MARIE-PIERRE (MP) C. DELISLE (she/her)

United States Naval Academy
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EDUCATION

Ph.D., University of California, Los Angeles – Civil & Environmental Engineering, June 2023
Research interests: Computational fluid dynamics, beach groundwater, wave runup and overtopping, sediment transport, coastal flooding, coastal hazards
Advisor: Timu W. Gallien

M.S., University of California, Los Angeles – Civil & Environmental Engineering, June 2020
Emphasis: Hydrology & Water Resources

B.S., University of California, Los Angeles – Civil & Environmental Engineering, June 2018
Cum Laude

AWARDS, HONORS, AND SCHOLARSHIPS

2023 Society of Women Engineers Outstanding Collegiate Member
UCLA Center for the Study of Women Streisand Scholar
2022 WE22 Collegiate Competition, 1st Place
UCLA Society of Women Engineers Chevron Scholarship
WE Local Albuquerque Collegiate Competition, 1st Place
ASCE Los Angeles Youth Member Forum, Outstanding Graduate Student
2021 ASCE Los Angeles, Women in Engineering Day Scholarship
YCSECA 2021, Outstanding Oral Presentation
Nominee for UCLA ASCE Best Teaching Assistant
2020 Anchor QEA Scholarship
NSF GRFP Honorable Mention
UCLA Women in Engineering Leadership Scholarship
2019 UCLA Society of Women Engineers Boeing Scholarship
2018 Robert L. Wiegel Scholarship for Coastal Studies, 1st Place
2017 UCLA AV Balakrishnan Scholarship for Engineering

PROFESSIONAL EXPERIENCE

United States Naval Academy, Annapolis, MD – Ocean Engineering, starting July 2024
Assistant Professor

Woods Hole Oceanographic Institution, Falmouth, MA – PVLAB, 2023-Present
Postdoctoral Investigator

- Investigate swash-beach groundwater dynamics and impacts on coastal vulnerability through high-resolution numerical modeling and field observations

University of California, Los Angeles, CA – Coastal Flood Lab, 2016-2023
Graduate Student Researcher (2018-2023)

- Develop two-phase computational fluid dynamics modeling methodology to investigate fundamental dynamics of beach groundwater, wave runup, and overtopping.
- Model and evaluate near-shore sediment transport using the OpenFOAM framework.
- Design, develop, and lead high-resolution field campaigns for observations of topography, bathymetry, and nearshore hydrodynamic data.

Research Assistant (2016-2018)

- Processed, analyzed, and developed algorithms for analysis and visualization of nearshore hydrodynamic field observations to investigate interactions between tidal, wave, beach groundwater and flooding dynamics.

Moffat & Nichol

Coastal Engineering Intern (Long Beach, CA), Summer 2018

- Contributed to project research, design, data compilation, data analysis, and risk analysis on multiple projects. Communicated with clients through presentations and technical writing.
- Earned full responsibility for coastal impact project within first month of employment.
- Updated and led field data program, including field instrumentation, inspection, and monitoring.

PUBLICATIONS

Delisle, M.P.C., Gallien, T. W., & Kim, Y. (2024). Modeling beach groundwater impacts on wave runup: mechanisms and implications. *Journal of Geophysical Research: Oceans*, *sub judice*.

Delisle, M.P.C., Kim, Y., & Gallien, T. W. (2023). A numerical study of dam-break driven swash and beach groundwater interactions. *Journal of Geophysical Research: Oceans*, 128, e2022JC019615.

Delisle, M.P.C., Kim, Y., Mieras, R.S., & Gallien, T.W. (2022). Numerical investigation of sheet flow driven by a near-breaking transient wave using SedFoam. *European Journal of Mechanics – B/Fluids*, *96*, 51-64.

Brandenberg, S.J., Stewart, J.P., Wang, P., Nweke, C.C., Hudson, K., Goulet, C.A., Meng, X., Davis, C.A., Ahdi, S.K., Hudson, M.B., Donnellan, A., Lyzenga, G., Pierce, M., Wang, J., Winters, M.A., **Delisle, M.P.C.**, Lucey, J., Kim, Y., Gallien, T.W., Lyda, A., Yeung, J.S., Issa, O., Buckreis, T., & Yi, Z. (2020). Ground Deformation Data from GEER Investigations of Ridgecrest Earthquake Sequence. *Seismological Research Letters*, *91*(4), 2024-2034.

Winters, M.A., **Delisle, M.P.C.**, Lucey, J.T., Kim, Y., Hudson, K., Liu, Z., Brandenberg, S., & Gallien, T.W. (2019). "UCLA UAV Imaging", in *Ridgecrest, CA earthquake sequence, July 4 and 5, 2019*. DesignSafe-CI.

Gallien, T.W., Kalligeris, N., **Delisle, M.P.C.**, Tang, B.X., Lucey, J.T., & Winters, M.A. (2018). Coastal flood modeling challenges in defended urban backshores. *Geosciences*, *8*(12), 450.

CONFERENCE PROCEEDINGS

Delisle, M.P.C., Kim, Y., & Gallien, T.W. (2023). A numerical study of swash-groundwater interactions using OpenFOAM. Coastal Sediments 2023: The Proceedings of the Coastal Sediments 2023. 305-313.

INVITED TALKS

Are beach surface and subsurface flow interactions the missing puzzle piece to understanding coastal flooding?

UCONN Marine Sciences Seminar, October 13, 2023.

Numerical modeling of swash and beach groundwater dynamics

National Oceanic and Atmospheric Administration (NOAA) Coastal Ocean Modeling Science Seminar, virtual, August 22, 2023.

Swash-groundwater flow interactions and impacts on wave runup
COFDL Seminar, Woods Hole Oceanographic Institution, October 28, 2022.
United States Naval Academy, Naval Architecture and Ocean Engineering Department, February 22, 2023.

ORAL PRESENTATIONS

Delisle, M.P.C., Raubenheimer, Britt, Elgar, Steve, Observations of Swash, Beach Groundwater, Moisture Levels, and Topographic Change During DUNEX. Oceans Sciences Meeting, New Orleans, Louisiana, February 19, 2024.

Delisle, M.P.C., Kim, Y., Gallien, T.W., A numerical study of swash-groundwater interactions using OpenFOAM. Coastal Sediments, New Orleans, Louisiana, April 12, 2023.

Delisle, M.P.C., Kim, Y., Gallien, T.W., Beach groundwater impacts on wave overtopping flooding. 37th International Conference on Coastal Engineering, Sydney, Australia, December 9, 2022.

Delisle, M.P.C, Kim, Y., Gallien, T.W., Beach surface-subsurface flow interactions and impacts on coastal flooding. Society of Women Engineers WE22 Conference, Houston, Texas, USA, October 21, 2022.

Delisle, M.P.C, Kim, Y., Gallien, T.W., A numerical study of beach surface-subsurface flow interactions and impacts on coastal flooding. American Shore and Beach Preservation Association (ASBPA) National Conference, Long Beach, California, USA, September 15, 2022.

Delisle, M.P.C, Kim, Y., Gallien, T.W., A numerical study of swash and beach groundwater interactions. 5th Symposium on two-phase modeling for sediment dynamics in geophysical flows (THESIS), Les Houches, France, June 9, 2022.

Delisle, M.P.C, Kim, Y., Gallien, T.W., A numerical study of beach groundwater and swash interactions. Korean Water Resources Association Conference, virtual, May 18, 2022.

Delisle, M.P.C, Kim, Y., Gallien, T.W., A numerical study of swash and beach groundwater interactions. American Geophysical Union Ocean Sciences Meeting, virtual, March 1, 2022.

Delisle, M.P.C, Kim, Y., Gallien, T.W., A numerical study of beach surface-subsurface flow interactions and impacts on coastal flooding. Society of Women Engineers WE Local Conference, Albuquerque, New Mexico, USA, February 25, 2022.

Delisle, M.P.C, Kim, Y., Mieras, R.S., Gallien, T.W., Investigating Sheet Flow under a Near-Breaking Transient Wave. Young Coastal Scientists and Engineers Conference – Americas (YCSECA), Myrtle Beach, South Carolina, USA, October 31, 2021.

Delisle, M.P.C, Kim, Y., Mieras, R.S., Gallien, T.W., Investigating sheet flow under a near-breaking transient wave using a two-phase eulerian sediment transport model. Coastal Dynamics 2021 Congress, virtual, June 30, 2021.

POSTER PRESENTATIONS

Delisle, M.P.C, Kim, Y., Gallien, T.W., A numerical study of beach surface-subsurface flow interactions and impacts on coastal flooding. Society of Women Engineers WE Local Conference, Albuquerque, New Mexico, USA, February 25, 2022.

TECHNICAL AND SPECIALIZED SKILLS

Softwares: MATLAB, ArcGIS, XBeach, OpenFOAM, SWASH, MODFLOW, MOD-WET, EdGCM, ContextCapture, Pix4D, LaTex, SonTek
Surveying: Total station, GPS, UAV, hydrodynamic surveyor

LABORATORY AND FIELD EXPERIENCE

2023 Groundwater Hydrodynamic Oscillations from Swash with Transparent Sand (GHOSTS) Experiment at Royal Military College (RMC), lead
SINKEX Experiment at the U.S. Army Corps of Engineers Coastal Hydraulics Laboratory Field Research Facility, swash zone lead & scientific diver
2022 Strategic Environmental Research and Development Program (SERDP) Munitions Experiment at Institut national de la recherche scientifique (INRS), participant
Naval Weapons Station Seal Beach Data Collection, participant
Cardiff Living Shoreline Monitoring, UAV pilot & participant
2021 Strategic Environmental Research and Development Program (SERDP) Munitions Experiment at the University of Delaware, participant
Long Beach Wave Study, scientific diver
Naval Weapons Station Seal Beach Data Collection, participant
Cardiff Living Shoreline Monitoring, UAV pilot & participant
2020 Naval Weapons Station Seal Beach Data Collection, UAV survey lead
Cardiff Living Shoreline Monitoring, UAV pilot & participant
2019 Ridgecrest Fault Displacement Survey, UAV survey lead
Cardiff Living Shoreline Monitoring, UAV pilot & participant
2018 Cardiff Living Shoreline Monitoring, UAV pilot & participant

MENTORSHIP

Michael Angelis, PhD, Fall 2021 – present; NSF GRFP
Juhee Ok, MS, Fall 2021 – Fall 2023

CERTIFICATIONS

CyberAmbassador (NSF Award #1730137)
American Academy of Underwater Sciences Certified Scientific Diver
Federal Aviation Administration Part 107 Remote Pilot, Certification #4220712
Engineer in Training, Certification #164505

TEACHING EXPERIENCE

University of California, Los Angeles – Samueli School of Engineering
Coastal Engineering, Teaching Assistant, Spring 2021 & 2022

- Prepared and delivered conceptual and practical lectures for undergraduate and graduate students in weekly discussion sessions.
- Assisted instructor in designing homework assignments and project guidelines.
- Graded weekly homework assignments and quizzes/exams.
- Aided students in numerical modeling and scientific writing.

- Awarded teaching grant by the UCLA Center for the Advancement of Teaching in 2022 based on a written proposal to enhance and enrich student learning through a field trip on a UCLA marine research vessel
- Implemented Teaching-as-Research project titled "Peer-to-Peer Teaching for Engineers" to improve students' abilities to understand course material and effectively communicate problem-solving strategies in 2021.

Engineering Geomatics, Teaching Assistant, Spring 2020
- Prepared and delivered conceptual and practical lectures for undergraduate students in weekly laboratory sections.
- Assisted instructor in designing lectures and homework assignments. Transformed physical laboratory assignments into an online format during the COVID-19 pandemic.
- Graded weekly homework and laboratory assignments.
- Aided students in data analysis and scientific writing.

Teaching Assistant Conference, Workshop Lead, Fall 2020 & 2021
- Revised and transitioned workshop material to an online format for workshops titled "Cheating, Grade Complaints, and Disruptive Behavior" and "Active Learning Strategies for Lab Sections".
- Lead multiple sessions of several workshops titled "Cheating, Grade Complaints, and Disruptive Behavior", "Active Learning Strategies for Lab Sections", and "Creating Community Remotely".

LEADERSHIP

Society of Women Engineers (SWE)

Senator, starting July 2024

Early Career Professionals Affinity Group (ECP AG), 2021-Present

Lead, 2022-Present
- Manage leadership team in executing networking, professional development, and community building events to address the gap from collegiate to professional SWE and equip individuals with the support, resources, and inclusive community to excel in the first ten years of their career
- Established three new committees within leadership team (Conferences & Awards, Communications, and Internal Affairs) and led initiative to expand leadership team from 12 members in FY23 to 20 members in FY24
- Awarded global FY23 Silver Mission Award, Best Practice – Leadership Development, Best Practice – SWE Resource Promotion, and WE Local Outstanding Professional Development Award

Membership Coordinator, 2021-Present
- Developed and implemented strategies to recruit SWE ECP AG members and retain collegiate students within the SWE community post-graduation
- Planned, organized, and executed events to engage college students and early career professionals with the ECP AG and larger SWE community
- Flagship event "It's OK to Fail" contributed to global FY22 Silver Mission Award in ECP AG's founding year for commitment to professional excellence, advocacy, and DE&I

Graduate Student Affinity Group, 2022-2023

Programming Coordinator, 2022-2023
- Develop content and plan events to support the professional development of the leadership team

UCLA Collegiate Section, 2014-2023

Graduate Leadership Team Member, 2021-2023
- Serve in an advising role to the Graduate Director as an active leadership team member

Graduate Director, 2019-2021
- Led 12-person leadership team in executing professional, social, and outreach events to support, inspire, and empower the current and future female engineering community.
- Initiated collaborations with other organizations and student groups to increase the visibility and retainment of underrepresented students in engineering.
- Responsible for all budgeting and financial decisions.
- Established scholarship for underrepresented graduate students in engineering.

Graduate Mentorship Director, 2018-2019
- Designed and developed research mentorship program matching female undergraduate engineers with graduate students and professors. Mentored 2 students as part of the program.
- Organized monthly events addressing female-specific issues in STEM fields with a variety of knowledgeable guest speakers.

Member, 2014-2018
- Attended general meetings and events

Scholars of Teaching as Research Program (CIRTL@UCLA), 2020-2021

CIRTL Practitioner, Spring 2021
- Completed final two pedagogical training courses aligned with the Center for the Integration of Research, Teaching and Learning (CIRTL) network core ideas and learning outcomes.
- Developed and executed a Teaching-as-Research project titled "Peer-to-Peer Teaching for Engineers" in a Coastal Engineering course with a primary focus of engaging students at a higher cognitive level.
- Continued growth and engagement with best-practices in evidence-based teaching.

CIRTL Associate, Fall 2020
- Completed the first of three pedagogical training courses in the CIRTL network.
- Studied the role and value of Teaching-as-Research, evidence-based teaching, learning communities, and learning through diversity for effective teaching and learning.

Entering Mentoring Research Training (UCLA), Spring 2021
- Developed and refined mentorship skills through the 10-week (15 hour) program based on the Center for the Improvement of Mentored Experiences in Research (CIMER) Entering Mentoring Training Program.
- Completed modules addressing topics such as communication, inclusion/diversity/equity, professional development, ethical behavior, and self-efficacy within the context of a mentor-mentee relationships.

Equity in STEM for All Genders (CIRTL), Fall 2020

- Actively participated in the Center for the Integration of Research, Teaching and Learning (CIRTL) course that addressed and discussed ways that gender bias impacts STEM training and careers.
- Increased awareness and knowledge of gender bias in STEM and gained strategies and skills to recognize bias, intervene, and advocate for equity through the analysis of identity, roles, and contexts where gender bias manifests in STEM situations.

PROFESSIONAL SOCIETIES

Society of Women Engineers, Early Career Professionals Affinity Group Lead
American Society of Civil Engineers, General Member
American Geophysical Union, General Member

SERVICE

Chair, AGU Ocean Science Meeting 2024, Nearshore Processes
Co-chair, AGU Ocean Science Meeting 2022, Nearshore Processes

Center for Excellence in Engineering and Diversity, Graduate Student Mentor, Fall 2019

- Designed a collaborative research project for four high-risk undergraduate engineering freshmen.
- Prepared and delivered weekly presentations on coastal engineering fundamentals.
- Aided students in data analysis.
- Mentored students in developing academic and career plans.