

# Rachel E. Breunig

Curriculum Vitae  
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(832)-275-1375

## EDUCATION

University of Wisconsin-Madison	PhD Student in Geosciences Thesis: <i>Constraining subsurface critical zone structure in transient topography</i> Advisors: Ken Ferrier, Michael Cardiff	Aug.2020-Present GPA: <b>4.00</b>
The University of Texas at Austin, Jackson School of Geosciences	B.S. Environmental Science, Geology with High Honors Thesis: <i>Evaluating chemical depletion as a weathering indicator in heterogeneous, sedimentary systems</i> Advisor: Dr. Daniella Rempe	May 2020 GPA: <b>3.89</b>

## HONORS, AWARDS, & LEADERSHIP

University of Wisconsin Association of Women Geoscientists President	Spring 2021-Present
University of Wisconsin Geoscience Graduate Student Assn. Student Ombud	Spring 2021-Present
Jackson School of Geosciences Professional Networking/ Portfolio Contest Awardee	Spring 2020
Wayne Franklin Bowman Endowed Presidential Scholarship	Spring 2020
Sabina Elizabeth Endowed Presidential Scholarship in Quantitative Earth Sciences	Fall 2019
Bloomer Fund for Motivated and Late Bloomer Students	Fall 2019
Robert H. Cuyler Endowed Presidential Scholarship	Fall 2019
F. W. Simonds Endowed Presidential Scholarship	Fall 2019
Vincent R. DeNino Endowed Scholarship	Fall 2019
University of Texas College Scholar, Jackson School of Geosciences	2018-2020
John H. and Luzja McCammon Endowed Scholarship	Spring 2019
Anne and Henry Hamman Scholarship in Geoscience	Spring 2019
Carroll C. Miller Endowed Presidential Scholarship	Fall 2018
Lee and Joe Jamail Endowed Presidential Scholarship	Fall 2017, Fall 2018
Undergraduate Scholarship to Support Geoscience Students	2018
Greater Texas Foundation Endowed Scholarship in Geosciences	2018
Section Leader, University of Texas Longhorn Band	2017-2020
University Honors, University of Texas at Austin	Fall 2016- Spring 2020
Ben Garcia Memorial Purple Monkey Scholarship	Spring 2016
Girl Scout Gold Award	2015

## PUBLICATIONS

- (1) Pedrazas, M.A., Hahm, W.J., Huang, M-H., Dralle, D., Nelson, M.D., **Breunig, Rachel E.**, Fauria, K.E., Bryk, A.B., Dietrich, W.E., and D.M. Rempe, 2021, *The relationship between topography, bedrock weathering, and water storage across a sequence of ridges and valleys*. Journal of Geophysical Research: Earth Surface. DOI: 10.1029/2020JF005848.

## GRANTS

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The University of Texas at Austin Green Fund, Project: Waste Free LHB. (Project lead). \$5,683, 2018-2019.

## PRESENTATIONS/ SCIENCE COMMUNICATION

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- (6) **Breunig, Rachel E.**, Pedrazas, M.A., Fisher, C., and D.M. Rempe, 2020, *Evaluating chemical depletion as a weathering indicator in heterogeneous, sedimentary systems*. 2020 Rancho Venada/ Antelope Valley Ranch Retreat 2020.
- (5) **Breunig, Rachel E.**, Pedrazas, M.A., Fisher, C., and D.M. Rempe, 2020, *Evaluating chemical depletion as a weathering indicator in heterogeneous, sedimentary systems*. 2020 Jackson School Research Symposium.
- (4) **Breunig, Rachel E.**, Gardiner, K., Lad, B., Montoux, I., and E.G. Ortiz, 2020, *Growing Pains: Triumphs and Trials of Student Sustainability Initiatives*. Texas Regional Alliance for Campus Sustainability Summit. (invited—conference cancelled for Covid-19)
- (3) **Breunig, Rachel E.** and E.G. Ortiz, 2019, *Green Offices on Tap*. University of Texas Sustainability on Tap.
- (2) **Breunig, Rachel E.** and A.M.K. Lassmann, 2019, *Project: Waste Free LHB—Zero Waste success in collegiate marching band*. University of Texas Sustainability on Tap.
- (1) **Breunig, Rachel E.** and A.M.K. Lassmann, 2018, *Zero Waste in the Longhorn Band*. University of Texas Sustainability Showcase.

## SKILLS

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- Proficient in Matlab, Python, Adobe Illustrator, Microsoft Excel, Hydrus 1D
- Familiar with Groundwater Vistas, PHREEQC, ArcGIS
- Intermediate Spanish proficiency, elementary French proficiency
- K-12 education

## WORK EXPERIENCE

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Department of Geoscience, University of Wisconsin-Madison Madison, WI  
Weeks/Senger Research Assistant Aug. 2020-Present

- Build datasets that address pointed research questions via laboratory analyses
- Produce high-quality communicative tools to effectively convey research results
- Maintain a safe and operational laboratory area

GeoFORCE Texas Austin, TX  
Summer Academy Educational Coach In Training Summer 2020

- Lead high school students through field experiences alongside GeoFORCE educational team
- Teach fundamental principles of geology to students via safe field practices
- Aid in activity design and curricula development

Critical Zone Laboratory, The University of Texas at Austin	Austin, TX
Undergraduate Researcher	2018-2020
<ul style="list-style-type: none"> <li>• Design and execute undergraduate research experiment</li> <li>• Utilize laboratory and field equipment to collect physical and chemical rock/soil data</li> <li>• Analyze, synthesize, and present data</li> </ul>	
Office of Sustainability, The University of Texas at Austin	Austin, TX
Intern/ Green Offices Leader	2018-2020
<ul style="list-style-type: none"> <li>• Evaluate sustainability of departmental offices on campus</li> <li>• Consult with University staff on environmentally, socially, and economically sustainable practices in office environments</li> <li>• Design and tailor attainable long-term and short-term goals for offices</li> <li>• Work jointly with Green Labs to help UT Austin labs become more sustainable</li> </ul>	
Longhorn Band Student Association	Austin, TX
Service and Sustainability Chair	2017-2019
<ul style="list-style-type: none"> <li>• Evaluate the sustainability of the largest student organization at the University of Texas</li> <li>• Write grant proposals, coordinate financial activities, and execute service and sustainability Projects</li> </ul>	
**Led Longhorn Band to its first waste free game in history	
Westside Tennis and Fitness	Houston, TX
Swim Instructor	Summer 2015-2020
<ul style="list-style-type: none"> <li>• Teach and tailor private, semiprivate, and group swim classes of all levels to children and adults</li> <li>• Plan and manage a dynamic lesson schedule, communicate with parents, and create a safe, positive, and fun learning environment for all involved</li> </ul>	

## **RELEVANT COURSEWORK**

Contaminant Hydrogeology, Groundwater Hydraulics & Modelling, Field and Stratigraphic Methods, Research Methods, Research Experience, Ecohydrology, Field Seminar in Sustainability, Geomorphology, Vadose Zone Hydrology (Unsaturated Soil Physics), Groundwater, Sedimentary Rocks, Physical & Chemical Hydrogeology, Physical Hydrology, Water & Watersheds, Environmental Geographic Information Systems, Quantitative Methods in Geoscience

## **ADDITIONAL AFFILIATIONS**

Association of Women Geoscientists	2021-Present
Geological Society of America	2020-Present
Geoscience Graduate Student Association	2020-Present
Phi Kappa Phi Honor Society	2020-Present
Undergraduate Geological Society	2016-2020
Tau Beta Sigma	2017-2020
The University of Texas Longhorn Band	2016-2020
The University of Texas Longhorn Pep Band	2017-2020