

# 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 Scholar**

Aug 2020 - Current

Prof. Belize Lane

*Utah State University*

- Quantify 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*

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

### **Research Assistant**

Aug 2016 - Jul 2019

Prof. Antoine Aubeneau

*Lyles School of Civil Engineering, Purdue University*

- Conducted numerical modeling of hyporheic exchange processes in fractal riverbed

### **Visiting Scholar**

Feb 2019 - Apr 2019

Prof. Xiaofeng Liu

*Civil and Environmental Engineering, Penn State University*

- Developed boulder-driven hyporheic exchange model

### **Visiting Scholar**

Jan 2018 - Jan 2019

Prof. M. Bayani Cardenas

*Jackson School of Geosciences, The University of Texas at Austin*

- Investigated hyporheic exchange in channels with high Froude Number flows: the importance of free surface water elevation changes

## AWARDS AND EXTRACURRICULAR EXPERIENCE

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**Dorothy Faye Dunn Fellowship**, *Purdue University*

2019

**Climate Science Summer School**, *NASA JPL Center for Climate Sciences*

2018

**Delleur Award**, *Purdue University*

2017, 2018

**Summer Institute on Earth-Surface Dynamics**, *National Center for Earth-surface Dynamics*

2017

**Peer Reviewer**, *The Journal Engineering Optimization*

2015

## SPONSORED RESEARCH

### Postdoctoral 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]**

### Research Assistant

2016 - 2019

Purdue Research Foundation

## PEER REVIEWED PUBLICATIONS

- A. Lee**, B. A. Lane, G. B. Pasternack. Identifying key channel variability functions controlling ecohydraulic conditions using synthetic channel archetypes (Submitted)
- 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/SI85-174.1](https://doi.org/10.2112/SI85-174.1)
- 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

- Peer Reviewer**, *Water Resources Research* 2020 - 2022
- Peer Reviewer**, *Journal of Hydrology* 2022
- Peer Reviewer**, *Journal of Hydraulic Engineering* 2022

## CONFERENCE PROCEEDINGS

- 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

### Lab Instructor and Grader

Fall 2019

Elementary Hydraulics Laboratory

*Instructor: Prof. D. A. Lyn, Purdue University*

- Prepared the experimental procedures, set up the experimental apparatus, introduced the experiment, responded to student questions during the experiment, and graded student reports