

# Carson MacPherson-Krutsky

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## RESEARCH INTERESTS

Natural Hazard and Risk Education, Disaster Risk Reduction, Disaster Preparedness, Co-Production of Knowledge, Applied/Actionable Science, Information-Seeking and Behavior Change, Design Thinking, User-Centered Design, Community Resilience

## CURRENT POSITION

May 2021- Present     **Research Scientist, Department of Geoscience, Boise State University, Boise, ID**  
Develop projects, collect and analyze data to better understand what motivates people to prepare for hazard events.

## EDUCATION

2017 – 2021     **Ph.D. Geosciences, Boise State University, Boise, ID**  
Dissertation: Translating Risk Information into Protective Action: Examining Household Response to Information About Earthquake Hazards and Risk. *Advisor: Dr. Brittany Brand Co-Advisor: Dr. Michael K. Lindell*

2014 - 2016     **M.S. Geosciences, University of Montana, Missoula, MT**  
Thesis: HazardReady – a geographically based natural hazard education and preparedness web application – [hazardready.org](http://hazardready.org). *Advisor: Dr. Rebecca Bendick*

2008 - 2012     **B.S. Geology, Western Washington University, Bellingham, WA**  
Concentration: Geophysics, Minor: Mathematics. *Advisor: Dr. Jackie Caplan-Auerbach*

## PROFESSIONAL EXPERIENCE

1/2019- Present     **Co-Founder/Community Engagement Coordinator, Hazard and Climate Resilience Institute at Boise State University, Boise, ID**  
Co-developed the institute with the Director, Dr. Brand. I work with Dr. Brand to develop partnerships, coordinate community engagement events, plan our resilience conference (postponed due to COVID-19), and write grant proposals.

2/2017- 8/2017     **Education Supervisor, The Discovery Center of Idaho, Boise, ID**  
Coordinated, supported, and trained both paid and volunteer floor staff at Idaho's only hands-on science center. I oversaw onsite and outreach programs in the Treasure Valley. I was offered full-time salaried position prior to leaving to pursue a PhD.

5/2016- Present     **Co-Owner/Data Specialist, HazardReady LLC, Missoula, MT**  
Create webpage content, acquire and process ArcGIS data, coordinate with web developers. I also collaborate with stakeholders to tailor content to fit user needs. See: [Hazardready.org](http://Hazardready.org) for all active locations.

- 6/2016-10/2016 **Curriculum Developer, UN Environment Program in Afghanistan, Remote Work**  
Developed 14-week curricula for two disaster management courses, *Science/Hazard Communication* and *Natural Hazard Investigation and Planning in Afghanistan*. I was offered 7-month position in Afghanistan after submitting curriculum.
- 8/2014-5/2016 **Teaching Assistant, University of Montana, Missoula, MT**  
Taught lab portion of introductory geology class which included, creating exams and extra credit assignments, performing scientific demonstrations, and managing grade books for more than 50 students each semester.
- 6/2015-7/2015 **Education & Community Engagement (ECE) Intern, UNAVCO, Denver, CO**  
Developed materials to engage early career and graduate students with geodesy and geosciences. As a result of my work, I was asked to and did serve as the student representative for the 2016 ECE Advisory Committee.
- 5/2013-10/2013 **USGS/NAGT Intern, U.S. Geological Survey, Menlo Park, CA**  
Assisted with gravity, magnetic, and magnetotelluric field methods as well as digitizing well log data using ArcMap. Principal Investigators: Jonathan Glen, Vicki Langenheim, and David Ponce

**Software/Computer Skills:** ArcGIS, SPSS (Statistical Analysis Software), Adobe Illustrator, iMovie

## GRANTS, AWARDS & HONORS

### *Grants*

(Pending) NSF/NIST Disaster Risk Research Grants, [20-581](#); Proposal # 2053967, *Household response to wildfire? Integrating behavioral science & evacuation modeling to improve community wildfire resilience*.  
Natural Hazards Center Mitigation Matters Research Grant (2020)  
Geological Society of America Graduate Student Research Grant (2018)  
Geological Society of America Graduate Student Research Grant (2014)

### *Awards & Honors*

Geological Society of America Geology & Society Division Best Student Paper Award (2018)  
Nomination for USGS/National Association of Geoscience Teachers (NAGT) Internship (2012)  
Emerald City Rotary Scholarships (2012, 2000)  
NCAA Division II National Champion, WWU Women's Rowing Team (2009, 2010, 2011)  
WWU Athletic Gender Equity Scholarship, Full Tuition (2010, 2011, 2012)  
WWU Haskell Crew Scholarship (2008)

## COMMUNITY SERVICE/OUTREACH

- **Vice President, Geoscience Graduate Leadership Organization, Boise State University, Boise, ID, (09/2020 – 06/2021)** I was elected with five other students to advocate on behalf of all graduate students and actively promote a welcoming, respectful and inclusive environment by partnering with faculty and other university leaders on diversity, equity, and inclusion initiatives.
- **Boise State Student Outreach, Boise, ID, (2017-present)**, I participate in outreach events with other BSU geology students. I perform different demonstrations on earth processes for grades K-12.

- **UMT Expanding Your Horizons STEM Conference, Missoula, MT, (2016)**, I developed and led a one hour workshop on earthquakes for 6<sup>th</sup>-8<sup>th</sup> grade girls
- **Sentinel High School, Missoula, MT, (2015)** I volunteered in a freshman earth science classroom and provided lessons and information on natural hazards relevant to Missoula, MT
- **Spirit at Play Preschool, Missoula, MT, (2014, 2015)** I taught preschoolers about earthquakes and how to prepare during the nationwide Great ShakeOut Drill

Educational products I developed– see [my website](#) to view

- **Mercalli Intensity Explained**, A hand drawn video I made in 2018 to explain what the Mercalli Intensity Scale is and what it is used for (27,845 views as of Jul. 2021).
- **Document Checklist for Emergencies**, A printable sheet made to help people understand which important documents they should have and why in case of an emergency.
- **Let's Make Infographics – A Science Communication Activity**, An activity I developed to make science infographics. I successfully ran this activity at a STEM workshop for high school girls.

## PROFESSIONAL AFFILIATIONS

American Geophysical Union | Geological Society of America | Association of Women Geoscientists

## PUBLICATIONS & PRESENTATIONS

*Publications:*

**MacPherson-Krutsky, C.**, Brand, B., Lindell, M.K., *in review*, From information to protective ction along the Cascadia Subduction Zone: evaluating risk communication and public preparedness in metropolitan Portland, OR. *Earthquake Spectra*.

**MacPherson-Krutsky, C.**, 2020, 3 Questions to ask yourself the next time you see a graph, chart, or map, *The Conversation US*, [theconversation.com/3-questions-to-ask-yourself-next-time-you-see-a-graph-chart-or-map-141348](https://theconversation.com/3-questions-to-ask-yourself-next-time-you-see-a-graph-chart-or-map-141348), 24, June.

**MacPherson-Krutsky, C.**, Brand, B. D., & Lindell, M. K., 2020, Does updating natural hazard maps to reflect best practices increase viewer comprehension of risk? *International Journal of Disaster Risk Reduction*, 46. <https://doi.org/10.1016/j.ijdr.2020.101487>

Langenheim, V.E., Brocher, T.M., McPhee, D.K., Earney, T.E., **MacPherson-Krutsky, C.**, Morgan, K.S., Matson, G., and McFaul, R.S., 2018, Digitized sonic velocity log data of the Sacramento Delta region, California: U.S. Geological Survey data release, <https://doi.org/10.5066/P9PYUFI7>

**MacPherson-Krutsky, C.**, 2016, HazardReady - A geographically based natural hazard education & preparedness web application, M.S. Thesis, University of Montana, Missoula, MT, 73p. <https://scholarworks.umt.edu/etd/10796/>

*Posters and Talks:*

**MacPherson-Krutsky, C.**, 2021, Communicating flood and other hazard risks; using best practices and making it personal, Quarterly Blaine County Local Emergency Planning Committee (LEPC) Meeting, Held Virtually, 10 June.

**MacPherson-Krutsky, C.,** Brand, B., Lindell, M.K., 2020, Planning for the day after tomorrow – investigating factors that motivate households to prepare for disasters: Abstract 751285: Presented at Fall Meeting, AGU, Virtual due to COVID-19, 1-17 December.

**MacPherson-Krutsky, C.,** 2020, Graphs, Charts, Oh My! Interpreting graphics in the age of information overload. City of Boise Rotary Club Meeting, Held Virtually, 6 October.

**MacPherson-Krutsky, C.,** 2020, Coming together to tackle grand challenges related to public health, climate change and beyond: *Invited Talk*, Presented at Idaho Conservation Wild Idaho! Web Series – Part Three: Climate and Public Health, Virtual Meeting, 16 July.

**MacPherson-Krutsky, C.** and Brand, B., 2020 [*Cancelled due to COVID-19*], Leveraging university capabilities to facilitate regional resilience: Poster presentation: The Disaster and Resilience Summit, Montréal, Québec, Canada, 16-18 June.

Brand, B. and **MacPherson-Krutsky, C.,** 2019, People learn by doing: how to use active-learning to communicate about natural hazard risks: Workshop presented at the Northwest Regional Floodplain Management Association (NORFMA) Annual Conference, Boise, ID, 24-27 September.

**MacPherson-Krutsky, C.,** Brand, B., Lindell, M.K., 2018, Using active-learning and goal-setting strategies to promote hazard awareness and preparedness: *Invited Talk*, Abstract: 317780 Presented at Geological Society of America Meeting, Indianapolis, ID, 4-7 November.

**MacPherson-Krutsky, C.,** Brand, B., Lindell, M.K., 2018, Does updating natural hazard maps to reflect best practices increase viewer comprehension of risk? Poster Presentation, #130. Presented at the Natural Hazards Workshop, Broomfield, CO, 8-12 July.

**MacPherson-Krutsky, C.,** 2016, MissoulaReady – A geographically based natural hazard education & preparedness web application, Quarterly Missoula County Local Emergency Planning Committee Meeting, Missoula, Montana, 12 January.

**MacPherson-Krutsky, C.,** Bendick, R., 2015, Synthesizing, summarizing, and sharing natural hazard information for non-scientists: Abstract PA21B-2161 Presented at Fall Meeting, AGU, San Francisco, California, 13-15 December.

Kittross, S., Rowan, L., **MacPherson-Krutsky, C.,** Morris, A., Bartel, B., 2015, Geodesy Brings the Geoscience Community Together as Geophysicists: Abstract PA23C-05 presented at Fall Meeting, AGU, San Francisco, California, 13-15 December.

Denton, K.M., Ponce, D.A., Miller, D.M., **MacPherson-Krutsky, C.,** 2013, Carbonatite: a geophysical investigation of rare earth element terrane, eastern Mojave Desert, California: Abstract GP51C-1092 presented at Fall Meeting, AGU, San Francisco, California, 9-13 December.

Peacock, J., McPhee, D.K., Ponce, D.A., Mangan, M.T., **MacPherson-Krutsky, C.,** Matson, G., 2013, 3-D visualization of Mono Basin, California from geophysical studies: Abstract V11D-04 presented at Fall Meeting, AGU, San Francisco, California, 9-13 December.