Wren Raming

https://wrenraming.github.io
lraming@asu.edu | 801-647-3345

EDUCATION

ARIZONA STATE UNIVERSITY
PhD Candidate
Expected Spring 2022 | Tempe, AZ
Cum. GPA: 3.8 / 4.0

UNIVERSITY OF UTAH
BS in Geosciences
2012-2015 | Salt Lake City, UT
Conc. in Geology
Minor in Physics
Dean's List (All Semesters)
Cum. GPA: 3.8 / 4.0

UNIVERSITY OF UTAH
BS in Economics
2004-2009| Salt Lake City, UT
Cum. GPA: 3.5 / 4.0

COURSEWORK

GRADUATE
Geomorphology
Remote Sensing
Python For Graduate Research
Hydrology
Linear Regression Analysis

UNDERGRADUATE
Intro to Computing In Physics
Field Camp
Digital Mapping and ArcGIS
Sed. Strat.
Structural Geology
Differential Equations and Linear Algebra
Applied Statistics

SKILLS

PROGRAMMING
Competent:
Matlab• Python
Familiar:
C++ • R•Unix•HTML

GEO SPATIAL
Competent:
TopoToolbox• QGIS• ArcGIS• CloudCompare
Familiar:
GDAL•ENVI

OTHER
Adobe Illustrator•WFR certified

RESEARCH EXPERIENCE

ARIZONA STATE UNIVERSITY | PhD
2016-2022 | Tempe, Az

- Accomplished original and significant research on thresholds in surface processes and landscape evolution on the Hawaiian Islands
- Submitted one manuscript to a peer review journal and currently preparing two additional manuscripts
- Employed numerical and computational techniques, including 1D and 2D surface processes modeling, statistical analysis, Monte Carlo techniques, and topographic analysis
- Conducted field work in remote locations

GEOSCIENTIST IN THE PARK PROGRAM | Research Intern (RI)
Summer 2018 | Mount Rainier, Wa

- Conducted research on hazards of aggradation and extreme floods in response to climate change on the Carbon River, Mount Rainier National Park
- Presented findings to park management
- Used field observations including total station surveys and remote sensing analysis to test whether aggradation on the Carbon River is best modeled by a sediment pulse driven by an extreme event or by continual upstream sediment supply from glacial recession

JE FULLER HYDROLOGY AND GEOMORPHOLOGY | RI
Summer 2017 | Tempe, Az

- Implimented research on thresholds of motion for boulders and knickpoint retreat on tributaries of the Verde River, Arizona
- Used Structure from Motion and UAV mapping to obtain high resolution topography and HEC-RAS and FaSTMECH to model a range of flood conditions and analyze the onset of boulder mobility

SPACE SCIENCE INSTITUTE | RI
Summer 2015 | Boulder, CO

- Executed research on playas and their potential as dust source hazards in the Western U.S. and Australia
- Presented findings at the AGU Fall meeting in San Francisco, 2015
- Used an ASD Fieldspec Spectroradiometer for in-situ identification of dust generating minerals and multi-range spectral feature fitting of hyper-spectral data sets in ENVI to map spatial extent of minerals

UNIVERSITY OF UTAH | Undergraduate Research Assistant
2013-2015 | Salt Lake City, UT

- Accomplished significant research on identifying both natural and anthropogenic influences on the extent of the Bonneville Salt Flats, UT
- Co-authored one peer-reviewed paper, one book chapter, and presented one poster at GSA fall meeting 2014
- Research provided foundation for a 1.5 million dollar Dynamics of Coupled Natural and Human Systems NSF grant
- Utilized multi-spectral data sets, field data, ENVI and R to identify trends in the areal extent of the halite crust across three decades

PUBLICATIONS

MANUSCRIPTS

Raming, L.W. & Whipple, K.X. (2021). Thresholds in Knickzone Retreat Along the Na Pali Coast, Kaua'i, Hawaii (*submitted*)

Raming, L.W. , Whipple, K.X., Strauch, A. M. (2021). Physical Limits on Bedrock Incision (*in prep*)

Raming, L.W. , Whipple, K.X., Yager, E., Strauch, A. M. (2022). Thresholds and sediment flux modulate the influence of climate on landscape evolution (*in prep*)

Bowen, B., Kipnis, E., **Raming, L.W.**(2017).Temporal Dynamics of Flooding, Evaporation, and Desiccation Cycles and Observations of Salt Crust Area Change at the Bonneville Salt Flats, Utah *Geomorphology* 299, 1-11.

BOOK CHAPTERS

Jewell, P., Nelson, D., Bowen, B., and **Raming, L. W.** (2016). Insights into Lake Bonneville Using Remote Sensing and Digital Terrain Tools. In *Lake Bonneville: A Scientific Update* pp (598 - 616). Elsevier

CONFERENCE ABSTRACTS

Raming, L. W. & Whipple, K. X. (2021 December). Limits on the Effectiveness of Waterfalls and Bedrock River Incision in Landscape Evolution. Talk at AGU Fall Meeting

Raming, L. W. , Zhiang, C., Keating, D., Whipple, K. X., Yager, E., Strauch, A. M., Das, J. (2020 December). Extreme Discharges and Thresholds of Boulder Mobility in Steep Mountainous Streams on Maui, Hawai'i. Poster at AGU Fall Meeting

Raming, L. W. & Whipple, K. X. (2020 October). Canyon formation on the Hawaiian Islands: Can a single threshold of river incision explain observed patterns of incision? Talk GSA Fall Meeting

Raming, L. W. & Whipple, K. X. (2019 December). Lithologic Controls on the Formation and Retreat of Waterfalls. Poster at AGU Fall Meeting

Whipple, K. X., Rossi, M.W., **Raming, L. W.** (2019 December). Threshold Processes in Fluvial Landscape Evolution (invited). Talk at AGU Fall Meeting

Raming, L. W. & Whipple, K. X. (2019 September). Knickpoints of Kaua'i, Hawai'i: Accelerated Incision or Lithological Control? Talk at GSA Fall Meeting

Raming, L. W. & Whipple, K. X. (2017 December). Thresholds and the Evolution of Bedrock Channels on the Hawaiian Islands. Poster presented at AGU Fall Meeting

Raming, L. W. , Farrand, W. H., & Bowen, B. B. (2015 December). Mineralogical composition and potential dust source of playas in the Western U.S. and Australia as remotely identified through imaging spectroscopy. Poster presented at AGU Fall Meeting

Raming, L. W. & Bowen, B. B. (2014 October). Spatiotemporal analyses of environmental conditions and surface processes at the Bonneville Salt Flats. Poster presented at GSA Annual Fall Meeting

AWARDS

FELLOWSHIPS

2020 SESE Summer Exploration Graduate Fellowship
2018 NSF Graduate Fellowship

HONORS

2019 - 2020 Graduate Excellence Award
2019 Distinguished Advisor Award
2018 - 2019 Graduate Excellence Award
2016 ASU SESE First Year Award
2015 U of U Geo. Dept. Excellence In Undergraduate Research Award

GRANTS

2019 GSA Graduate Student Research Grant
2019 ASU Graduate and Professional Student Association Research Grant
2015 University of Utah, Doelling Scholarship
2014 - 2015 University of Utah, Undergraduate Research Opportunity Award
2014 - 2015 University of Utah, GCSC Travel Grant
2014 - 2015 University of Utah, Mineralogical Society of Utah Scholarship
2013 - 2014 University of Utah, Ken and Nedra Bullock Keller Scholarship