

Joseph J. Hamman, MSCE, PE

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RESEARCH INTERESTS:

Climate Modeling, Land-Atmosphere Interactions, Climate Variability, Climate Change Impacts, and Water Resources Management

CURRENT RESEARCH:

Regional Arctic System Model (RASM).
Coupled Glacier Hydrologic Modeling in the Columbia River Basin.
Analysis of Cool-Season Precipitation in Western United States.

EDUCATION:

Ph.D. Candidate, Civil and Environmental Engineering, Univ. of Washington, expected graduation: Fall 2016.
M.S., Civil Engineering, Dept. of Civil and Environmental Engineering, Univ. of Washington, 2012.
Emphasis: Climate Change Impacts, Hydrology, and Water Resources.
Thesis: Effects of Projected Twenty-First Century Sea Level Rise, Storm Surge, and River Flooding on Water Levels in Puget Sound Floodplains and Estuaries.
B.S., Civil Engineering, Dept. of Civil and Environmental Engineering, Univ. of Arizona, 2007.
Emphasis: Water Resources and Geotechnical Engineering.

POSITIONS HELD:

2012-present	Research Assistant, Land Surface Hydrology Group, Univ. of Washington, Seattle, WA.
2010-2014	Water Resource Specialist, Cardno TEC, Seattle, WA.
2013	Adjunct Professor, Dept. of Civil and Environmental Engineering, Seattle Univ., Seattle, WA.
2010-2012	Research Assistant, Alan Hamlet, Univ. of Washington, Seattle, WA.
2010	Aquatic Scientist, Taylor Associates, Seattle, WA.
2007-2009	Civil Designer II, EIT, Roth-Hill Engineering Partners, Bellevue, WA.
2007	Civil Engineering Intern, DOWL Engineers, Tucson, AZ.

TEACHING EXPERIENCE:

Fall 2013	Teaching Assistant, Environmental and Water Resource Seminar.
Spring 2013	Adjunct Professor: CEEGR 371 Water Resource Engineering I – undergraduate course at Seattle University. (Teaching evaluations available by request).
2012-2014	Teaching Assistant, Environmental and Water Resource Seminar.

HONORS & AWARDS:

Spring 2012	Univ. of Washington Water Symposium Best Student Presentation Award.
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PROFESSIONAL LICENSES:

2013-present	Licensed Professional Engineer in the State of Washington: 50453.
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PROFESSIONAL MEMBERSHIPS:

American Geophysical Union (AGU)
American Water Resources Association (AWRA)
American Society for Civil Engineers (ASCE)

SELECT OPEN SOURCE SOFTWARE CONTRIBUTIONS:

cdo-bindings– Python bindings to the Climate Data Operators (CDO) package.
nco-bindings – Python bindings to the NetCDF Operators (NCO) package.
XRAY - N-D labeled arrays and datasets in Python.
VIC – Variable Infiltration Capacity Hydrologic model.
VICpy – Python toolbox for use with the VIC model.
RVIC – Streamflow routing model for macroscale distributed hydrologic models.

SELECT PUBLICATIONS:

Hamman, J.J., Nijssen, B., Roberts, A., Lettenmaier D.P., Maslowski, W. (Manuscript in preparation - 2015). A simple coupled streamflow routing model for global and regional climate models.
Hamman, J.J., Nijssen, B., Roberts, A., Osinski, R., Lettenmaier D.P., Maslowski, W. (Manuscript in preparation - 2015). Land-Ocean Coupling in the Regional Arctic System Model.
Hamman, J.J., Hamlet, A.F., Lee, Se-Yeun, Grossman, E.E., Fuller, R. (2015). Combined Effects of Projected Sea Level Rise, Storm Surge, and Peak River Flows on Water Levels in the Skagit Floodplain. Northwest Science, in review.
Hamlet, A.F., **Hamman, J.J.**, Littell, J. (Manuscript in preparation - 2015). Diagnosis of Changing Precipitation Statistics in the Western U.S. from 1975-present.
Freitag, B., Carlton, D., & **Hamman, J.** (2012). Building better flood risk maps: Lessons learned from the electric car. Natural Hazards Observer, XXXVII (1), 8-10.

SELECT PRESENTATIONS:

Hamman, J.J., Brunke, M., Zeng, X., Roberts, A., Maslowski, W., Lettenmaier, D.P., Nijssen, B. (2014, December). Representation of the Land Surface in the Regional Arctic System Model (RASM). Poster presented at the 2014 American Geophysical Union Fall Meeting, San Francisco, CA.
Hamman, J.J., Nijssen, B., Lettenmaier, D.P., Naz, B., Fyke, J. (2014, September). A Macroscale Glacier Model to Evaluate Climate Change Impacts in the Columbia River Basin. Oral presentation at the 2014 Pacific Northwest Climate Science Conference, Seattle, WA.
Hamman, J.J., Nijssen, B., Roberts, A., Osinski, R., Craig, A.P., Clement-Kinney, J., Maslowski, W., Lettenmaier, D.P. (2013, December). Coupled Streamflow Routing in the Regional Arctic System Model (RASM). Poster session presented at the 2013 American Geophysical Union Fall Meeting, San Francisco, CA.
Hamman, J.J. (2013, September). The Regional Arctic System Model: Overview and Coupled Streamflow Routing. Oral presentation at the 2011 University of Washington / University of British Columbia Water Symposium, Vancouver, BC, Canada.
Hamman, J.J., B. Nijssen, A. Roberts, and D. Lettenmaier (2013, May). The Land-Ocean Freshwater Flux in the Regional Arctic System Model (RASM): Assessing Model Performance Using Streamflow. Oral presentation for the 12th Conference on Polar Meteorology and Oceanography, Seattle, WA.
Hamman, J.J., Hamlet, A.F., Grossman, E.E., Fuller, R. (2012, December). Effects of Projected Twenty-First Century Sea Level Rise, Storm Surge, and River Flooding on Water Levels in the Skagit River Floodplain and Estuary. Poster session presented at the 2012 American Geophysical Union Fall Meeting, San Francisco, CA.
Nijssen, B., Hamman, J.J., Roberts, A., Tan, A., Lettenmaier, D.P. (2012, December). Land Surface Hydrology and the Land-Ocean Freshwater Flux in the Regional Arctic System Model (RASM). Poster session presented at the 2012 American Geophysical Union Fall Meeting, San Francisco, CA.
Hamman, J.J. (2012, October). Impacts on Flooding in the Skagit River - Developing tools for better floodplain management. Oral presentation for Washington Cooperative Fish and Wildlife Research Unit Seminar Series, Olympia, WA.
Hamman, J.J. (2012, October). Impacts on Flooding in the Skagit River - Developing tools for better floodplain management. Oral presentation for King County Brownbag Seminar Series: Responding to Climate Change, Seattle, WA.
Hamman, J.J. (2012, October). Planning for Climate Change and Flooding in the Lower Skagit River Basin. Oral presentation for URBDP 598C - Floodplain Management and Planning for River Communities, University of Washington, Seattle, WA.

- Hamman, J.J., Hamlet, A.F. (2012, September). Effects of Projected Twenty-First Century Sea Level Rise, Storm Surge, and River Flooding on Water Levels in the Skagit River Floodplain. Oral presentation at the 2012 Pacific Northwest Climate Science Conference, Boise, ID.
- Hamman, J.J. (2012, June). Effects of Projected Twenty-First Century Sea Level Rise, Storm Surge, and River Flooding on Water Levels in Puget Sound Floodplains and Estuaries. Masters Thesis Defense presentation, Department of Civil & Environmental Engineering, University of Washington, Seattle, WA.
- Hamman, J.J., Hamlet, A.F. (2012, April). Increases in Puget Sound Estuarine Flood Risk Under Climate Change. Poster session presented at the 2012 University of Washington Water Symposium, Seattle, WA.
- Hamman, J.J., Hamlet, A.F. (2011, September). Diagnosis of Changing Cool Season Precipitation Statistics in the Western U.S. from 1916-2003. Oral presentation at the 2011 University of Washington / University of British Columbia Water Symposium, Vancouver, BC, Canada.
- Hamman, J.J., Hamlet, A.F., Littell, J. (2011, September). Diagnosis of Changing Cool Season Precipitation Statistics in the Western U.S. from 1916-2003. Poster session presented at the 2011 Pacific Northwest Climate Science Conference, Seattle, WA.