

# Anzy Lee

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## EDUCATION

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### Purdue University

Aug 2016 - May 2020

Ph.D in Civil Engineering

Dissertation: Riverbed Morphology, Hydrodynamics and Hyporheic Exchange Processes

Advisor: Prof. Antoine Aubeneau

### Seoul National University, Republic of Korea

Mar 2014 - Feb 2016

MS in Civil and Environmental Engineering

Thesis: Determination of Near-global Optimal Initial Weights of Artificial Neural Network Using Harmony Search Algorithm: Application to Breakwater Armor Stones

Advisor: Prof. Kyung-Duck Suh

### Handong Global University, Republic of Korea

Mar 2010 - Feb 2014

BS in Spatial Environment System Engineering

## EMPLOYMENT

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### Postdoctoral Research Scientist

Apr 2023 - Current

Prof. Belize Lane

Utah State University

- Development of an extensible geospatial data model for representing river channel and floodplain morphological attributes

### Postdoctoral Scholar

Aug 2020 - Mar 2023

Prof. Belize Lane

Utah State University

- Quantified the effects of geomorphological parameters on ecohydraulics and ecosystem functions

### Visiting Scholar

Aug 2020 - Current

Prof. Greg Pasternack

Land, Air, and Water Resources, University of California, Davis

- Synthesized a river archetype model representing various geomorphological features observed in natural riverine systems

### Research Assistant

Aug 2016 - Jul 2020

Prof. Antoine Aubeneau

Lyles School of Civil Engineering, Purdue University

- Numerical modeling of hyporheic exchange processes in fractal riverbed

## SPONSORED RESEARCH

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### Postdoc Researcher

Aug 2020 - Current

- Application of methods and models to support the development and implementation of policies for water quality control for cannabis cultivation, **California State Water Resources Board, Division of Water Rights [\$3,000,000]**
- Novel Geospatial Architecture of Channel and Floodplain Morphological Attributes within the OWP Hydrofabrics, **National Oceanic and Atmospheric Association [\$1,500,000]**

## PEER REVIEWED PUBLICATIONS

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- A. Lee**, B. A. Lane, G. B. Pasternack. (2023) Identifying key channel variability functions controlling ecohydraulic conditions using synthetic channel archetypes. *Ecohydrology*, e2533. [doi:10.1002/eco.2533](https://doi.org/10.1002/eco.2533)
- A. Lee**, A. Aubeneau, M. B. Cardenas, X. Liu. (2022) Hyporheic exchange due to cobbles on sandy beds. *Water Resour. Res.* 58, e2021WR030164. [doi:10.1029/2021WR030164](https://doi.org/10.1029/2021WR030164)
- A. Lee**, A. Aubeneau, M. B. Cardenas, X. Liu (2021) Hyporheic Exchange in Sand Dunes Under a Freely Deforming River Water Surface. *Water Resour. Res.* 57, e2020WR028817. [doi:10.1029/2020WR028817](https://doi.org/10.1029/2020WR028817)
- A. Lee**, A. Aubeneau, M. B. Cardenas (2020) The Sensitivity of Hyporheic Exchange to Fractal Properties of Riverbeds. *Water Resour. Res.* 56, e2019WR026560. [doi:10.1029/2019WR026560](https://doi.org/10.1029/2019WR026560)
- S. W. Kim, **A. Lee**, J. Mun (2018) A Surrogate Modeling for Storm Surge Prediction Using an Artificial Neural Network. *J. of Coastal Res.* 84, 866-870. [doi:10.2112/S185-174.1](https://doi.org/10.2112/S185-174.1)
- A. Lee**, J. W. Geem, K. D. Suh (2016) Determination of near-global optimal initial weights of artificial neural network using harmony search algorithm: Application to breakwater armor stones. *Appl. Sci.* 6(6), 164. [doi:10.3390/app6060164](https://doi.org/10.3390/app6060164)
- A. Lee**, S. E. Kim, K. D. Suh (2016) An easy way to use artificial neural network model for calculating stability number of rock armor. *Ocean Eng.* 127, 349-356. [doi:10.1016/j.oceaneng.2016.10.013](https://doi.org/10.1016/j.oceaneng.2016.10.013)

## SERVICE

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<b>Peer Reviewer</b> , <i>Water Resources Research</i>	2020 - 2022
<b>Peer Reviewer</b> , <i>Journal of Hydrology</i>	2022
<b>Peer Reviewer</b> , <i>Journal of Hydraulic Engineering</i>	2022

## CONFERENCE PROCEEDINGS

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- A. Lee**, B. Lane and G. B. Pasternack (2022) Developing Archetypal River Corridor Terrain Models for Various Channel Types. AGU 2022 Fall Meeting, Dec 2022, Chicago, United States
- A. Lee**, B. Lane, G. B. Pasternack and S. Sandoval-Solis (2021) Identifying key geomorphic parameters characterizing eco-hydraulic responses of river channels using RiverBuilder, AGU 2021 Fall Meeting, Dec 2021, New Orleans, United States
- A. Lee**, M. B. Cardenas, A. Aubeneau (2018) Investigation of hyporheic exchange in channels with high Froude Number flows: the importance of free surface water elevation changes, AGU 2018 Fall Meeting, Dec 2018, Washington, D.C., United States
- A. Aubeneau, **A. Lee** (2018) Aris method for (reactive) transient storage models, AGU 2018 Fall Meeting, Dec 2018, Washington, D.C., United States
- A. Lee**, A. Aubeneau (2017) 3D Numerical Modeling of Hyporheic Exchange Processes in Fractal Riverbed, AGU 2017 Fall Meeting, Dec 2017, New Orleans, United States

## TEACHING AND MENTORING

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<b>Lab Instructor and Grader</b> Elementary Hydraulics Laboratory	Fall 2019 <i>Instructor: Prof. D. A. Lyn, Purdue University</i>
· Prepared the experimental procedures, set up the experimental apparatus, introduced the experiment, responded to student questions during the experiment, and graded student reports	