

MADELINE M. KELLEY

Curriculum Vitae

March 2023

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RESEARCH INTERESTS

I am a process geomorphologist interested in fluvial and aeolian sediment transport. My work focuses on landscape mechanisms and the quantitative relationships between physical processes. I have experience conducting lab experiments in wind tunnels and flumes, field experiments in coastal, riverine, and desert environments, as well as modeling work.

EDUCATION

Arizona State University

Tempe, AZ

2018 August – Expected Graduation May 2023

Ph.D. ABD - Geography

School of Geographical Sciences and Urban Planning

Advisor: Dr. Mark Schmeeckle

University of Denver

Denver, CO

2018 Graduated

Master of Science - Geographic Information Science

Department of Geography and the Environment

Advisor: Dr. Hillary Hamann

University of Denver

Denver, CO

2016 Graduated

Graduate Certificate - Geographic Information Systems

University College

University of Pittsburgh

Pittsburgh, PA

2014 Graduated

Bachelor of Arts - Environmental Studies

Geographic Information Systems Certificate

Capstone Project Advisor: Dr. Rick Relyea

Department of Geology and Environmental Sciences

PROFESSIONAL EXPERIENCE

Physical Science Aid (NP03)

Bay Saint Louis, Mississippi

2021 August - 2022 December [FTE 1.0]

U.S. Naval Research Laboratory

Project: Aeolian Transport and Turbulence Experiment (ATTEX)

Physical Science Aid (NP03)

Bay Saint Louis, Mississippi

2020 May - 2020 August [FTE 1.0]

U.S. Naval Research Laboratory

Project: Multiphase Transport Experiment (MPTEX)

Physical Science Aid (NP03)

Bay Saint Louis, Mississippi

2019 May - August 2019 [FTE 1.0]

U.S. Naval Research Laboratory

Project: Multiphase Transport Experiment (MPTEX)

Field Paleontologist and GIS Analyst

Denver, Colorado

2018 August - 2019 May [FTE 0.25]

Paleo Solutions

Floodplain Mapping Specialist

Denver, Colorado

2018 January - 2018 August [FTE 0.25]

Colorado Water Conversation Board

Information Services and Flood Warning Program Intern

Denver, Colorado

2017 March - 2018 January [FTE 0.25]

Urban Flood Control District

Student Contractor

Lakewood, Colorado

2016 October - 2017 March [FTE 0.25]

Transportation Department

U.S. Geological Survey

GIS Analyst

Denver, Colorado

2014 September - 2016 June [FTE 1.0]

Purple Land Management

ACADEMIC EXPERIENCE

Graduate Teaching Assistant

Tempe, Arizona

2023 January - 2023 May [FTE 0.75]

Arizona State University

Landform Processes; Introduction to Physical Geography Laboratory

Volunteer Researcher

Flagstaff, Arizona

2022 April (2-week fieldwork campaign)

Grand Canyon Monitoring and Research Center and U.S. Geological Survey

Graduate Teaching Assistant

Tempe, Arizona

2020 August - 2021 May [FTE 0.75]

Arizona State University

Introduction to Physical Geography Laboratory

Graduate Research Assistant

Tempe, Arizona

2019 August - 2020 May [FTE 0.75]

Arizona State University

Sediment Transport Lab under the direction of Dr. Mark Schmeeckle

Graduate Research Assistant

Tempe, Arizona

2018 August - 2019 May [FTE 0.75]

Arizona State University

Earth Surface Processes and Geomorphology Lab under the direction of Dr. Ian Walker

Graduate Teaching Assistant

Denver, Colorado

2016 September - 2018 June [FTE 0.75]

University of Denver

Cartography; Introduction GIS; Geographic Statistics; Water Resources and Sustainability; Hydrology; Human Population

Undergraduate Research Assistant

Pittsburgh, Pennsylvania

2018 August – 2019 May

University of Pittsburgh

Aquatic ecology lab under the direction of Dr. Rick Relyea

PEER REVIEWED PUBLICATIONS

Nyantakyi-Frimpong, H., LaVanchy, G. T., & **Kelley, M. M.** (2022). Human and Physical Dilemmas in Small-Scale Irrigation Development: Evidence from Climate-Sensitive Northern Ghana. *The Professional Geographer*, 1-13.

González, C., **Kelley, M.**, Marvin, M. C., López Castañeda, N., Dorn, R. I., Schmeeckle, M. (2021). Regional piedmont incision during base-level rise in the northeastern Sonoran Desert, Arizona, USA. *Physical Geography*, 1-31.

Shandonay, K., Moll, H.L., Marvin, M.C., López Castañeda, N., **Kelley, M.**, Hilgendorf, Z., Heintzman, R. and Dorn, R.I. (2021). The Fieldwork of Shared Experiences. *The Geographical Bulletin*, 62(2), 82-88.

(in-review) Heintzman, R., Brandi, A., **Kelley, M.**, Marvin, C.M. (2022). Student and Instructor Insights for an Online Synchronous Introductory Geography Lab Using iGEO 'Video Games': Fall 2020. *Journal of Geography in Higher Education*.

AWARDS & HONORS

2020 ASU SGSUP Matthew G. Bailey Scholarship Award

2019 ASU SGSUP Graduate Service Award

2019 ASU SGSUP Graduate Research Award

2019 ASU SGSUP Sunshine Award

2018 Dr. Laurance C. Herold Award for Outstanding Graduate Research in Geography

2018 Association for Women Geoscientists Outstanding Student Award

2018 Dr. Laurance C. Herold Award for Outstanding Graduate Teaching Assistant in Geography

2017 Laurance C. Herold Memorial Fund in support of field research in Geography

2017 Sustaining Watersheds Conference Scholarship Award

GRANTS AND FELLOWSHIPS

2022 ASU Graduate College Completion Fellowship

2019, 2022, 2022 ASU Graduate and Professional Student Association Individual Travel Grant Award

2018 ASU SGSUP University Graduate Fellowship

2018 GIS in the Rockies Scholarship

INVITED TALKS

Naval Research Lab

Bay Saint Louis, Mississippi

2019 February

A New Flood Risk Communication Tool: A Proof-of-Concept Product for Boulder County, Colorado (30min Talk)

FIRST AUTHOR PRESENTATIONS

American Geophysical Union Fall Meeting

2022 December 10-14

Chicago, Illinois

Near-bed fluid-particle interactions during aeolian saltation (Poster)

European Geophysical Union General Assembly

2022 March 18-21

virtual attendance

Splash dynamics of aeolian sediment transport (7min Talk)

American Geophysical Union Fall Meeting

2021 December 10-14

New Orleans, Louisiana

Particle-bed interactions in a wind tunnel using Particle Tracking and Imaging Velocimetry (15min Talk)

American Geophysical Union Fall Meeting

2019 December 10-14

San Francisco, California

Hydrodynamic and sediment observations across the sand-mud inner shelf near Ocean City Inlet (Poster)

Geological Society of America Annual Meeting

2019 September 22-25

Phoenix, Arizona

Observations across the sand-mud inner shelf during the multiphase turbulence experiment (Poster)

American Geophysical Union Fall Meeting

2018 December 10-14

Washington, D.C.

A New Flood Risk Communication Tool: A Proof-of-Concept Product for Boulder County, Colorado (Poster)

Colorado Association of Stormwater and Floodplain Managers

2018 September 25-28

Snowmass, Colorado

Showcasing Boulder County's Flood Risk Information System (FRIS): Holistic Flood Risk Communication (20min Talk)

American Association of Geographers

2018 April 10-14

New Orleans, Louisiana

Developing a Flood Risk Information for Colorado (20min Talk)

GIS in the Rockies

2017 September 21-22

Denver, CO

Developing a Flood Risk Info System for Colorado: A Mixed Methods Approach (20min Talk)

Colorado Association of Stormwater and Floodplain Managers

2017 September 19-22

Breckenridge, CO

Developing a Holistic Flood Risk Info System (FRIS) for Colorado (20min Talk)

CAMPUS TALKS

Fluid mechanics, turbulence, and open channel flow: Deriving shear stress and velocity profiles for flow down an inclined plane.

2020 Spring

Fluvial Processes, Arizona State University

ArchHydro for Watershed Delineation

2018 Spring

Hydrology, University of Denver

SERVICE

Mentorship

Micheala Roberts, ASU, School of Geographical Sciences Urban Planning, BS Geographic Information Science. Expected Graduation Spring 2023 (mprober2@asu.edu)

Colin Marvin, ASU, School of Geographical Sciences Urban Planning, BS Geography. Graduated Spring 2020 (mcmarvin@stanford.edu)

AGU EPSP Canvassing Committee

2022 February - current

Volunteer (<https://connect.agu.org/epsp/about/committees>)

AGU EPSP Graduate Student Committee

2022 February - 2022 December

Volunteer (<https://connect.agu.org/epsp/about/students>)

AGU EPSP Connects

2022 February - 2022 December

Volunteer (<https://connect.agu.org/>)

ASU Women in Science Program

2021 September – 2022 May

Chair

ASU Youth Mappers

2022 January - 2022 May

Volunteer

Association for Women Geoscientists

2019 September – 2020 April

ASU Student Chapter leader

ASU Graduate Women's Association

2019 September – 2020 April

School of Geography and Urban Planning Representative

ASU School of Geography and Urban Planning Graduate Student Committee

2020 Peer-to-Peer Coordinator

2019 President

2018 Social Coordinator

Graduate and Professional Student Association

2019 January – 2020 December

Volunteer Reviewer

University of Denver Graduate Student of the Four Faculties

2017 - 2018

Vice President

University of Denver Geography and the Environment Department

2017-2018

Graduate Student Representative

TRAININGS

Sediment Transport Short Course

2021 Utah State University

Logan, Utah

IRIC Workshop: Introduction to Modeling River Flow and Morphodynamics

2019 U.S. Geological Survey

Golden, Colorado

COMMUNITY OUTREACH

2023 Poudre Library Volunteer

2018 Arts Street Denver, CO Youth GIS program volunteer

MEDIA COVERAGE

<https://tinyurl.com/SeeingTheWind>

SKILLS

Computer Languages

MatLab, Python

Software & Tools

ArcGIS Desktop, ArcOnline, ENVI, MatLab, Google Earth Engine, CloudCompare, Agisoft, JMP, HEC-RAS, RiSCAN, Kordata, OpenFOAM, FIJI (ImageJ), OpenPIV & GeoDa, iRIC

Equipment Experience

Circulatory flume, Open-circuit wind tunnel, Terrestrial Laser Scanner, UAS (DJI), Total Station, Automatic Level, PIV/PTV systems, RTK GPS devices, 3D Sonic anemometers, sand traps, wenglors, GoPros, ADCPs, and ADVs, sediment sieves, and MasterSizer.

PROFESSIONAL MEMBERSHIPS/AFFILIATIONS

American Geophysical Union (AGU)

The International Society for Aeolian Research

Association for Women Geoscientists (AWG)

American Association of Geographers (AAG)

REFERENCES

Dr. Mark Schmeeckle

Arizona State University, Professor

mschmeec@asu.edu

Dr. Ian Walker

UC Santa Barbara, Professor

ianjwalker@ucsb.edu

Dr. Christy Swann

RCOAST, Coastal and Aeolian Scientist

swann@r-coast.com

Dr. Ron Dorn

Arizona State University, Professor

atrid@asu.edu

Dr. Hillary Hamann

University of Denver, Teaching Professor

hillary.hamann@du.edu