

EMILY M. GERAGHTY WARD

Curriculum Vitae
619 Parkhill Drive
Billings, Montana 59102
303-877-2848

EDUCATION

University of Montana

Doctor of Philosophy

Structural Geology Emphasis

Missoula, Montana

Spring 2007

Development of the Rocky Mountain foreland basin: Combined structural, mineralogical, and geochemical analysis of basin evolution, Rocky Mountain thrust front, northwest Montana

Committee Members: James W. Sears (advisor), Julia Baldwin, Marc Hendrix, Steve Sheriff, and Anne Klene (Department of Geography).

Examination Fields:

- Flexural, Isostatic and Gravitational Elements of Foreland Basin Systems
- Tectonic and Sedimentologic Controls on Basin Fill Architecture: Examples of Underfilled and Overfilled Conditions in Ancient and Modern Foreland Basin Settings
- Evolution of Foreland Basin Systems: Implications for the northern Rocky Mountains system

Washington State University

Master of Science

Structural Geology Emphasis

Pullman, Washington

May 2002

Reactivation of mesoscale structures in strike-slip and thrust faulting regimes: evidence from Les Matelles, France and the Sawtooth Range, northwestern Montana

Committee Members: A. John Watkinson (advisor), Mike Pope, and Simon Kattenhorn (University of Idaho).

Indiana University

G429 Geology Field Course

Completed course concentrated in structural mapping for college credit.

Bloomington, Indiana

Summer 1999

Whitman College

Bachelor of Arts

Major: Geology

Minor: Environmental Studies

Walla Walla, Washington

May 1999

Honor's Thesis: Glaciation of the Elkhorn Mountains, northeastern Oregon

Libera Università di Lingue e Comunicazione

Whitman College Study Abroad Program

Completed courses in Italian language, history and women's literature.

Milan, Italy

Spring 1998

OUTREACH AND TEACHING EXPERIENCE

Cooperative Institute for Research in Environmental Sciences

Boulder, Colorado

Education and Outreach Associate

Spring 2022-present

- Design and assessment of undergraduate curricula
- Focus areas: place-based education, course-based undergraduate research experiences (CUREs) and field experiences

Rocky Mountain College

Billings, Montana

Associate Professor of Geology

Fall 2017-Fall 2021

- Designed course-based undergraduate research experiences (CURE) across a suite of courses related to rockfall hazards
- Revised select courses to incorporate place-based content and instructional techniques
- Embedded career and graduate school preparation activities into Geology Capstone course

Rocky Mountain College

Billings, Montana

Assistant Professor of Geology

Fall 2011-Spring 2017

- Designed and taught courses in Introductory Geology, Earth Materials, Geomorphology, Geology of the National Parks, Field Methods, Geomechanics, and Oil and Gas Geology
- Course activities involved both field and quantitative exercises

Michigan State University Integrated Studies in Physical Science

East Lansing, Michigan

Instructor Natural Hazards and Environment

Summer 2010

- Designed a course for non-science majors that utilized active and cooperative learning
- Classroom activities were informed by geocognition research on conceptual understanding

University of Montana Western Department of Environmental Sciences

Dillon, Montana

Instructor of Geology-Adjunct Faculty

Fall 2005-Spring 2009

- Led students in field-based and experiential learning of introductory geology concepts
- Taught small classes (<30 students) in 3 ½ week “blocks” emphasizing learning by immersion

Indiana University Geologic Field Station

Cardwell, Montana

Assistant Instructor

Summer 2002

- Assisted students in the basics of field mapping
- Hiked extensively in the eastern region of the Tobacco Root Mountains

Washington State University Geology Department

Pullman, Washington

Laboratory Teaching Assistant

Fall 2000-Spring 2002

- Prepared and taught lab sessions to 10-18 undergraduate students
- Assisted students with basic geologic ideas in introductory, historical, and structural geology

RESEARCH EXPERIENCE

Michigan State University

East Lansing, Michigan

Department of Geological Sciences

Fall 2009-Fall 2011

Center for Research on College Science Teaching and Learning

Postdoctoral Research Associate

- Conducted research in Geocognition and Geoscience Education research fields with particular focus on collaborative work with Tribal College communities in assessment
- Managed online testing, user submissions, and expert review of concept inventory questions for the Geoscience Concept Inventory (GCI) WebCenter
- Assisted with mentoring undergraduate and graduate students in the Geocognition Research Lab

University of Montana Center for Learning and Teaching West

Missoula, Montana

NSF Graduate Research Fellow

Fall 2002-Spring 2007

- Designed and facilitated professional development opportunities for Browning Middle School and De La Salle Middle School teachers in Browning, Montana
- Collaboratively developed outdoor and culturally-relevant earth science activities for middle school students with middle school teachers and Tribal college staff

University of Montana Geology Department

Missoula, Montana

NSF EPSCoR (Experimental Program to Stimulate Competitive Research) Fall 2002-Spring 2004 Graduate Research Assistant

- Performed structural field mapping along Montana's Rocky Mountain Front
- Focused research on structural history of the northern Rockies thrust belt

KECK Research Consortium

North Powder, Oregon

Field Researcher

Summer 1998

- Hiked extensively and used topographic maps and GPS
- Determined and mapped glacial limits using geomorphology
- Research provided subject for undergraduate thesis which was presented and published

CONSULTING EXPERIENCE

External Evaluator (bolded RMC budget indicates money provided to RMC with indirect costs)

- 2020-2023: NSF IUSE-GEOPATHs (UP): Native Science Fellows in Service (Collaboration among Salish Kootenai College, Blackfeet Community College and Hopa Mountain) (\$27,000 Evaluation Budget)
- 2020-2021: NSF REU Site on Sustainable Land and Water Resources (Collaboration between University of Minnesota and Salish Kootenai College) (\$7,500 Evaluation Budget)
- 2015-2016: NSF Improving Undergraduate STEM Education (IUSE): Geo-Needs-Stakeholder needs assessments for broadening participation in the geoscience workforce (Collaboration among Western Michigan University, Northern Illinois University, Marshall University, Montana State University, and Carleton College) (\$15,062 **RMC budget**)
- 2014-2017: NSF Advancing Informal STEM Learning (AISL) *Niizho Bimaadiziwin* (Walking in Two Worlds): Preparing Future Native Scientists, Expanding Research Ethics, and Learning from Resource Managers on Tribal Lands (Collaboration with University of Minnesota) (\$20,048 **RMC budget**)
- 2013-2017: NSF Transforming Undergraduate Education in Science (TUES): Transforming Indigenous Geoscience Education and Research (Collaboration with Salish Kootenai College) (\$14,095 evaluation budget)
- 2012-2015: NSF Research Experience for Undergraduates (REU) Site on Sustainable Land and Water Resources (Collaboration between University of Minnesota and Salish Kootenai College) (<http://ncedreuslawr2013.wordpress.com/>) (\$60,000 evaluation budget)
- 2012: Geoscience Alliance Conference: "Home Places, Local Landscapes, Traditional Knowledge and Modern Technologies" (<http://geosciencealliance.wordpress.com/>)
- 2010: First Geoscience Alliance Conference

Assessment design

- 2020-present: Assessment consultant for NSF RCN-UBE Undergraduate Field Experiences Research Network ([U-FERN](#)) (Collaboration with Oregon State University) (\$11,133 **RMC budget**)
- 2020-present: Assessment consultant for the NSF RCN [Rivers Field Studies Network](#)

Assessment design (cont.)

- 2019-present: Steering Committee Member and Member of the Assessment Working Group for the NSF-funded [Undergraduate Field Experience Research Network](#) (U-FERN)
- 2012-2015: Assessment consultant for National Science Foundation project [InTeGrate: Interdisciplinary Teaching of Geoscience for a Sustainable Future](#)
- 2010-2011: Author for *MasteringGeology* online assessment for Pearson Education, Inc.

MENTORING EXPERIENCE

Cora Hayter (2021)

- Undergraduate student awarded a Montana Space Grant Consortium (MSGC) Internship using dendrochronology to track rockfall processes along the Rimrocks

Micah Gregory-Lederer (2020-Outside committee member)

- Master's Thesis (Montana Technological University) Nadir and Oblique UAV Photogrammetry Techniques for Quantitative Rock Fall Evaluation in the Rimrocks of South-central Montana.

Alethea Shaules (2016-2017)

- Undergraduate Honor's Thesis: Rockfall Hazard Assessment for the Eagle Formation in Billings, Montana: Analyzing the Major Weathering and Erosional Processes to Explain Rockfall Events.
- Student awarded Yellowstone River Research Center grant

SCIENTIFIC GRANTS

Funded: NSF-Geoscience Education (GeoEd). **PI: E.M.G. Ward;** Co-PIs: J. Libarkin (Michigan State University), S. Semken (Arizona State University) (2010-2014) *Collaborative Research: Cultural Validation of Geoscience Assessment*. \$150,000.

Funded: Geological Society of America Graduate Research Grant (2004) **PI: E.M. Geraghty** *Jurassic-aged Fractures and Grikes in Mississippian Carbonate: Implications for Fractured Hydrocarbon Reservoirs, Rocky Mountain Thrust Front, Montana*. \$2,000.

Funded: American Association of Petroleum Geologists Grants-In-Aid program (2001) **PI: E.M. Geraghty** *Reactivated stylolite systems in strike-slip and thrust fault regimes*. \$1,698.

INSTITUTIONAL GRANTS

Funded: Title III Mini-grant. (2011-2012) **PIs: Emily Ward, Derek Sjostrom, Tom Kalakay** *Using technology to increase student engagement, retention and persistence to graduation: An iPad2™ pilot program in Geology*. \$5,000 (**Rocky Mountain College**)

Funded: Science Education Enhancement and Development (SEED) grant. (2014-2015) **PI: Emily Geraghty Ward** *Increasing access in geoscience classrooms: Using Wifi-technology to improve collaborative work with microscopes*. \$2,623 (**Rocky Mountain College**)

PUBLICATIONS

Shortlidge, E., Jolley, A., Shaulskiy, S., **Geraghty Ward, E.**, Lorentz, C., and O'Connell, K., 2021, A Resource for Understanding and Evaluating Outcomes of Undergraduate Field Experiences: *Ecology and Evolution* doi: <http://doi.org/10.1002/ece3.8241>

Ward, E. G. et al., 2021, Affective Learning Outcomes in the Field: A Review of the 2021 Undergraduate Field Experiences Research Network Meeting: *Ecological Society of America Bulletin* doi: <https://doi.org/10.1002/bes2.1920>

Geraghty Ward, E.M., Dalbotten, D., Bueno Watts, N., and Berthelote, A., 2018, Using place-based, community-inspired research to broaden participation in the geosciences: *GSA Today*, v. 28, n. 8, p. 26-27.

Semken, S., **Geraghty Ward, E.**, Moosavi, S., and Chinn, P.W.U., 2017, Place-based Education in Geoscience: Theory, Research and Practice: *Journal of Geoscience Education*, v. 65, n. 4, p. 542-562.

Petcovic, H. L., Turner, S. P., **Geraghty Ward, E.**, Cartwright, T., LaDue, N., Mogk, D., Bentley, A. P. K., and Her, X., 2016, Geo-Needs: Stakeholder needs assessment for broadening participation in the geoscience workforce (Geo-Needs Focus Group Meetings Report). Available from the Geo-Needs website: <http://serc.carleton.edu/geoneeds/index.html>

- Bueno Watts, N., Smythe, W., **Geraghty Ward, E.**, Berthelote, A., Green, V., and Dalbotten, D., 2014, Future Earth Perspectives from the Geoscience Alliance. In D. Dalbotten, G. Roehrig, and P. Hamilton (Eds.), *Future Earth--Advancing Civic Understanding of the Anthropocene: American Geophysical Union Monograph*, p. 67-75.
- Ward, E.M.G.**, Semken, S., and Libarkin, J.C., 2014, The design of place-based, culturally informed geoscience assessment: *Journal of Geoscience Education*, v. 62, p. 86-103.
- Momsen, J.L., Clark, S., Doherty, J.H., Haudek, K., Schramm, J.W., and **Ward, E.M.G.**, 2012, Lost in translation: Quantifying the overlap of popular media and non-majors science course assessment vocabulary: *Ecosphere*, v. 3, n. 5, p. 1-13.
- Libarkin, J.C., **Ward, E.M.G.**, Anderson, S.W., Kortemeyer, G., Raeburn, S.P., 2011, Revisiting the Geoscience Concept Inventory: A call to the community: *GSA Today*, v. 21, n. 8, p. 26-28.
- Libarkin, J.C., **Ward, E.M.G.**, 2011, Understanding Earth Processes: Student Alternative Conceptions about Geophysics: *The Earth Scientist**
- Libarkin, J.C. and **Ward, E.M.G.**, 2011, The qualitative underpinnings of quantitative concept inventory questions. In A. P. Feig & A. Stokes (Eds.), *Qualitative research in geoscience education: Geological Society of America Special Paper*, p. 37-48.
- Ward, E.M.G.** and Sears, J.W., 2007, Reinterpretation of fractures at Swift Reservoir, Rocky Mountain thrust front, Montana: Passage of a Jurassic forebulge? in Sears, J.W., Harms, T.A., and Evenchick, C.A., eds., Whence the Mountains? Inquiries into the evolution of orogenic systems: *Geological Society of America Special Paper 433*, p. 197-210.
- Watkinson, A.J. and **Geraghty Ward, E.M.**, 2006, Reactivation of pressure-solution seams by a strike-slip fault-sequential, dilational jog formation and fluid flow: *AAPG Bulletin*, v. 90, no. 8, p. 1187-1200.
- Geraghty, E.M.** and Watkinson, A.J., 2005, Reactivation of bedding planes within carbonate thrust sheets, Sun River Canyon, Sawtooth Range, northwestern Montana: *Northwest Geology*, v. 34, p. 7-27.*
- Geraghty, E.M.** and Mudge, M.R., 2005, Revisiting the Structure and Stratigraphy of the Sun River Canyon, Sawtooth Range, Montana: Road Log—Augusta to Sun River Canyon: *Northwest Geology*, v. 34, p. 71-81.*
- Geraghty, E.M.**, 2005, Jurassic-aged fractures and grikes in Mississippian carbonate, Montana Thrust Belt: Road Log—Choteau to Swift Reservoir: *Northwest Geology*, v. 34, p. 93-101.*
- Sears, J.W., Braden, J., Edwards, J., **Geraghty, E.**, Janiszewski, F., McInenly, M., McLean, J., Riley, K., and Salmon, E., 2005, Road Log--Rocky Mountain Foothills Triangle Zone, Sun River, Northwest Montana: *Northwest Geology*, v. 34, p. 45-70.*

*denotes editor-reviewed articles

CONFERENCE PRESENTATIONS AND INVITED TALKS

- Ward, E.**, 2021, Using Backward Design to Assess Your Classes, Invited Speaker for Sierra Nevada University Faculty Development Hour (April 2021)
- Vonesh, J. Perry, D., Rost, A., Yarnell, S., McLaughlin, J., Brown, M., Shimoda, R., Fiedler, R., Ruginski, A., O'Dowd, A., **Ward, E.**, Gupta, R., and Teittinen, D., 2021 The River Field Studies Network: Connecting Rivers, People, and Science Through Immersive Field-based Education, Society of Freshwater Science 2021 Virtual Meeting.
- Dalbotten, D., Bueno Watts, N., **Ward, E.**, and Berthelote, A., 2020, The REU on Sustainable Land and Water Resources 2020: a (Virtual) Tribal and Community-Based Participatory Research Experience, American Geophysical Union Meeting Online.
- Jolley, A., Shortlidge, E.E., Shaulskiy, S., Lorentz, C.N., **Ward, E.G.**, and O'Connell, K.B., 2020, What do undergraduate students gain from field experiences? A practical guide to assessment and evaluation, Presentation at the Geoscience Society of New Zealand Annual Conference. 22nd-25th November 2020, Christchurch, New Zealand. Session 9A - Geo-Teaching & Practice.
- Bueno Watts, N., Dalbotten, D., **Ward, E.**, and Berthelote, A., 2020, Methods for incorporating identity, place and culture into a “virtual” undergraduate research experience: The REU on Sustainable Land and Water Resources during the COVID19 Pandemic, Online Meeting of Geological Society of America *Abstracts with Programs*.
- Ward, E.M.G.**, Semken, S., and Libarkin, J.C., 2018, Assessing Conceptual Change in Place-based Geoscience Education: Theories and Methods, NAGT-GER Invited Speaker, Geological Society of America Annual Meeting Abstracts with Programs.

- Dalbotten, D., Berthelote, A.R., Bueno Watts, N., and **Geraghty Ward, E.M.**, 2017, The Research Experience for Undergraduates on Sustainable Land and Water Resources and the Geoscience Alliance Network-Working hand in hand to promote broadening participation in the geosciences, Geological Society of America *Abstracts with Programs*.
- Ward, E.M.G.**, Semken, S., and Libarkin, J.C., 2016, A mixed-methods approach to assessment design that incorporates culture and place, Geological Society of America *Abstracts with Programs*.
- Dalbotten, D., Bueno Watts, N., and **Geraghty Ward, E.M.**, 2016, A geoscience research opportunity that is focused on community-based participatory research on Native reservations—The REU on sustainable land and water resources, Geological Society of America *Abstracts with Programs*.
- Petcovic, H.L., Bentley, A.P.K., Mogk, D.W., **Geraghty Ward, E.M.**, Turner, S.P., LaDue, N., and Cartwright, T., 2016, Geo-needs: Stakeholder needs assessment for broadening participation in the geosciences at two-year and minority-serving institutions, Geological Society of America *Abstracts with Programs*.
- Ward, E.M.G.**, 2016, Broadening participation in the geosciences: A case for place-based education and research, Invited Speaker University of Illinois-Chicago, Department of Geology Seminar Series.
- Bentley, Andrew Phillip Keller, Petcovic, Heather, L., Turner, Sheldon, P, LaDue, Nicole, D., Her, Xai, Cartwright, Tina, Mogk, David, W., and **Ward, Emily M. Geraghty**, 2015, GEO-NEEDS: Ideal Models for Broadening Participation in the Geosciences at Two-Year and Minority-Serving College, Geological Society of America *Abstracts with Programs*.
- Ward, E.M.G.**, 2015, Opportunities for collaboration with Rocky Mountain College: An example from the Exxon Mobil Project, Yellowstone Bighorn Research Association Industry Day Invited Speaker.
- Ward, E.M.G.**, Steer, D., Manduca, C. and Iverson, E., 2015, Assessing the validity of the Geoscience Literacy Exam (GLE), Earth Educators Rendezvous, Boulder, Colorado.
- Semken, S., **Ward, E.M.G.**, Libarkin, J., 2015, Place-based and culturally valid geoscience curriculum and assessment development, Earth Educators Rendezvous, Boulder, Colorado.
- Ward, E.M.G.**, Dalbotten, D., and Berthelote, A., 2014, Broadening Participation in Research Experiences for Undergraduates (REU) Programs: An Evaluation of the Team Research Model for Undergraduate Research Experiences, Geological Society of America *Abstracts with Programs*.
- Ward, E.M.G.**, Semken, S., and Libarkin, J., 2014, Cultural Validation in Practice: Valuing and Leveraging Place and Culture in Geoscience Assessment, Geological Society of America *Abstracts with Programs*.
- Berthelote, A.R., **Geraghty Ward, E.M.**, and Dalbotten, D.M., Broadening participation in Research Experiences for Undergraduates (REU) programs: an evaluation of the team research model for undergraduate research experiences, American Geophysical Union, *abstract id. ED44A-06*.
- Ward, E.M.G.**, Anderson, T., Hoensch, U., Kalakay, T., Lyman, J., Ostovar, K., Sjostrom, D, and Ward, L., 2014, The Yellowstone River Research Center: A Model for Undergraduate Research at Small Institutions: Geological Society of America *Abstracts with Programs*. Vol. 46, No. 5, p.75
- Ward, E.M.G.**, Semken, S., and Libarkin, J.C., 2014, Designing place-based, culturally informed geoscience assessment: Geological Society of America *Abstracts with Programs*. Vol. 46, No. 5, p.77.
- Bueno Watts, N., Smythe, W., **Geraghty Ward, E.M.**, Green, V., Tano, M., Berthelote, A.R., and Dalbotten, D., 2013, Geoscience Alliance: Building Capacity to Use Science for Sovereignty in Native Communities. Geological Society of America *Abstracts with Programs*.
- Martin, N., Libarkin, J.C., **Geraghty Ward, E.M.**, and Jardeleza, S., 2013, Unintended Cuing in Test Design: College Student Data and Spatial Analysis of Eye Tracking. North-Central Section of the Geological Society of America *Abstracts with Programs*.
- Lang, N.P., Lang, K.T., **Ward, E.M.G.**, 2012, Google Earth vs. air photo stereopairs: Which is more effective when learning geomorphology? Geological Society of America *Abstracts with Programs*.
- Ward, E.M.G.**, Semken, S., and Libarkin, J.C., 2011, Collaborative development of place-based, culturally informed geoscience assessment: Geological Society of America *Abstracts with Programs*, Vol. 43, No. 5, p. 75.
- Ward, E.M. Geraghty**, Libarkin, J.C., 2010, Temporal signatures of geological working memory: Geological Society of America *Abstracts with Programs*, Vol. 42, No. 5, p. 189
- Drost, R.E., **Ward, E.M. Geraghty**, Libarkin, J.C., 2010, The role of emotion during geologic field mapping: relationships between emotion, performance, and demographics: Geological Society of America *Abstracts with Programs*, Vol. 42, No. 5, p. 586

- Momsen, J.L., Clark, S., Haudek, K., **Geraghty Ward, E.**, Schramm, J.W., Doherty, J.H. and Vergara, C. 2010, Lost in translation: Quantifying the overlap of popular media and non-majors science course assessment vocabulary: Oral presentation for the Ecological Society of America Annual Meeting, Pittsburg, Pennsylvania.
- Ward, E.M. Geraghty** and Libarkin, J.C., 2010, The GCI WebCenter: A tool for community-wide concept inventory development: Poster presentation for Michigan State University Scholarship of Teaching and Learning Symposium.
- Ward, E.M. Geraghty**, 2009, The GCI WebCenter: A tool for community-wide concept inventory development: Geological Society of America *Abstracts with Programs*, Vol. 41, No. 7, p. 27.
- Geraghty Ward, E.M.**, 2008, Geoscience education and the cultural landscape: An adapted framework for professional development workshops, Blackfeet Reservation, northwest Montana: Space Science Institute, Boulder, Colorado.
- Geraghty Ward, E.M.** and Weatherwax, C., 2007, The effect of field workshops on teachers' utilization of outdoor education: Results from a summer workshop focused on Blackfeet culture and earth science, Blackfeet Reservation, Montana: National Association of Geoscience Teachers North Central Section Meeting Program with Abstracts.
- Roberts, Sheila and **Ward, E.M.G.**, 2007, Field guide to a photo-journal workshop, Eastern Pioneer Mountains: National Association of Geoscience Teachers North Central Section Meeting Program with Abstracts, p. 9-11.
- Roberts, Sheila, **Ward, E.M.G.**, and Neill, Ashley[#], 2007, Photo-journal project focuses students in the Field: National Association of Geoscience Teachers North Central Section Meeting Program with Abstracts, p. 4.
- Geraghty Ward, E.**, 2007, Development of the Rocky Mountain Foreland Basin: Geology, Oil and the Blackfeet Reservation, Rocky Mountain Thrust Front, Northwest Montana: University of Montana Western Department of Environmental Sciences speaker session "On the Rocks".
- Geraghty Ward, E.M.**, 2006, Preparing graduate students in science for science education research: A geology student's perspective from professional development work on the Blackfeet Reservation, Montana: School Science and Math Association National Convention, Missoula, Montana.
- Geraghty Ward, E.M.**, 2006, The effect of field workshops on teachers' utilization of outdoor education: Results from a summer workshop focused on Blackfeet culture and earth science, Blackfeet Reservation, Montana: School Science and Math Association National Convention, Missoula, Montana.
- Geraghty, E.M.** and Brown, B.J., 2005, Integrating outdoor activities into the FOSS curriculum: Effect on teacher practices on the Blackfeet Indian Reservation, Montana: National Science Foundation Center for Learning and Teaching Conference, Washington D.C.
- Geraghty, E.** and Brown, B., 2004, Integrating outdoor activities into the FOSS curriculum: Effect on teacher practices on the Blackfeet Indian Reservation, Montana, *Eos Trans.*, American Geophysical Union, 85(47), Fall Meeting Supplement, Abstract ED51B-0016, San Francisco, California.
- Geraghty, E.M.** and Sears, J.W., 2004, Middle Jurassic Forebulge Migration, Northern Montana Rockies: Evidence From Karstified and Sand-filled Extensional Fracture Sets, Geological Society of America *Abstracts with Programs*, Vol. 36, No. 5, p. 208.
- Geraghty, E.** and Flowers, L., 2004, Integrating outdoor science into the FOSS curriculum: Montana Education Association-Montana Federation of Teacher (MEA-MFT) Educators' Conference, Helena, Montana.
- Geraghty, E.M.** and Sears, J.W., 2004, Jurassic-aged Fractures and Grikes in Mississippian Carbonate: A Re-evaluation of Fracture, Fold, and Thrust Relationships and the Implications for Fractured Hydrocarbon Reservoirs, Rocky Mountain Thrust Front, Montana: Rocky Mountain Natural Gas 2004-Rocky Mountain Section of the AAPG Meeting, Denver, Colorado.
- Geraghty, E.** and Portner, R., 2003, Strain Analysis and Kinematic History of the Lewis and Clark Line, St. Regis Montana, Belt Symposium IV: Northwest Geology, v. 32, p. 196-198.
- Geraghty, E.M.** and Sears, J.W., 2003, Jurassic Joints in Mississippian Carbonate, Rocky Mountain Thrust Front, Montana: Implications For Fractured Hydrocarbon Reservoirs, Geological Society of America-Rocky Mountain Section Meeting, Durango, Colorado.
- Geraghty, E.M.** and Watkinson, A.J., 2002, Reactivated Mesoscale Structures Along the Lirou Fault, Languedoc, France, *Eos Trans.*, American Geophysical Union, 83(47), Fall Meeting Supplement, Abstract T51C-1173, San Francisco, California.

Geraghty, E.M. and Watkinson, A.J., 2002, Reactivation of bedding-planes within carbonate thrust sheets, Sun River Canyon, Sawtooth Range, northwestern Montana: American Association of Petroleum Geologists-Rocky Mountain Section Meeting, Laramie, Wyoming.

Geraghty, E.M., Carson, R.J., Bilderback, E.L., and Morriss, D.W., 1999, Pleistocene Elkhorn (Icecap?), northeastern Oregon: Northwest Scientific Association 1999 Annual Meeting, Tacoma, Washington, p. 33.

#denotes student author

HONORS AND AWARDS (post-B.A. degree)

- **2017 Iris Moreno Totten Geoscience Education Research Award (Geological Society of America-Geoscience Education Division Award)**
- **2014 GSA-ExxonMobil Field Award Recipient**
- **Outstanding Teaching Award for Introduction to Geology**, University of Montana Western (Spring 2007)
- **National Science Foundation Doctoral Fellowship**, Center for Learning and Teaching West (2002-2007)
- **National Science Foundation Graduate Research Fellowship**, Experimental Program to Stimulate Competitive Research (EPSCoR) (2002-2004)
- **Norman H. Foster Memorial Scholarship**, Rocky Mountain Association of Geologists Foundation (Spring 2005): One of two awards offered to graduate students conducting creative research in applied petroleum geology in the Rocky Mountain Region.
- **Northern Rockies Prospector Scholarship**, Tobacco Root Geological Society (Summer 2004)
- **University of Montana Scholarships (Ph.D.)**
 - Outstanding Graduate Student Presentation: UM College of Arts and Science Graduate Student and Faculty Research Conference (Spring 2004)
 - Bertha Morton Scholarship (2003-2004 Academic year)
- **Washington State University Scholarships (M.S.)**
 - W. Frank Scott Endowment Award: Stratigraphy/Sedimentology Field Scholarship
 - College of Science and Department of Geology Minigrants
 - Graduate Professional and Student Association Grant

PROFESSIONAL MEMBERSHIPS AND SERVICE

Professional Affiliations

Geological Society of America
National Association of Geoscience Teachers
American Geophysical Union
Geoscience Alliance
Council on Undergraduate Research
Tobacco Root Geological Society
Montana Geological Society

Professional Community Service

Member of Ad-Hoc Committee on Regional NAGT Sections (2021)
NAGT-GER POD leader for NSF-funded project Unlearning Racism in Geoscience (URGE) (2021)
Session Co-Chair- Making Sense of Methodologies and Theoretical Frameworks in Geoscience Education Research Geological Society of America National Conference (2021)
National Association of Geoscience Teachers (NAGT)-Geoscience Education Research (GER) Division- (Past Pres 2021-present, Pres 2020-2021, VP 2019, Media Director 2018)
Undergraduate Field Experience Research Network (U-FERN) Steering Committee 2021, Sustainability Committee 2020
National Science Foundation Panel Reviewer 2020
Session Co-Chair-Making Sense of Methodologies and Theoretical Frameworks in Geoscience Education Research Geological Society of America National Conference (2019)
Geoscience Alliance Conference Planning Committee 2019
Peer Reviewer for Journal of Geoscience Education, School Science and Mathematics, Frontiers Journal

Session Chair-Field-based Research Experiences for Undergraduates Rocky Mountain Section of the Geological Society of America (2014)

Associate Editor for Research for the Journal of Geoscience Education (2012)

Session Chair-Geoscience Education: Geological Society of America National Conference (2009)

Regional and Local Community Service

Tobacco Root Geological Society Board Member (2012-present)

Tobacco Root Geological Society Corresponding Secretary (2003-2006, 2012-2018)

ExxonMobil Community Advisory Panel (2013-2015)

Conference coordinator for Tobacco Root Geological Society Field Conference (Summer 2005)

Student Representative, Departmental Faculty Search Committee, University of Montana (2004)

Service to Rocky Mountain College

Chair of the Science and Math Division (2020-present)

Assessment Committee, Rocky Mountain College (2014-2021) (Chair from 2014-2018, 2019-2021)

Co-organizer and Evaluator of RMC Annual Student Symposium (2017-2019)

Science Education Enhancement and Development (SEED) Program, Advisory Panel, Rocky Mountain College (2013-2017)

Common Read Selection Committee, Rocky Mountain College (2012-2016)

Faculty Director of the Yellowstone River Research Center at Rocky Mountain College (2012)

WORKSHOPS, WEBINARS, SHORT COURSES, AND FIELD TRIPS

(Upcoming) Co-organizer Scientific Session at AAAS 2022 Annual Meeting, Undergraduate Field Education: An Evidence-Informed Vision for Inclusion (February 2022)

Invited NSF-RCN Participant, River Rendezvous in the Wild and Scenic Rogue River Watershed, Oregon (October 2021)

Co-author on panel discussion theme: Defining the Undergraduate Field Experience: Creating an Inclusive Experience in Ecology and the Geosciences with hosts Nia Morales and Kari O'Connell at the 2021 Organization of Biological Field Stations Annual Meeting (September 2021)

Field trip leader and guest speaker, Geology of the southern Pryor Mountains, WY, Red Lodge Natural History Institute (July 2021)

Co-facilitator, 2021 U-FERN Virtual Network Meeting (March 2021)

Invited Participant, BIOME Institute 2020, [Assessment of CUREs Working Group](#) (Fall semester 2020)

Co-presenter, Webinar: Assessing the success of an RCN, NSF RCN River-based Immersive Education & Research Field Studies Network Meeting (September 2020)

Co-facilitator, Workshop: Understanding and Evaluating Outcomes of Undergraduate Field Experiences, Organization of Biological Field Stations 55th Annual Meeting, Virtual Conference (September 2020)

Co-leader, Virtual Roundtable Discussion, Place-based Teaching, Annual Earth Educator Rendezvous Online Meeting (July 2020)

Meeting Participant (Selected campus representative), Assessment Essentials: Assuring Standards of Educational Effectiveness and Quality Improvement, American Association of Colleges and Universities (AAC&U), Portland, Oregon (October 2019)

Invited Participant, Annual Network Meeting of the Undergraduate Field Experiences Research Network (U-FERN), H.J. Andrews Experimental Forest near Blue River, OR (October 2019)

Professional Development Facilitator, K-12 Earth Science Teacher Workshop, Yellowstone Bighorn Research Association (July 2019)

Field trip leader, Geology along the Shoshone River Valley Cody to Pahaska Tepee WY, Red Lodge Natural History Institute (June 2019)

Invited Webinar Speaker, Undergraduate Field Experiences Research Network (U-FERN), Using place-based, community-inspired research to broaden participation in the geosciences (Nov 2018)

Invited Participant, Levers for Change Meeting, American Association for the Advancement of Science (AAAS), Howard Hughes Medical Institute (HHMI) Headquarters, Bethesda, Maryland (May 2018)

- Meeting Participant (Selected campus representative), General Education and Assessment: Foundations for Democracy, American Association of Colleges and Universities (AAC&U), Philadelphia, Pennsylvania (February 2018)
- Participant, Terrestrial Laser Scanning (TLS) Processing and Data Products Short Course, UNAVCO, Boulder, Colorado (October 2017)
- Field trip co-leader, Structural Geology of the Pryor Mountains, south-central Montana, Rocky Mountain Section of the AAPG Conference, Billings, Montana (June 2017)
- Invited Participant, Geoscience Education Research Community Planning Workshop, Earth Educators Rendezvous, Madison, Wisconsin (July 2016)
- Invited Participant, Synthesizing Geoscience Education Research, Earth Educators Rendezvous, Boulder, Colorado (July 2015).
- Invited Workshop Participant and Panel Participant, ENGAGE Workshop: Encouraging Networks Between Geoscience and Geoscience Education, Arlington, VA (January 2015)
- Workshop Facilitator, Writing Workshop for Place-based Geoscience Assessment, Arizona State University (June 2014)
- Creating Surveys to Measure Performance and Assess Needs, American Evaluation Association eStudy Workshop Series Participant (June 2013)
- Workshop Facilitator, Writing Workshop II for Place-based Geoscience Assessment, Blackfeet Community College (May 2013)
- Workshop Facilitator, Place-based assessment design, Blackfeet Community College (November 2011)
- Workshop Facilitator, Place-based assessment of learning outcomes, Blackfeet Community College (May 2011)
- Evaluation in Informal Learning Environments Workshop Participant, Michigan State University (2011)
- Process Evaluation: Evaluating Program Implementation and Fidelity Workshop Participant, Michigan State University (2010)
- Workshop Series Participant for Responsible Conduct of Research, Michigan State University (2009-2010)
- 14th Annual Science, Technology, Engineering and Mathematics Education Scholars (STEMES) Program Participant: Connecting the Dots: Aligning Course Objectives, Assessments, and Activities to Enhance Learning in STEM Courses, Michigan State University (May 2010)
- Professional Development Workshop Facilitator, Blackfeet Culture and Outdoor Science Classroom: Center for Learning and Teaching West and Rural Systemic Initiative, Browning, MT (July 2006)
- Blackfeet Education Conference Participant: Special Focus on Indian Education for All Act and Blackfeet Education Standards, Browning, MT (March 2006)
- Thrust Belt Geology, Exploration and Production Short Course Participant: Rocky Mountain Association of Geologists, Denver, CO (January 2006)
- Field trip co-leader and leader, Revisiting the Structure and Stratigraphy of the Sun River Canyon, Sawtooth Range, Montana and Jurassic-aged fractures and grikes in Mississippian carbonate, Montana Thrust Belt (August 2005)
- Middle School FOSS Institute Participant: National Science Teachers Association Convention, Dallas, TX (March 2005)
- Professional Development Workshop Facilitator, FOSS kit curriculum: Center for Learning and Teaching West and Rural Systemic Initiative, Browning, MT (October 2004)