

SE-YEUN LEE

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[Google Scholar](#)

EDUCATIONAL HISTORY

- 2009 June Ph.D. Civil and Environmental Engineering, University of Washington
Dissertation Title: *Development of Optimized Flood Control Rule Curves for the Columbia River Basin in Response to Climate Change and Interannual Climate Variability*
Advisor: Stephen J. Burges
Committee: Alan F. Hamlet, Dennis P. Lettenmaier, and Nate Mantua
- 2002 June MSCE Civil and Environmental Engineering, University of Washington
Thesis Title: *PCE Degradation in Methanogenic Consortia: Implications for Treatment Trenches*
Advisor: John F. Ferguson
Committee: Richard N. Palmer
- 1996 Feb MSEE Environmental Engineering, Chonbuk National University, South Korea
Thesis Title: *The Transport of Cadmium in Soil*
- 1994 Feb BS Environmental Engineering, Chonbuk National University, South Korea
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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 Instructional/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
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SELECTED PUBLICATIONS

Journal Articles

- 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*. <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*. <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.
- 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.
- 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.**, Istanbuluoglu, 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.
- Mauger, G.S., **Lee, S.Y.**, Won, J. (2018). "Mapping the Future of Flood Risk for the Stillaguamish and Snohomish Rivers". Report prepared for the Snohomish Conservation District. 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.
- Mauger, G.S., **Lee, S.Y.**, and Won, J. (2017). "Effect of Climate Change on Streamflow in Icicle, Peshastin, and Mission Creeks." Report prepared for Chelan County. Climate Impacts Group, University of Washington, Seattle.

- Fullerton, A.H., Lawler, J.J., **Lee, S.Y.**, and Torgersen, C.E. (2017). "Incorporating Spatial Heterogeneity in Temperature into Climate Vulnerability Assessments for Coastal Pacific Streams." Final Report to the North Pacific Landscape Conservation Cooperative.
- Mauger, G.S., **Lee, S.Y.**, Bandaragoda, C., Serra, Y., and Won, J.S. (2016). "Refined Estimates of Climate Change Affected Hydrology in the Chehalis basin." Report prepared for Anchor QEA, LLC. Climate Impacts Group, University of Washington, Seattle.
DOI:10.7915/CIG53F4MH.
- 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.
- Littell, J., Mauger, G. S., Salathé, E. P., Hamlet, A.F., **Lee, S.Y.**, Stumbaugh, M. R., Elsner, M.M., Norheim, R.A., Lutz, E.R., and Mantua, N.J. (2014). "Uncertainty and Extreme Events in Future Climate and Hydrologic Projections for the Pacific Northwest: Providing a Basis for Vulnerability and Core/Corridor Assessments." Final Report for Department of the Interior Pacific Northwest Climate Science Center. Climate Impacts Group, University of Washington, Seattle, WA.
- Mauger, G. S., and **Lee, S.Y.** (2014). "Climate Change, Sea Level Rise and Flooding in the Lower Snohomish River Basin." Final Report for The Nature Conservancy by the Climate Impacts Group, University of Washington, Seattle, WA.
- Lee, S.Y.**, and Hamlet, A.F. (2011). "Skagit River Basin Climate Science Report, A Summary Report Prepared for Skagit County and the Envision Skagit Project." Department of Civil and Environmental Engineering and the Climate Impacts Group at the University of Washington, Seattle, WA.
- Hamlet, A.F., **Lee, S.Y.**, Mantua, N.J., Salathé, E.P., Snover, A.K., Steed, R., and Tohver, I. (2010). "Seattle City Light Climate Change Analysis for the City of Seattle, Seattle City Light Department." The Climate Impacts Group, Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Ocean, University of Washington, Seattle, WA.
- Elsner, M.M., Mauger, G.S., Tohver, I., **Lee, S.Y.**, and Hamlet, A.F. (2010). "Chapter 9 in Final Report for the Columbia Basin Climate Change Scenarios Project." The Climate Impacts Group, Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Ocean, University of Washington, Seattle.
- Hamlet, A.F., Mauger, G.S., and **Lee, S.Y.** (2010). "Chapter 8 in Final Report for the Columbia Basin Climate Change Scenarios Project." The Climate Impacts Group, Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Ocean, University of Washington, Seattle.
- Elsner, M.M., Cuo, L., Voisin, N., Deems, J., Hamlet, A.F., Vano, J.A., Mickelson, K.E.B., **Lee, S.Y.**, Lettenmaier, D.P. (2009). "Implications of 21st century climate change for the hydrology of Washington State. Chapter 3.1 in The Washington Climate Change Impacts Assessment: Evaluating Washington's Future in a Changing Climate." The Climate Impacts Group, University of Washington, Seattle, Washington.
- Hamlet, A.F., **Lee, S.Y.**, Mickelson, K.E.B., Elsner, M.M. (2009). "Effects of projected climate change on energy supply and demand in the Pacific Northwest and Washington State. Chapter 4 in The Washington Climate Change Impacts Assessment: Evaluating

Washington's Future in a Changing Climate." The Climate Impacts Group, University of Washington, Seattle, Washington.

SELECTED PRESENTATIONS

- Lee, S.Y.**, and Ranoa, R., the meeting of Skagit Climate Science Consortium, Seattle, WA, Dec. 3rd, 2021, "Future Peak Streamflow Analytics for the Skagit River"
- Lee, S.Y.**, Fullerton, A, Steel, A., and Torgersen C., Selish Sea Ecosystem Conference, Seattle, WA, April 4th – 6th, 2018, "Space matters: incorporating mechanistically determined spatial patterns into projected impacts of climate change on stream temperature."
- Lee, S.Y.**, Fullerton, A, and Torgersen C., Northwest Indian Fisheries Commission Tribal Climate Change Forum Workshop, Ocean Shores, WA, May 25th, 2017, "Analyzing Changes in Cold Water Patches under Climate Change and It's impacts on Salmon."
- Lee, S.Y.**, Northwest Indian Fisheries Commission Tribal Climate Change Forum Workshop, Ocean Shores, WA, May 25th, 2017, "Using Data and Models to Assess Impacts and Adapt to Climate Change."
- Lee, S.Y.**, Fullerton, A, The North Sound Tribal Climate Meeting, Arlington, WA, January 26th 2017, "Options for Analyzing Changes in Cold Water Refuges under Climate Change and it's Impacts on Salmon."
- Lee, S.Y.**, Halabisky, M., Hall, S. and Rule, M., 7th Annual Northwest Climate Science Conference, Skamania, WA, November 14th – 16th, 2016, "Projecting Climate Change Impacts on Wetlands in the Columbia Plateau?"
- Lee, S.Y.**, EPA Climate Change Speaker Series: Can We Conserve Wetlands under a Changing Climate?, Seattle, WA, October 4th, 2016, "Modeling Climate Change Effects on the Water Levels of Wetlands in Washington State."
- Lee, S.Y.**, Ryan, M, Hamlet, A.F., Palen, W.J., Halabisky, M. and Lawler, J.J., 5th Annual Pacific Northwest Climate Science Conference, University of Washington, Seattle, WA, September 9th – 10th, 2014, "Evaluating Climate Change Effects on Wetlands with Field Surveys and Remote Sensing Techniques."
- Lee, S.Y.**, and Hamlet, A.F., 3rd Annual Pacific Northwest Climate Science Conference, Boise, Idaho, October 1st – 2nd, 2012, "Effect of Climate Change on Hydrology and Water Management in the Skagit River Basin."
- Lee, S.Y.**, Hamlet, A.F., and Ryan, M., Society of Wetland Scientists Pacific Northwest Chapter 2012 Regional Conference, September 19th – 21st, 2012, " Evaluating Climate Change Effects on the Hydrology of Montane Wetland."
- Lee, S.Y.**, Hamlet, A.F., and Ryan, M., 4th International Conference on Climate Change: Impacts and Responses, Seattle, WA, July 12th – 13th, 2012, "Modeling Climate Change Effects on the Hydrology of Pacific Northwest Wetland Ecosystems."
- Lee, S.Y.**, and Hamlet, A.F. Second Annual Pacific Northwest Climate Science Conference, University of Washington, Kane Hall, Seattle, WA, Sept., 2011, "Effects of Climate Change on Natural and Regulated Flood Risks in the Skagit River Basin and Prospects for Adaptation."
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TEACHING

Lecturer/Instructor/Assistant Teaching Professor at Civil and Environmental Engineering, Seattle University
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

PROFESSIONAL EXPERIENCES/TRAININGS/SERVICES

Committee Involvement

2020-2022 Committee of the Washington State Academy of Sciences (WSAS) on the Skagit Water Supply

- Scope a larger study that prioritizes and address knowledge gaps that were identified by the Skagit Water Supply and Demand Synthesis and the Duke Study peer review.
- Independent peer review of the Duke Study that is the estuary study portion of a technical report that informed the Skagit Instream Flow Rule.
- Independent peer review of the Skagit Water Supply and Demand Synthesis.
- Propose scope for a comprehensive hydrologic study of the Skagit estuary.

Selected Workshops and Symposia Organized

2017 Special Session: *Stormwater and Flooding in King County: Co-Producing Research to Support Adaptation*, Tacoma, WA. Organizing Committee and Speaker.
 2017 Workshop: *Water Temperature Handbook*, University of Washington, Seattle, WA. Organizing Committee and Speaker.
 2017 Workshop: *Impacts of Climate Change on Flooding in King County*, Impact HUB, Seattle, WA. Organizing Committee and Speaker.

- 2017 Workshop: *Can We Conserve Wetlands Under a Changing Climate? Scientist-Practitioner Workshop 2: Identifying Climate Change Adaptation Strategies*, Ellensburg, WA. Organizing Committee and Speaker.
- 2016 Workshop: *Can We Conserve Wetlands Under a Changing Climate? Scientist-Practitioner Workshop 1: Defining Information Needs for Climate Adaptation*, Ellensburg, WA. Organizing Committee and Speaker.
- 2014 Special Session: *Climate Adaptation and Pacific Northwest Freshwater Wetlands: Strengthening Links between Science and Management*, University of Washington, Seattle, WA. Organizing Committee and Speaker.
- 2012 Symposium: *Pacific Northwest Wetlands Symposium*, Woodland Park Zoo, Seattle, WA. Organizing Committee and Speaker.

Outreach

- 2023 Speech titled "Take It at Face Value" at the Women in Leadership Symposium, 10-year Anniversary event held at Campion Hall Ballroom, Seattle University, WA
- 2019 Oral Presentation for 3rd graders at Decatur Elementary School, Seattle, WA
- 2012 Oral Presentation for 5th graders at View Ridge Elementary School, Seattle, WA
- 2013 Oral Presentation for 7th to 9th graders at Dong-San Middle School, Kunsan, South Korea

Selected Professional Training

- 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 *Strategic Planning Retreat 2018* hosted by Climate Impacts Group, University of Washington, Mar 22nd -23rd, 2018, Ocean Science Building, University of Washington, Seattle, WA.
- 2018 *EarthLab Facilitation Training* hosted by College of the Environment, University of Washington, Feb 27th-28th, 2018, Husky Union Building, University of Washington, 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.
- 2017 *Science Communication Training* 2017 hosted by College of the Environment, University of Washington, May 5th, 2017, Waterfront Activities Center, University of Washington, Seattle, WA.

- 2014 *Professional Development Workshop 2014* hosted by Korean-American Scientist and Engineers Association, March 15th-16th, 2014, Hilton Rosemont Hotel, Chicago, IL.
- 2013 *Writing Retreat* hosted by Landscape Ecology and Conservation, February 20th-22nd, 2013, Waterfront Activities Center, University of Washington, Seattle, WA.
- 2011 *University of Washington Future Faculty Fellow Program: Annual Postdoctoral Workshop and Teaching Apprenticeship Program*, August 25th-26th, 2011, Hitchcock Hall, University of Washington, Seattle, WA.

GRANTS/FUNDS

- 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.

ADVISING

- 2024 Samhita Tovinkere, Summer Research funded by Seattle City Light. "Effects of Vegetation Change on Streamflow"

- 2022 Joseph Pacini, Sarah Creighton, and Ryan McGeary, 2022 Summer Undergraduate Research Program funded by Seattle University. *“Using Environmental Sensors to Evaluate Salmonid Passage Through Beaver Dams”*
- 2021 Ruby Ranoa, Summer Research funded by Seattle City Light. *“Future Peak Steamflow Analytics for the Skagit River”*
- 2019 - Present Undergraduate Capstone Projects.
- 2019 - Present Undergraduate Students in Environmental Science Program at Seattle University.
- 2015 Graduate student committees: Begum Rabeya Rushi, MS (Washington State University Civil and Environmental Engineering), 2015. *“Application of Reservoir Modeling to Quantify Impacts of the Columbia River Treaty after 2024”*

COMMUNITY ACTIVITIES

- 2020-2022 Committee of Washington State Academy of Sciences
- 2013-Present Sunday School Teacher/Team Facilitator at University Presbyterian Church, Seattle, WA. Teach 3-5 years old kids, organize team activities and schedules, and manage teacher’s roles based on their ability.
- 2018-2019 Teacher at Korean School at St. Andrew Kim, Seattle, WA. Teach Korean culture and language to 2nd generation of Korean.
- 2005-2009 Manager and teacher at Bethany Korean School, Lynnwood, WA. Organized school events and led group discussions with teachers and/or parents.
- 2005 Teacher at Morning Star Korean Culture Center, Lynnwood, WA. Taught Korean culture and language to adoptive families.
- 2004-2009 Manager at Morning Star Korean Culture Center Asian Library, Lynnwood, WA. Organized volunteers and held event for local community.

MANUSCRIPT REVIEWS

Journal of Water Resources Planning and Management, Journal of Hydrology, Journal of Climatology, Journal of Hydro-environment Research, Journal of Hydroinformatics, Climatic Services, Water, Climate, Hydrology, Journal of Marine Science and Engineering, Journal of Environmental Research and Public Health, Sensors, Geosciences, Land, Sustainability

AWARDS AND SCHOLARSHIPS

- 2008 Luther E. Gregory Scholarship
- 2004 Washington Section AWRP 2004-2005 Fellowship Award
- 1990-1994 Scholarships, Chonbuk National University, South Korea

SKILLS

Programming: UNIX/Linux shell scripting (bash,csh), Arc GIS, ArcGIS Pro, R, C, C++, R, Fortran, Matlab, Microsoft office products (excel, words, power points), Python, GitHub.

Computer Models: Distributed Hydrology Soil Vegetation Model (DHSVM)
 Macro-scale hydrologic Variable Infiltration Capacity (VIC) model
 Hydrologic Engineering Centers Prescriptive Reservoir Model (HEC-PRM)
 Hydrologic Engineering Centers River Analysis System (HEC-RAS)
 Hydrologic Engineering Centers Hydrologic Modeling System (HEC-HMS)

Stella Modeling & Simulation software (ColSim and SkagitSim), RiverWare,
GoldSim