Walla Walla College, College Place, WA

Appointments

7/14 – present	Director, Environmental Science Program, Seattle University
9/12 – present	Associate Professor, Civil and Environmental Engineering, Seattle University
9/06 – present	Affiliated Faculty Member, Oceanography, University of Washington
5/12 – 8/13	Associate Geomorphologist, Herrera Environmental Consultants, Seattle, WA
9/06 – 9/12	Assistant Professor, Civil and Environmental Engineering, Seattle University
9/02 – 9/06	Graduate Research Assistant, Saint Anthony Falls Laboratory, University of Minnesota
9/05 – 12/05	Graduate Teaching Assistant, Civil Engineering, University of Minnesota
6/98 – 8/02	Civil Engineer/Hydrologist, Questa Engineering Corporation, Richmond, California
6/97 – 5/98	Graduate Student Researcher, Geology and Geophysics, University of California, Berkeley

Professional Licensure

Professional Civil Engineer, certified by state of Washington, 2008 (44893)

Publications

Refereed Journal Articles (underline indicates SU student co-author)

Lauer, J.W., C. Echterling, C. Lenhart, P. Belmont, R. Rausch, (2017). Air-photo based change in channel width in the Minnesota River basin: Modes of adjustment and implications for sediment budget. *Geomorphology* 297, 170-184.

Huete-Peréz, J.A., M. Ortega-Hegg, G.R. Urquhart, A.P. Covich, K. Vammen, B.E. Rittmann, J.C. Miranda, S. Espinoza-Corriols, A. Acevedo, M.L. Acosta, J.P. Gómez, M.T. Brett, M. Hanemann, A. Härer, J. Incer-Barquero, F.J. Joyce, **J.W. Lauer,** J.M. Maes, M.B. Tomson, A. Meyer, S. Montenegro-Guillén, W.L. Whitlow, J.L. Schnoor, P.J.J. Alvarez, (2016). Critical Uncertainties and Gaps in the Environmental- and Social-Impact Assessment of the Proposed Interoceanic Canal through Nicaragua. *BioScience* 66, 632-645.

Lauer, J.W., E. Viparelli, H. Piégay, (2016). Morphodynamics and Sediment Tracers in 1-D (MAST-1D): 1-D sediment transport that includes exchange with an off-channel sediment reservoir. *Advances in Water Resources* 98: 135-149.

Gnanapragasam, G., **J.W. Lauer**, J.P. Smith-Pardo, M. Marsolek, N. Canney, (2015). International civil engineering capstone projects - benefits, challenges and lessons learned. *International Journal of Engineering Education* 31(6B), 1869-1880.

Schottler, S.P., J. Ulrich, P. Belmont, R. Moore, **J.W. Lauer**, D. R. Engstrom, J.E. Almendigner, (2014). Twentieth century agricultural drainage creates more erosive rivers. *Hydrological Processes* 28: 1951-1961.

Viparelli, E., **J.W. Lauer**, P. Belmont, and G. Parker, (2013). "A numerical model to develop long-term sediment budgets using isotopic sediment fingerprints." *Computers and Geosciences* 53: 114-122.

Belmont, P., K.B. Gran, S.P. Schottler, P.R. Wilcock, S.S. Day, C. Jennings, **J.W. Lauer,** E. Viparelli, J.K. Willenbring, D.R. Engstrom, and G. Parker, (2011). "Large shift in source of fine sediment in the Upper Mississippi River." *Environmental Science and Technology* 45, 8804-8810.

Gran, K., P. Belmont, S.S. Day, N. Finnegan, C. Jennings, **J.W. Lauer,** and P. Wilcock, (2011). "Landscape evolution in South-Central Minnesota and the role of geomorphic history on modern erosional processes." *GSA Today* 21, 7-9.

Parker, G., Y. Shimizu, G.V. Wilkerson, E.C. Eke., J.D. Abad, **J.W. Lauer**, C. Paola, W.E. Dietrich, and V.R. Voller, (2011). "A new framework for modeling the migration of meandering rivers." *Earth Surface Processes and Landforms* 36, 70-86.

Lauer, J.W., and J. Willenbring, (2010). "Steady-state reach-scale theory for radioactive tracer concentration in a simple channel/floodplain system." *Journal of Geophysical Research* 115: F04018

Lauer, J.W., G. Parker, and W. Dietrich, (2008). "Response of the Strickland and Fly River confluence to postglacial sea level rise." *Journal of Geophysical Research* 113(1), F01S06, doi:10.1029/2006JF000626.

Lauer, J.W., and G. Parker, (2008). "Modeling framework for sediment deposition, storage, and evacuation in the floodplain of a meandering river, part I: theory." *Water Resources Research* 44(4), W04425*,* doi:10.1029/2006WR005528.

Lauer, J.W., and G. Parker, (2008). "Modeling framework for sediment deposition, storage, and evacuation in the floodplain of a meandering river, part II: application to the Clark Fork River, Montana." *Water Resources Research* 44(8), W08404, doi:10.1029/2006WR005529*.*

Aalto, R., **J.W. Lauer**, and W. Deitrich, (2008). "Spatial and temporal dynamics of sediment accumulation and exchange along Strickland River floodplains (PNG), over decadal-to-centennial time scales" *Journal of Geophysical Research* 113(1)*,* F01S04, doi:10.1029/2006JF000627*.*

Swanson, K.M., E. Watson, W. E. Dietrich, S. Apte, **J.W. Lauer**, R. Aalto, M. Bera, A. Marshall, and M. Taylor, (2008). "Decadal sedimentation rates on the floodplain of the Strickland River, Papua New Guinea." *Journal of Geophysical Research* 113(1), F01S03, doi: 10.1029/2006JF000623*.*

Parker, G., T. Muto, Y. Akamatsu, W.E. Dietrich, and **J.W. Lauer,** (2008), "Unraveling the conundrum of river response to rising sea level from laboratory to field. Part I. Laboratory experiments." *Sedimentology* 55(6), 1643-1655.

Parker, G., T. Muto, Y. Akamatsu, W.E. Dietrich, and **J.W. Lauer**, (2008), "Unraveling the conundrum of river response to rising sea level from laboratory to field. Part II. The Fly-Strickland River System, Papua New Guinea." *Sedimentology* 55(6), 1657-1686.

Lauer, J.W. and G. Parker, (2008). "Net local removal of floodplain sediment by river meander migration." *Geomorphology* 96(1-2), 123-149.

Book Chapters (Refereed)

Cordero, M., A. García, N. Lacayo, J. Ramos, L. Yescas, E. Peña, **W. Lauer,** J. Archibald, (2018) World Bank model calibration project with SWAT methodology in Ochomogo River, Nicaragua (1st Stage). In: Matsumura-Tundisi, T. and J.G. Tundisi, eds. *Water Resources Management*, Editora Scienza, São Carlos.

Piégay, H., A. Alber, **J. W. Lauer**, A. Rollet, E. Wiederkehr, (2012). "Bio-physical characterization of fluvial corridors at reach to network scales." In: Carbonneau, P., and H. Piégay, eds. *Remote Sensing of Rivers: Management and Actions,* Wiley, Chichester.

Lauer, J.W., (2012). "The importance of off-channel sediment storage in 1-D morphodynamic modeling." In: Church, M., P. Biron, and A. Roy, eds., *Gravel Bed Rivers: Processes, Tools, Environments*, Wiley, Chichester.

Conference Proceedings

Grignard, A., G. Fantino, **J.W. Lauer**, A. Verpeaux, A. Drogoul, (2015). "Agent-based visualization: A simulation tool for the analysis of river morphosedimentary adjustments" B. Gaudou and J.S. Sichman (Eds.) Multi-Agent Based Simulation XVI, Istanbul, Turkey, May 5. Revised Selected Papers.

Lauer, J.W., C. Li, E. Viparelli, and H Piégay, (2014). "MAST-1D: A Size-Specific Sediment Transport and Tracer Model with Off-Channel Storage" ASCE World Water and Environmental Resources Congress, Portland, Oregon June 1-5.

Lauer, J.W. and G. Parker, (2005). "Response of a Simple Channel Network to Post-Glacial Sea Level Rise."Proceedings of the River, Coastal, and Estuarine Morphodynamics Conference, Urbana, IL. October 4-7.

Lauer, J.W. and G. Parker, (2005). "Net Transfer of Sediment from Floodplain to Channel on Three Southern US Rivers." ASCE World Water and Environmental Resources Congress, Anchorage, Alaska. May 15-19.

Lauer, J.W. and G. Parker, (2004). "Modeling Channel-Floodplain Co - evolution in Sand-Bed Streams." ASCE World Water and Environmental Resources Congress, Salt Lake City, June 28- July 1.

Invited Presentations

Lauer, J.W., Echterling, C., Lenhart, C., Rausch, R., Belmont, P. (2017). "Channel width change as a potential sediment source, Minnesota river basin." Presented at American Geophysical Union, New Orleans, LA, 11-15 December.

Lauer, J.W. (2015). "Sediment sorting in channel-floodplain complexes: Modeling approach for coarse bed systems", Presented at Workshop on Modeling Mixed-Sediment River Morphodynamics, Delft, Netherlands, 27-29 May.

Lauer, J.W. (2013). "Numerical model for channel/floodplain exchange on a gravel bed river: relative importance of upstream and downstream boundaries and of lateral exchange", Abstract EP41D-01 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.

Lauer, J.W. (2013). "A Numerical Model for Sediment Tracer Movement through an Actively Evolving River-Floodplain System." Presented at Centre Européen de Recherche et d'Enseignement des Géosciences de l'Environnement (CEREGE), Aix-Marseille Université, Aix, France, 24 May.

Lauer, J.W. (2009), "The role of streambanks in floodplain sediment budgets" Geological Society of America Annual Meeting, Portland, OR, October 18-21.

Lauer, J.W. (2009), "Holocene morphodynamic evolution and sediment aging in the Fly River System, Papua New Guinea" Marine Geology and Geophysics Seminar, University of Washington, Seattle, May 11.

Lauer, J.W. (2009), "Modeled long-term response of the Clark Fork River floodplain to mine-related sediment loading", Geosciences seminar series, University of Montana, Missoula, April 13.

Lauer, J.W. (2008), "Modeling net downstream imbalances in fine sediment along meandering rivers", Fine Sediment and the Chesapeake Bay Watershed, Linthicum Heights, MD, September 16-17.

Lauer, J.W. (2008), "Net local removal of floodplain sediment by river meander migration" École normale supérieure, Lettres et sciences humaines, Lyon, France, September 2.

TEACHING EXPERIENCE

Seattle University, Seattle, WA

CEEGR 3310, Fluid Mechanics (Fall 2006-2018, Winter 2007-2008)
CEEGR 3350, Engineering Hydraulics (Winter 2007-2015)
CEEGR 3370, Fluids Lab (Spring 2008, Fall and Winter 2008-2014)
CEEGR/ENSC 3710, Water Resources I (Spring 2007-2018)
CEEGR 4720, Water Resources II (Fall 2007-2018)
ENSC 2400, Environmental Sensors (Winter 2018)
ENSC 4870-4890; CEEGR 4870, Senior Synthesis (2014, 2015)
UCOR 3800, Global Landscape Dynamics (Spring 2017-2018)
USAP 1000, Introduction to Seattle University (Fall 2016)

SERVICE ACTIVITIES

Reviewer: *Geology, Advances in Water Resources*, *Aquatic Sciences*, *Ecological Applications, Sedimentology, Geomorphology, Earth Surfaces Processes and Landforms, Journal of Geophysical Research, Journal of Hydrology, Journal of Environmental Management, Science of the Total Environment, Water Resources Research,* U.S. Geological Survey, National Science Foundation

Board member, Glacier Peak Institute (2016-present). Participate in monthly planning meetings and committee work for regional outdoor-education organization.

Member, ASCE Environmental Water Resources Institute Student Council (2017-present).

ASCE Excellence in Water Resources Engineering Education task committee. Served as contributor and reviewer for a compendium on water resources teaching activities

GRANTS, AWARDS AND FELLOWSHIPS

Seattle University Bannan Chair of Engineering, 2015-2017
Seattle University Global Engagement Grants, 2016, 2018
Seattle University Center for Environmental Justice and Sustainability, 2014-2015 Faculty Fellowship
Seattle University Professional Development Grant, 2010
U.S. Department of Fish and Wildlife (as subcontract through Utah State University): Walker River, Nevada, Geomorphic Analysis
National Science Foundation Grant OCE 0742476, Collaborative Research: Geomorphodynamic Modulation of Biogeochemical Fluxes and Basin Stratigraphy of the Fly River, 2008-2011
Minnesota Pollution Control Agency, An Integrated Sediment Budget for the Le Sueur River basin, Minnesota, 2007-2010
Anderson Award, University of Minnesota, 2005
Graduate School Fellowship, University of Minnesota, 2002–2003, 2004–2005
Regent's Fellowship, University of California, Berkeley, 1996–1997