

SE-YEUN LEE

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[Google Scholar](#)

EDUCATIONAL HISTORY

2009 June	Ph.D. Civil and Environmental Engineering, University of Washington Dissertation Title: <i>Development of Optimized Flood Control Rule Curves for the Columbia River Basin in Response to Climate Change and Interannual Climate Variability</i>
2002 June	MSCE Civil and Environmental Engineering, University of Washington Thesis Title: <i>PCE Degradation in Methanogenic Consortia: Implications for Treatment Trenches</i>
1996 Feb	MSEE Environmental Engineering, Chonbuk National University, South Korea Thesis Title: <i>The Transport of Cadmium in Soil</i>
1994 Feb	BS Environmental Engineering, Chonbuk National University, South Korea

PROFESSIONAL EXPERIENCE

2024-Present	Associate Teaching Professor, Civil and Environmental Engineering, Seattle University
2022-2024	Assistant Teaching Professor, Civil and Environmental Engineering, Seattle University
2019-2022	Instructor, Civil and Environmental Engineering, Seattle University
2018-2019	Lecturer, Civil and Environmental Engineering, Seattle University
2014-2018	Research Scientist, Climate Impacts Group, University of Washington
2015-2016	Instructor, Civil and Environmental Engineering, Seattle University
2013-2014	Postdoctoral Research Associate, School of Environmental and Forest Sciences, University of Washington
2009-2012	Postdoctoral Research Associate, Civil and Environmental Engineering, University of Washington
2011-2012	Co-Instructor, Civil and Environmental Engineering, University of Washington
1999-2009	Research Assistant Civil and Environmental Engineering, University of Washington
1998-1999	Instructor, Civil and Environmental Engineering, Jeonju University, South Korea
1997-1999	Instructor, Environmental Engineering, Kunsan National University, South Korea

TEACHING

Lecturer/Instructor/Assistant Teaching Professor at Seattle University	
2025	Aerial Imaging and Mapping (ENSC 3800)
2021	Environmental Sensors (ENSC 2400)
2020-Present	Water Resources II (CEEGR 4720)
2020-Present	Introduction to Geographic Information System (EVST 3500)
2020-Present	Environmental Field Methods (ENSC 1500)
2020-Present	Natural Systems (ENSC 3300)
2019-Present	Confronting Climate Change (UCOR 3800)

2018-Present A Sound Ecosystem (UCOR 1800)
 2015-2016 Global Water Supply (UCOR 3840)
 2016 Applied Hydraulic Lab (CEEGR 3350)
Co-Instructor at Civil and Environmental Engineering, University of Washington
 2011-2012 Deterministic System (CEE 491)
Instructional Assistant at Civil and Environmental Engineering, University of Washington
 2006, 2007 Hydraulic Engineering (CEE 345)
 2005, 2007 Fluid Mechanics (CEE 342)
 2005, 2006 Physical Hydrology (CEE 476)
 2005, 2006 Open-Channel Flow (CEE 477)
Guest Lecturer at Civil and Environmental Engineering, University of Washington
 2008 Water Resources Planning (CEE 576)
 2006 Hydraulic Design in Environmental Engineering (CEE 481)
Instructor at Civil and Environmental Engineering, Jeonju University, South Korea
 1998-1999 Environmental Engineering I
 1998 Environmental Engineering II
 1999 The Design for Wastewater Treatment System
Instructor at Environmental Engineering, Kunsan National University, South Korea
 1997-1999 Introduction to Environmental Engineering

SELECTED HONORS AND AWARDS

2026 2026 Provost's Award for Excellence in Teaching in the CORE

SELECTED PROFESSIONAL TRAININGS

2024 Community Engaged Learning Faculty Fellowship (CELFF) Sept 4th – 6th, 2024, SINE 135, Seattle University, Seattle, WA.
 2022 *Migrating from ArcMap to ArcGIS Pro* Aug 1st, Aug 2nd, 2022, Esri Training.
 2020 *Summer 2020 Course Design*, July 15th, July 22nd, July 29th, August 6th, August 6th, 2020, Online Courses provided by Seattle University.
 2019 *New Faculty Advisor Training* Oct 10th, 2019, Casey 525, Seattle University, Seattle, WA.
 2019 *Ignatian Pedagogy Series: Inclusive Pedagogy* May 10th, May 17th, Jun 7th, 2019, Hunt 100, Seattle University, Seattle, WA.
 2019 *Ignatian Pedagogy Series: Active Learning* Jan 14th, Mar 4th, Mar 18th, 2019, Hunt 110, Seattle University, Seattle, WA.
 2018 *Seminar by Michael Prince on Student Learning* Dec.13th, 2018, PIGT 309, Seattle University, Seattle, WA.
 2018 *New Faculty Institute 2018* hosted by Seattle University, Sept 11th – 12th, 2018, Chardin, Seattle University, Seattle, WA.
 2018 *Faculty Grants Management: General Workshop* hosted by Professional & Organizational Development, University of Washington, Jan 16th, UW Tower Building Auditorium, University of Washington, Seattle, WA.

GRANTS/FUNDS

- 2026 EPA via Snohomish (\$95,000): Snohomish County Critical Area. Monitoring and Adaptive Management Planning. PI.
- 2024 Seattle City Light (\$19,500): Effects of Vegetation Change on Streamflow. PI.
- 2022 Seattle University (\$12,000): Using Environmental Sensors to Evaluate Salmonid Passage Through Beaver Dams. PI with J. W. Lauer for 2022 Summer Undergraduate Research Program.
- 2021 Snoqualmie Valley Watershed Improvement district (\$15,000): The Impacts of Pond Levelers on Beaver Dam Overtopping and Fish Passage. PI with J. W. Lauer for the capstone project for ENSC senior students for academic year 2021-2022.
- 2021 Seattle City Light (\$16,109): Future Peak Streamflow Analytics for the Skagit River. PI.
- 2020 U.S. Forest Service (\$25,000): Joint Venture Agreement, Integrating Infrastructure and Ecosystem Service to Improve Aquatic Habitat. PI with J. W. Lauer.
- 2018 BIA Tribal Resilience Program's Grant (\$148,998): Building resilience for the Suquamish Tribe: Integrating changes in streamflow and water temperatures into a vulnerability assessment for salmonids in the Chico Creek Watershed. PI with A. Fullerton.
- 2018 BIA Tribal Resilience Program's Grant (\$149,256): Assess impacts of climate change on coldwater habitat, and implications for native salmonid populations of the Snoqualmie River to support Snoqualmie Tribal resilience and coastal management planning. PI with G. Mauger.
- 2017 Yakama Nation (\$58,246.30): Climate Vulnerability Assessment for Meadows. PI with J. Casola, M. Halabisky, and S. Hall.
- 2017 Northwest Climate Adaptation Science Center (\$129,542.03): Using Data and Models to Assess Impacts and Adapt to Climate Change: Handbook for Current and Future Stream Temperature. Co-PI with J. Casola, C. Torgersen and A. Fullerton.
- 2016 King County (\$390,000): Impacts of Climate Change on Flooding in King County Rivers. Co-PI with G. Mauger.
- 2015 Sauk-Suiattle Indian Tribe (\$190,000): Climate Change Vulnerability Assessment of the Sauk Watershed. Co-PI with E. Istanbuluoglu, A. Hamlet, and C. Bandaragoda.

SELECTED PUBLICATIONS

Journal Articles

- Dare, G. C., Ryan, M. E., **Lee, S.Y.**, M'Gonigle, L. K., McCaffery, R. M., Hamlet, A. F., Adams, M. J., and Palen, W. J. (2026). "Climate driven changes in wetland hydroperiods predict losses in habitat suitability for amphibian breeding". *Ecosphere*. (Accepted).
- Tovinkere, S., and **Lee, S. Y.** (2025). "Effects of Vegetation Change on Streamflow". *Seattle University Undergraduate Research Journal*. Vol.9, Article 13.
<https://scholarworks.seattleu.edu/suurj/vol9/iss1/13>.
- Lauer, J. W., Klinger, P., O'Shea, S. and **Lee, S.Y.** (2022). "Development and validation of an open-source four-pole electrical conductivity, temperature, depth sensor for in-situ water

- quality monitoring in an estuary". *Environmental Monitoring and Assessment*. DOI: 10.1007/s10661-022-10493-y. PMID: 36542156.
- Lee, S.Y.,** Fullerton, A.H., Sun, N. and Torgersen, C.E. (2020). "Projecting Spatiotemporally Explicit Effects of Climate Change on Stream Temperature: A Model Comparison and Implications for Coldwater Fishes". *Journal of Hydrology*. DOI: <https://doi.org/10.1016/j.jhydrol.2020.125066>.
- Steel, E.A., Marsha, A., Fullerton, A.H., Olden, J.D., Larkin, N.K., **Lee, S.Y.,** and Ferguson, A. (2018). "Thermal Landscapes in a Changing Climate: Biological Implications of Water Temperature Patterns in an Extreme Year". *Journal of Fisheries and Aquatic Science*. DOI: <https://doi.org/10.1139/cjfas-2018-0244>.
- Fullerton, A.H., Torgersen, C.E., Lawler, J.J., Steel, E.A., Ebersole, J.L., and **Lee, S.Y.** (2018). "Longitudinal Thermal Heterogeneity in Rivers and Refugia for Coldwater Species: Effects of Scale and Climate Change". *Aquatic Sciences*, 80(3)1-15. DOI: <https://doi.org/10.1007/s00027-017-0557-9>.
- Lee, S.Y.,** Hamlet, A.F., and Grossman, E. (2016). "Impacts of Climate Change on Regulated Streamflow, Flood Control, Hydropower Production, and Sediment Discharge in the Skagit River Basin." *Northwest Science*, 90(1) 23-43. DOI: <http://dx.doi.org/10.3955/046.090.0104>.
- Hamman, J., Hamlet, A.F., **Lee, S.Y.,** Fuller, R., and Grossman, E.F. (2016). "Combined Effects of Projected Sea Level Rise, Storm Surge, and Peak River Flows on Water Levels in the Skagit River Floodplain." *Northwest Science*, 90(1):57-78. DOI: <http://dx.doi.org/10.3955/046.090.0106>
- Lee, S.Y.,** Ryan, M., Hamlet, A.F, Palen, W., Halabisky, M. and Lawler, J.J. (2015). "Modeling the Hydrology of Pacific Northwest Wetland Ecosystems." *PlosOne* 10(9):e0136385, DOI:10.1371/journal.pone.0136385.
- Tohver, I., Hamlet, A.F., and **Lee, S.Y.** (2014). "Impacts of 21st Century Climate Change on Hydrologic Extremes in the Pacific Northwest Region of North America." *Journal of the American Water Resources Association*, 1-16, DOI: 10.1111/jawr.12199.
- Salathé, E.P, Hamlet, A.F., Mass, C.F., **Lee, S.Y.,** Stumbaugh, M., and Steed, R. (2014). "Estimates of 21st Century Flood Risk in the Pacific Northwest based on Regional Climate Model Simulations." *Journal of Hydrometeorology*, 15, 1881-1899, DOI: 10.1175/JHM-D-13-0137.1.
- Safeeq, M., Mauger, G., Grant, G.E., Arismendi, I., Hamlet, A.F, and **Lee, S.Y.** (2014). "Comparing Large-Scale Hydrologic Model Predictions with Observed Streamflow in the Pacific Northwest: Effect of Climate and Groundwater." *Journal of Hydrometeorology*, 15, 2501-2521, DOI: 10.1175/JHM-D-13-0198.1.
- Hamlet, A.F., Elsner, M.M., Mauger, G., **Lee, S.Y.,** and Tohver, I. (2013). "An Overview of the Columbia Basin Climate Change Scenarios Project: Approach, Methods, and Summary of Key Results." *Atmosphere-Ocean*, 1:4, 392-415, DOI:10.1080/07055900.2013.819555.
- Lee, S.Y.,** Hamlet, A.F., Fitzgerald, C.J., and Burges, S.J. (2011). "Daily Time Step Refinement of Optimized Flood Control Rule Curves for a Global Warming Scenario." *Journal of Water Resources Planning and Management*, 137, 309-317, DOI:10.1061/(ASCE)WR.1943-5452.0000125.
- Lee, S.Y.,** Hamlet, A.F., Fitzgerald, C.J., and Burges, S.J. (2011). "Methodology for Developing Flood Rule Curves Conditioned on ENSO Classification." *Journal of the American Water Resources Association*, 47(1), 81-92, DOI: 10.1111/j.1752-1688.2010.00490.x.

- Elsner, M.M., Cuo, L., Voisin, N., Deems, J.S., Hamlet, A.F., Vano, J.A., Mickelson, K.E.B., and Lee, S.Y. (2010). "Implications of 21st Century Climate Change for the Hydrology of Washington State." *Climatic Change*, DOI:10.1007/s10584-010-9855-0.
- Hamlet, A.F., Lee, S.Y., Mickelson, K.E.B., and Elsner, M.M. (2010). "Effects of Projected Climate Change on Energy Supply and Demand in the Pacific Northwest and Washington State." *Climatic Change*, DOI:10.1007/s10584-010-9857-y.
- Lee, S.Y., Hamlet, A.F., Fitzgerald, C.J., and Burges, S.J. (2009). "Optimized Flood Control in the Columbia River Basin for a Global Warming Scenario." *Journal of Water Resources Planning and Management*, 135(6), 440-450, DOI: 10.1061/(ASCE)0733-9496(2009)135:6(440).

Book Chapters and Reports

- Vano, J., Lee, S.Y., and Hamlet, A.F. (2016). "Chapter 112. Columbia River Basin Hydrology", In V.T. Chow (Eds.), *Handbook of Applied Hydrology, Second Edition*, McGraw Hill Education. ISBN 978-0-07-183509-1.
- Tovinkere, S., and Lee, S. Y. (2024). Effects of Vegetation Change on Streamflow. Report prepared for Seattle City Light, Seattle WA. Civil and Environmental Engineering, Seattle University.
- Ranoa, R., and Lee, S. Y. (2021). Future Peak Streamflow Analytics for the Skagit River. Report prepared for Seattle City Light, Seattle WA. Civil and Environmental Engineering, Seattle University.
- Bandaragoda, C., Lee, S.Y., Istanbuloglu, E., and Hamlet, A. (2019). "Hydrology, Stream Temperature, and Sediment Impacts of Climate Change in the Sauk River Basin. " Report prepared for Sauk-Suiattle Indian Tribe, Darrington, WA and Sakgit Climate Science Consortium, Mt Vernon, WA. Available at <https://www.hydroshare.org/resource/e5ad2935979647d6af5f1a9f6bdecdea/>.
- Lee, S.Y., Mauger, G.S., and Won, J.S. (2018). "Effect of Climate Change on Flooding in King County Rivers: Using New Regional Climate Model Simulations to Quantify Changes in Flood Risk." Report prepared for King County. Climate Impacts Group, University of Washington.
- Halabisky, M., Lee, S.Y., Hall, S.A. (2018). "Looking to the Past and to Future to Inform Meadow Restoration on the Yakama Reservation." Report prepared to the Wildlife, Range and Vegetation Resources Management Program of the Confederated Tribes and Bands of the Yakama Nation. Climate Impacts Group, University of Washington and Conservation Science Partners.
- Mauger, G.S., Lee, S.Y., Won, J., Byun, K., and Hamlet, A.F. (2018). "Climate Robust Culvert Design: Probabilistic Estimates of Fish Passage Impediments. Final report for the Skagit Climate Science Consortium." Climate Impacts Group, University of Washington, Seattle.
- Halabisky, M, Lee, S.Y., Won, J., Hall, S.A. and Rule, M. (2017). "Can We Conserve Wetlands under a Changing Climate?" Final Report to the Great Northern Landscape Conservation Cooperative and the Northwest Climate Science Center.
- Lee, S.Y., Mauger, G. S., and Whitely Binder, L. (2015). "Climate Change Impacts on Tacoma Power Watersheds." Final report for Tacoma Power by the Climate Impacts Group, University of Washington, Seattle, WA.