Amina Meselhe

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Education:

Oregon State University (OSU), Corvallis, OR
Doctor of Philosophy, Coastal & Ocean Engineering – *current*
Geographic Information Science Certificate – *current*
Masters of Science, Coastal & Ocean Engineering – *Graduated Spring 2024*

Louisiana State University (LSU), Baton Rouge, Louisiana
Roger Hadfield Ogden Honors College (OHC)
Bachelor of Science, Civil Engineering – *Graduated Spring 2022*

Work and Research Experience:

Graduate Research Assistant, Dr. Daniel Cox: September 2022 - current

- Model regional-scale coastal hazard events such as hurricanes and tsunamis and their impacts on coastal communities
- Integrate interdisciplinary and co-production principles to develop research questions and communicate findings with stakeholders (e.g. state agencies and local emergency management)

President's Future Leaders in Research Program, Dr. Navid Jafari: July 2019- May 2022

- Measure and prepare below and above ground biomass samples and marsh grass samples for their wave attenuation capacity
- Compute and compile field and virtually attained datasets for representation and dissemination

National Science Foundation (NSF) Research Experience for Undergraduates, NHERI: Natural Hazards Center: June 2021 – August 2021

- Collaborated with the Natural Hazards Center and CONVERGE at University of Colorado Boulder and the NSF funded Structural Engineering Extreme Events Reconnaissance network
- Researched history of Louisiana Construction Codes to develop evidence-based analysis and recommendations regarding hurricane-resistant residential buildings

Fenstermaker Engineering Summer Intern Program: July 2019- Aug 2019

- Participated in the development of a Stormwater Management Master Plan for a Calcasieu Parish by supporting the development and setup of the HEC-RAS models; prepared channel cross sections through merging of bathymetric surveys and LiDAR topographic datasets
- Created interactive and informative presentations and graphics for a drainage plan for the City of Scott (Lafayette Parish, Louisiana) and contributed to new business development ideas with specialized professionals and technical experts

Internship and Study Abroad, LSU in the French Alps: May 2019- June 2019

- Coordinated and volunteered with local artisans and shop owners to improve technical skills and application of the French language
- Researched and presented findings during presentations and daily vlogs that reflected a progression of the language and a deepened understanding of vernacular

President's Future Leaders in Research Program, Dr. Suniti Karunatillake: Jan 2019- June 2019

- Analyzed data from the Mars Curiosity Rover through database analytics and paper revisions

and compiled information regarding soil samples (chemistry, mineralogy, granulometry)
- Facilitated communication between Department of Geology and Geophysics faculty and fellow students, including in person communication and interaction with a research partner in Toulouse, France

President's Future Leaders in Research Program, Dr. Michael Polito: Aug 2018- Dec 2018

- Prepared water quality samples and United States Geological Survey (USGS) standards to be tested
- Assisted Department of Oceanography and Coastal Sciences graduate students run experiments regarding stable isotope and marsh ecology

Extra-Curricular Experiences:

Civil and Construction Engineering Graduate Students - Co-Founder/Committee Chair: April 2024 - current
Coasts, Oceans, Ports & Rivers Institute (COPRI) Graduate Chapter at Oregon State - President: September 2024 - August 2025; Communications Chair: September 2023 - August 2024
Water JEDIs at Oregon State University - Communication Officer: June 2023 - June 2024
Louisiana Service and Leadership (LASAL) Program: Oct 2018 - May 2022
LSU Student Government, Executive Senior Staff - Chief Marketing Officer: May 2021 – May 2022
LSU Ambassadors: Oct 2018-Present; Communications Chair: May 2020 - May 2021
Geaux Green LSU, Communications Chair: Oct 2019 – May 2021
Freshman Leadership Council, Small Group Leader: Oct 2019 - May 2020

Honors/Awards:

William Averette Anderson Fund Fellow
Graduate Assistance in Areas of National Need Fellow
Achievement Rewards for College Scientists (ARCS) Recipient
National Science Foundation Research Experience for Undergraduates
LSU President's Student Aid Job
Taylor Opportunity Program for Students (TOPS) Recipient
LSU President's Alumni Award
LSU President's Alumni Scholarship
2019 LA Sea Grant UROP Recipient: Biomechanical Properties of Wetland Vegetation for Quantifying Wave Attenuation
Friends of French & Hoguet Alexandre Major Scholarships for Ubaye Valley Recipient
Dean's List (Fall 2018, Spring 2019, Fall 2019, Spring 2020)
President's Honor Roll (Fall 2020)

Skills/Software:

Languages: French [fluent], Mandarin [Conversational], Arabic [Beginner]
Geographic Information System (ArcGIS); Art and Graphics (Canva, Procreate); Python; Matlab; Julia; Microsoft Applications (Word, Excel, PowerPoint)

Publications:

Mah, Andrea Y.J., Jenna Tilt, Joshua Blockstein, Natasha Fox, Najiba Rashid, **Amina Meselhe**, Felicia N. S. Olmeta Schult (2025). "Identification of community assets: a survey of coastal Oregonians' priorities for natural hazard preparedness". Natural Hazards 121, 21385–21403. DOI: 10.1007/s11069-025-07626-0

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt (2025). "Human-centered transportation connectivity and network recovery following a Cascadia Subduction Zone earthquake and tsunami". Sustainable and Resilient Infrastructure. DOI: 10.1080/23789689.2025.2525697

Meselhe, Amina, Karina I Vielma, Daleen Torres Burgos, Tyler Rodrigues (2025). "An ethnographic case study of undergraduate researchers in natural hazards engineering." Frontiers in Built Environment. 11:1535761. DOI: 10.3389/fbuil.2025.1535761

Meselhe, Amina, Tracy Kijewski-Correa, Lori Peek, Heather Champeau, Jessica Austin. "Design-Level Events and Residential Construction Performance: Hurricane Laura Case Study". Natural Hazards Engineering Research Infrastructure (NHERI) NSF-REU. DOI: **10.17603/ds2-g2aj-9r47**

Cadigan, Jack, Navid Jafari, Camille Stagg, Claudia Laurenzano, Brian Harris, **Amina Meselhe**, Jason Dugas, Brady Couvillion. "Characterization of vegetated and ponded wetlands with implications towards coastal wetland marsh collapse". CATENA, Volume 218, 2022, 106547, ISSN 0341-8162. DOI: **10.1016/j.catena.2022.106547**

Conference Presentations and Posters:

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Community Resilience Evaluation of Seismic and Tsunami Impacts on Coastal Infrastructure Performance". Natural Hazards Workshop 2025 Researchers Meeting (July 2025). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Coupled Coastal Infrastructure Performance after Cascadia". Cascadia CoPes Hub Annual Gathering (April 2025). Poster.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Connectivity and Coastal Infrastructure Performance Following a Cascadia Subduction Zone Multi-Hazard Event". Navigating Coastal Hazards Workshop (February 2025). Poster and Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Connectivity and Coastal Infrastructure Performance Following a Cascadia Subduction Zone Multi-Hazard Event". NHERI Computational Symposium (February 2025). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Connectivity and Coastal Infrastructure Performance Following a Cascadia Subduction Zone Multi-Hazard Event". 2025 USGS Subduction Zone Science Meeting (January 2025). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Human-Centered Connectivity and Transportation Network Recovery Following a Cascadia Subduction Zone Earthquake and Tsunami". American Geophysical Union (December 2024). Poster.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Human-Centered Connectivity and Transportation Network Recovery Following a Cascadia Subduction Zone Earthquake and Tsunami". Cascadia Region Earthquake Science Center 2024 Partnerships & Applications Workshop (June 2024). Poster.

Omobolaji Lawal and **Amina Meselhe**. "Metrics That Matter: Using DesignSafe Metrics to Evaluate the Current State of Knowledge and Inform Future Hazards Research". NHERI Graduate Student Council Mini Conference (May 2024). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Connectivity After Cascadia: Modeling Transportation Network and Building Damage and Recovery Following a Cascadia Subduction Zone Event". Natural Hazards Research Summit (May 2024). Poster.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Quantifying Connectivity: Coupling Transportation Networks and Building Performance". Cascadia CoPes Hub Annual Gathering (May 2024). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Connectivity After Cascadia: Modeling Transportation Network and Building Damage and Recovery Following a Cascadia Subduction Zone Event". Cascadia CoPes Hub Annual Gathering (May 2024). Poster.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Human-Centered Connectivity and Transportation Network Recovery Following a Cascadia Subduction Zone Earthquake and Tsunami". Navigating Coastal Hazards Workshop (March 2024). Poster.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Human-Centered Connectivity and Transportation Network Recovery Following a Cascadia Subduction Zone Earthquake and Tsunami". NHERI Computational Symposium (February 2024). Poster.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Evaluating Accessibility After a Cascadia Subduction Zone Earthquake and Tsunami". Natural Hazards Workshop 2023 Researchers Meeting (July 2023). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Cascadia and Islanding: Modeling Accessibility to Community Assets After a CSZ Earthquake and Tsunami". NHERI Graduate Student Council Mini Conference

(May 2023). Virtual Poster.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Cascadia and Islanding: Modeling Accessibility to Community Assets After a CSZ Earthquake and Tsunami". Cascadia CoPes Hub Annual Gathering (April 2023). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "An Integrated Social-Science and Engineering Approach to Evaluating Community 'Islanding' Following Natural Hazards". State of the Coast Oregon (November 2022). Poster.

Meselhe, Amina, Tracy Kijewski-Correa, Lori Peek, Heather Champeau, Jessica Austin. "Design-Level Events and Residential Construction Performance: Hurricane Laura Case Study". 46th Annual Natural Hazards Research and Applications Workshop. Poster.

Meselhe, Amina, Navid Jafari, Q. Jim Chen, Ling Zhu, Jack Cadigan. "Salt Marsh as NNBFs: Quantifying the Role of Vegetation Biophysical Properties on Marsh Edge Erosion". Coastal and Estuarine Research Federation 2021 Conference. Presentation.

<u>Outreach:</u>

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Resilience in Applied Research: Connectivity Following a Cascadia Subduction Zone Earthquake and Tsunami". Engineering for Bouncing Back Better REU (July 2025). Presentation.

Meselhe, Amina, Joshua Blockstein. "StoryMapping: Communicating Data and Disseminating Science". Departmental Seminar Series (February 2025). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Connectivity and Coastal Infrastructure Performance Following a Cascadia Subduction Zone Multi-Hazard Event". Philanthropic Educational Organization: Corvallis (January 2025). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "Connectivity after Cascadia: Recovery Following the Big One". Achievement Rewards for College Scientists (ARCS) Impact, Ignite! (October 2024). Poster.

Campos, Richard, Jordan Nakayama, Najiba Rashid, **Amina Meselhe,** Natalie Coleman, Daniel Yahya. "Building Your Professional Brand: The Importance of Networking & Establishing a Research Story". Natural Hazards Research Summit (May 2024). Workshop Session.

Eberhard, Marc, Dan Cox, **Amina Meselhe**, Joe Louis. "Islanding – How coastal communities will be isolated after The Big One". Cascadia CoPes Hub Virtual Seminar Series (May 2024). Presentation.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "An Integrated Social-Science and Engineering Approach for Evaluating Community 'Islanding' Following Natural Hazards". Oregon Coastal Futures LEAF Grant Celebration (June 2023). Poster and Presentation.

Meselhe, Amina. "Community Resilience: Coastal Hazards, Engineering Reimagined, and The Big One". Ocean11 Marine Club (April 2023). Presentation.

Meselhe, Amina. Graduate Student Testimony to the Joint Ways and Means Education Subcommittee (May 2023). Testimony.

Meselhe, Amina, Dan Cox, Dylan Sanderson, Jenna Tilt. "How Can We Stay Connected? A Study of Regional and Local Connectivity Following a Cascadia Subduction Zone Event". O.H. Hinsdale Wave Research Laboratory Lab Tour and Research Presentation to President Murthy and Representative Val Hoyle (February 2023). Poster.