

DANIELLA M. REMPE

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CURRENT APPOINTMENTS

Assistant Professor, Department of Geological Sciences, University of Texas at Austin 2016-present
University Affiliate, Center for Space Research, University of Texas at Austin

EDUCATION

Ph.D. Earth and Planetary Science	University of California, Berkeley	2016
M.S. Environmental Engineering	University of California, Berkeley	2008
B.S. Geosystems Engineering and Hydrogeology	University of Texas at Austin	2007

HONORS & AWARDS

Billy Carr Distinguished Teaching Fellowship, <i>Environmental Science Institute, UT Austin</i>	2017-2018
Jackson School Service award to the DGS Faculty Women, <i>Jackson School of Geosciences</i>	2017
Department of Energy, Office of Science Graduate Fellowship, <i>U.S. DOE</i>	2010-2014
ExxonMobil SAGE Scholar, Graduate scholarship <i>ExxonMobil</i>	2010
Jane Lewis Graduate Fellowship, <i>University of California, Berkeley</i>	2008-2010

RESEARCH GRANTS AND FELLOWSHIPS

Pending

National Science Foundation , Frontier Research in the Earth System **2021**

"How vegetation connects solid earth and its atmosphere: mechanisms of water and carbon cycling in bedrock"

PI: Daniella Rempe, Co-PI: Jennifer Druhan (University of Illinois, Urbana Champaign), others

NASA , NSPIRES- Terrestrial Hydrology **2021**

"Constraining the contribution of bedrock to root-zone water availability and gross primary productivity using long-term satellite retrievals"

PI: Dana Chadwick, Co-PI: Daniella Rempe

National Science Foundation , Hydrologic sciences **2020**

Tracing the fate, age, and ecohydrologic significance of rock moisture

PI: Daniella Rempe, Co-PI: Ate Visser (Lawrence Livermore National Laboratory) Todd Dawson and William E. Dietrich (UC Berkeley)

Awarded

ExxonMobil Research and Engineering Company 2020-2022

Linking plant strategies to complex subsurface hydrology to predict ecosystem carbon storage across Texas

Co-lead PI: Daniella Rempe, Co-lead PI: Caroline Farrow, Co-PIs: Ashley Matheny, Tim Keitt, Amy Wolfe.

Total award: \$572,346 over 2 years

National Geospatial Intelligence Agency , Academic Research Program (NARP) **2019-2022**

Removing Sub-microGal Hydrologic Signals in Absolute Gravity Observations

PI: Daniella Rempe, Co-PI: Clark Wilson.

Total award: \$459,685 over 3 years

National Science Foundation University of Minnesota National Center for Earthsurface Dynamics 2: the past and future Earth) **2017–2018**

Channel network evolution in response to deglaciation: using optimality principle to test the influence of gradual vs. abrupt melting on network organization

PI: Zong-Liang Yang, **Co-PI: Daniella Rempe**, Co-PI: A. Abed-Elmdoust (postdoctoral fellow).

Total award: \$50,000

Department of Energy, Subsurface Biogeochemical Research, **2017-2019**

The weathered bedrock vadose zone: A hidden control on water availability in the western United States

PI: Daniella Rempe

Total award: \$220,000 over 2 years

PUBLICATIONS

PEER REVIEWED PUBLICATIONS AND MANUSCRIPTS IN PRESS

Google Scholar <https://scholar.google.com/citations?user=rjfXmv8AAAAJ&hl=en>

Orcid ID: 0000-0002-7621-8431

h-index = 10, 2 first-authored publications in PNAS, 3 advisee led publications, 3 publications with over 90 citations

Supervised students, postdocs, and researchers are italicized.

* denotes student led publications.

McCormick, Erica L (undergraduate)*; Dralle, David; Hahm, W Jesse; *Tune, Alison*; *Schmidt, Logan*; *Chadwick, K. Dana*; **Rempe, Daniella M. Evidence for widespread woody plant use of water stored in bedrock, In revision: *Nature*.

Golla, Jon; Kuessner, Marie; Henehan, Michael J; Bouchez, Julien; **Rempe, Daniella M**; Druhan, Jennifer. The evolution of lithium isotope signatures in fluids draining actively weathering hillslopes, In revision: *Earth and Planetary Science Letters*.

Dralle, David N; Hahm, W Jesse; *Chadwick, K. Dana*; *McCormick, Erica (undergraduate)*; **Rempe, Daniella M.** (2020). Accounting for snow in the estimation of root-zone water storage capacity from precipitation and evapotranspiration fluxes, In Revision: *Hydrology and Earth System Sciences Discussions (impact factor: 4.5)*: 1-9.

18. **Pedrazas, Michelle*; *Hahm, W Jesse*; Huang, M; Dralle, David; Nelson, Mariel; *Breunig, Rachel (undergraduate)*; Fauria Kristen; Bryk Alexander; William E. Dietrich, **Rempe, Daniella M.** Scale-dependence of bedrock weathering and water storage depths across a sequence of ridges and valleys, Accepted: *JGR Earth Surface*
17. *Tune, Alison K*; Druhan, Jennifer L; Wang, Jia; Bennett, Philip C; **Rempe, Daniella M.** (2020). Carbon Dioxide Production in Bedrock beneath Soils Substantially Contributes to Forest Carbon Cycling. *Journal of Geophysical Research: Biogeosciences (impact factor: 3.6)*. e2020JG005795.
16. *Hahm, W Jesse*; **Rempe, Daniella M.**; Dralle, David; Dawson, Todd; Dietrich, William. (2020). Oak Transpiration Drawn From the Weathered Bedrock Vadose Zone in the Summer Dry Season. *Water resources research (impact factor: 4.3)*. 56(11), e2020WR027419.
15. *Schmidt, Logan*; **Rempe, Daniella M.** (2020). Quantifying Dynamic Water Storage in Unsaturated Bedrock with Borehole Nuclear Magnetic Resonance. *Geophysical Research Letters (impact factor: 4.6)*. 47(22), e2020GL089600.

14. Dralle, David N; Hahm, W Jesse; **Rempe, Daniella M**; Karst, Nathaniel; Anderegg, Leander DL; Thompson, Sally E; Dawson, Todd E; Dietrich, William E. (2020). Plants as sensors: vegetation response to rainfall predicts root-zone water storage capacity in Mediterranean-type climates. *Environmental Research Letters* (impact factor: 6.2). 15(10), 104074.
13. Gu, Xin; **Rempe, Daniella M**; Dietrich, William E; West, A Joshua; Lin, Teng-Chiu; Jin, Lixin; Brantley, Susan L. (2020). Chemical reactions, porosity, and microfracturing in shale during weathering: The effect of erosion rate. *Geochimica et Cosmochimica Acta* (impact factor: 4.7). 269, 63-100.
12. Hahm, W Jesse; Dralle, David; **Rempe, Daniella M**; Bryk, Alexander; Thompson, Sally; Dawson, Todd; Dietrich, William. (2019). Low subsurface water storage capacity relative to annual rainfall decouples Mediterranean plant productivity and water use from rainfall variability. *Geophysical Research Letters* (impact factor: 4.6). 46(12), 6544-6553.
11. Hahm, W Jesse; **Rempe, Daniella M**; Dralle, David N; Dawson, Todd E; Lovill, Sky M; Bryk, Alexander B; Bish, David L; Schieber, Juergen; Dietrich, William E. (2019). Lithologically controlled subsurface critical zone thickness and water storage capacity determine regional plant community composition. *Water Resources Research* (impact factor: 4.3). 55(4), 3028-3055.
10. Richardson, Justin B; Aguirre, Arnulfo A; Buss, Heather L; Toby O'Geen, A; Gu, Xin; **Rempe, Daniella M**; Richter, Daniel de B. (2018). Mercury Sourcing and Sequestration in Weathering Profiles at Six Critical Zone Observatories. *Global Biogeochemical Cycles* (impact factor: 4.6). 32(10), 1542-1555.
9. Flinchum, Brady A; Holbrook, Steven W; **Rempe, Daniella M**; Moon, Seulgi; Riebe, Clifford S; Carr, Bradley J; Hayes, Jordan L; St. Clair, James; Peters, Marc Philip. (2018). Critical zone structure under a granite ridge inferred from drilling and three-dimensional seismic refraction data. *Journal of Geophysical Research: Earth Surface* (impact factor: 3.6). 123(6), 1317-1343.
8. Dralle, David N; Hahm, W Jesse; **Rempe, Daniella M**; Karst, Nathaniel J; Thompson, Sally E; Dietrich, William E. (2018). Quantification of the seasonal hillslope water storage that does not drive streamflow. *Hydrological processes* (impact factor: 3.3). 32(13), 1978-1992
7. **Rempe, Daniella M**; Dietrich, William E. (2018). Direct observations of rock moisture, a hidden component of the hydrologic cycle. *Proceedings of the National Academy of Sciences* (impact factor: 9.4). 115(11), 2664-2669.
6. Druhan, Jennifer L; Fernandez, Nicole; Wang, Jia; Dietrich, William E; **Rempe, Daniella M**. (2017). Seasonal shifts in the solute ion ratios of vadose zone rock moisture from the Eel River Critical Zone Observatory. *Acta Geochimica* (impact factor: 1.1). 36(3), 385-388.
5. Wymore, Adam S; West, Nicole R; Maher, Kate; Sullivan, Pamela L; Harpold, Adrian; Karwan, Diana; Marshall, Jill A; Perdrial, Julia; **Rempe, Daniella M**; Ma, Lin. (2017). Growing new generations of critical zone scientists. *Earth Surface Processes and Landforms* (impact factor: 4.7). 42(14), 2498-2502.
4. **Rempe, Daniella M** and Dietrich, William E.: (2014) A bottom up approach to determining fresh bedrock topography under landscapes, *Proceedings of the National Academy of Sciences* (impact factor: 9.4). 111(18), 6576-6581.
3. Salve, R. and **Rempe, Daniella M** (2013) Backfill Impacts on Moisture Measurements in Fractured Rock, *Vadose Zone Journal* (impact factor: 2.5). 12, 1-9.
2. Simonin, K. A., Link, P., **Rempe, Daniella M**, Miller, S., Oshun, J., Bode, C., Dietrich, W.E., Fung, I. Dawson, T. E. (2013). Vegetation induced changes in the stable isotope composition of near surface humidity, *Ecohydrology* (impact factor: 2.8). 7, 936-949.
1. Salve, R., **Rempe, Daniella M**, and Dietrich, W. E. (2012). Rain, rock moisture dynamics, and the rapid response of perched groundwater in weathered, fractured argillite underlying a steep hillslope, *Water Resources Research* (impact factor: 4.3). 48(11).

OTHER PUBLICATIONS

3. *Mungia, Zachary (undergraduate); Minton, Brandon; Schmidt, Logan; Hahm, W Jesse; Rempe, Daniella M*, Investigating water storage in a shale bedrock vadose zone in a montane conifer forest, Slate River, Colorado, Accepted: SEG Technical Program Expanded Abstracts 2019.
2. **Rempe, Daniella M**; *Schmidt, Logan; Hahm, W Jesse*. In-situ nuclear magnetic resonance detection of fracture-held water in variably saturated bedrock, Accepted: SEG Technical Program Expanded Abstracts 2018.
1. **Rempe, Daniella M**. (2016) Controls on critical zone thickness and hydrologic dynamics at the hillslope scale. *Dissertation: University of California, Berkeley*.

TEACHING AND CURRICULUM DEVELOPMENT

University of Texas at Austin, Department of Geological Science

GEO 346C Introduction to Physical and Chemical Hydrogeology Undergraduate (Quantitative Reasoning flag)
 Taught S2017; Enrollment 23; Overall instructor rating: 4.8/5.0; Overall course rating: 4.5/5.0
 Taught S2018; Enrollment 26; Overall instructor rating: 4.8/5.0; Overall course rating: 4.4/5.0
 Taught F2018; Enrollment 37; Overall instructor rating: 4.7/5.0; Overall course rating: 4.3/5.0
 Taught F2019; Enrollment 39; Overall instructor rating: 4.5/5.0; Overall course rating: 4.1/5.0

GEO 376S/382S Physical Hydrology Undergraduate/Graduate (Quantitative Reasoning flag)
 Taught F2020 (Online); Enrollment: 24; Overall Instructor Rating: 4.4/5.0; Overall Course Rating: 4.2/5.0
 Taught F2017; Enrollment: 29; Overall Instructor Rating: 4.4/5.0; Overall Course Rating: 4.0/5.0

GEO 376L Field Methods in Groundwater Hydrology
 Co-Taught May 2017; Enrollment: 14; Overall instructor rating: 4.8/5.0; Overall course rating: 4.8/5.0
 Co-Taught May 2018; Enrollment: 12; Overall instructor rating: 4.9/5.0; Overall course rating: 4.8/5.0

GEO 371/391 Vadose Zone Hydrology Undergraduate/Graduate (Quantitative Reasoning flag)
 Taught S2019; Enrollment: 22; Overall instructor rating: 4.4/5.0; Overall course rating: 4.1/5.0

GEO 303: Introduction to Geology
 Co-Taught S2020; Enrollment: 262; Overall instructor rating: 4.2/5.0; Overall course rating: 4.3/5.0

Guest lectures and other teaching

GEO 114G Geophysics Colloquium	2018-2020
GEO 371/391 Ecohydrology	2018
GEO 191 Preparing future geoscience faculty	2018,2020

RESEARCH MENTORSHIP

Advisee Honors and Awards

Alison Tune, <i>First Place Poster Presentation, Soil Chemistry Division, SSSA Annual Meeting</i>	2020
Alison Tune, <i>Soil Science Society of America Outstanding Student Presentation Award</i>	2020
Alison Tune, <i>DOE Environmental System Science (ESS) PI Meeting Student Travel Fellowship</i>	2020
Alison Tune, <i>First Place Poster Presentation, Soil Chemistry Division, SSSA Annual Meeting</i>	2019
Logan Schmidt <i>Endowed Presidential Scholarship</i>	2018
Logan Schmidt <i>Geological Society of America Student Research Grant, Outstanding Mention</i>	2018
Alison Tune, <i>National Science Foundation Graduate Research Fellowship</i>	2018-2020
Shawn Lee, <i>American Geophysical Union, Hydrology, Outstanding Student Presentation Award</i>	2017
Alison Tune, <i>Geological Society of America Student Research Grant, Outstanding Grant Award</i> ,	2017

Armaghan Abed-Elmdoust, <i>National Center for Earth Surface Dynamics 2 Post-doctoral fellow</i>	2018-2019
Caroline Hackett, <i>Ozarka "Every drop counts" Scholarship,</i>	2016
Caroline Hackett, <i>Texas American Water Works Association Capital Area Chapter Scholarship</i>	2016

Post-doctoral

W. Jesse Hahm (UT-JSG) - <i>Current Assistant Prof (Simon Fraser U)</i>	2019
Armaghan Abed-Elmdoust (UT-JSG) - <i>now at Jupiter Intelligence</i>	2018
Co-supervisor: Zong-liang Yang	

Doctoral

Supervisor

Alison Tune (UT-JSG) - <i>Current PhD student</i>	PhD candidate
Logan Schmidt (UT-JSG) - <i>Current PhD student</i>	PhD candidate

Committee Member

Sabiha Tabassum (UT-JSG)	PhD candidate
Wen-Ying Wu (UT-JSG)	PhD candidate
Justin Thompson (UT-JSG)	PhD candidate
Estefania Salgado Jauregui (UT-JSG)	PhD candidate
Evan Ramos (UT-JSG)	PhD candidate
Hima J. Hassenruck-Gudipati (UT-JSG)	PhD candidate
Stephen Ferencz (UT-JSG) - <i>Now Postdoc at Sandia National Laboratories, Energy Water Group</i>	2020
Michael O'connor (UT-JSG)- <i>Now Congressional Science Technology Policy Fellow</i>	2019
Max Daniller-Varghese (UT-JSG) - <i>Now Remote Sensing Data Scientist at the Applied Research Laboratories, The University of Texas at Austin</i>	2019
Charles Abolt (UT-JSG) - <i>Now Postdoctoral Researcher at Los Alamos National Laboratory</i>	2019
Allan Jones (UT-JSG)	2017

Committee Member, Other University

Kelsey Crutchfield-Peters (University of California, Berkeley) - <i>Current PhD student</i>	
W. Jesse Hahm (University of California, Berkeley) - <i>Now Assistant Professor (Simon Fraser University)</i>	2019

Examining Committee Member

Sinjini Sinha (UT-JSG)	PhD student
Gabriel Tagliaro (UT-JSG)	2018

Masters

Supervisor or Co-supervisor

Michelle Pedrazas Jinojosa (UT-JSG) - <i>Now Groundwater modeler at INTERA Incorporated</i>	2020
Thesis: Patterns of weathering in sedimentary bedrock across a sequence of repeating ridges and valleys	
Paul Southard (UT-JSG)	2019
Co-supervisor: Joel Johnson	
Thesis: Impact of spring-associated riparian vegetation on channel morphology: insights from Henry Mountains, UT	
Caroline Hackett (UT-JSG) - <i>Now Hydrologist at State Water Resources Control Board</i>	2018
Co-supervisor: Marcus Gary	
Thesis: Storage dynamics of the upper Nueces River alluvial aquifer: Implications for recharge to the Edwards Aquifer, Texas	
Shawn Lee (UT-JSG)- <i>Now Engineering Scientist Associate, Applied Research Laboratories</i>	2019
Thesis: Spatial patterns of bedrock weathering at the hillslope scale inferred via drilling and multi-scale geophysical methods	

Committee Member

Austin Rechner (UT-JSG) - 2020 Micaela Pedrazas (UT-JSG) - *Now Hydrogeologist at LRE Water* 2020

Undergraduate

Thesis or Capstone Supervisor

Ryan Nanowsky (UT-JSG) - *Undergraduate* 8/18 - Present
 Thesis: The potential fractionation of stable water isotopes within Douglas Fir trees
 Rachel Breunig (UT-JSG) - *now Graduate student, University of Wisconsin* 12/18 - 5/20
 Thesis: Evaluating chemical depletion as a weathering indicator in heterogenous sedimentary systems

Honors Thesis Committee Member

Carolyn Bland (UT-JSG) - *Current undergraduate* 2020
 Thesis Supervisor: Dan Breecker
 Christian Roumelis (UT-JSG) - *now Geologist (GSI Environmental)* 2019
 Thesis Supervisor: Bayani Cardenas
 Kindra Nicholaides (UT-JSG) - *now Hydrogeologist (Southwest Research Institute)* 2017
 Thesis Supervisor: Bayani Cardenas
 Sebastian Munoz (UT-JSG) - *Current undergraduate* 2017
 Thesis Supervisor: Bayani Cardenas

Research supervisor

Erica McCormick (UT-JSG) - *now Lab assistant (Rempe Lab)* 2019, 2020
 Zachary Mungia (UT-JSG) 2018,2019
 Chloe Fisher (UT-JSG) - *now Environmental Consultant (Antea Group)* 2018,2019
 Yinuo Wang (UT-JSG) - *now Graduate student (Texas A&M)* 2018
 Beth Wigton (UT-Env Eng)- *Undergraduate* 2019
 Nicholas Soto-Kerans (UT-JSG) - *now Graduate student (University of South Florida)* 2017
 Amy De Luna (UT-JSG) - *now Data Analyst (Texas Water Development Board)* 2017
 Kelly Malone (UT-JSG) - *now Hydrogeologist (Golden)* 2019
 Neeraja Setlur (UT-JSG) - *now Geoscientist (ExxonMobil)* 2018
 Matan Brickman (UT-Natural Sciences) - *now medical school student* 2018

Research Staff

Research Associates

Name	Date of Supervision	
Dana Chadwick (<i>UT-JSG</i>)	2021-Present	EM funded

Research Technician

Name	Date of Supervision	Organization	Current Status
Erica McCormick (<i>UT-JSG</i>)	2021-Present	Rempe lab	
Maryn Sanders (<i>UC Berkeley</i>)	2019-Present	Eel River CZO	
Hunter Jamison (<i>UC Berkeley</i>)	2019-Present	Eel River CZO	
Mariel Nelson (<i>UT-JSG</i>)	2019-2020	Rempe lab	Ph.D. student (<i>UT-JSG</i>)
Mariel Nelson (<i>UC Berkeley</i>)	2018-2019	Eel River CZO	Ph.D. student (<i>UT-JSG</i>)
Gunnar Reith (<i>UC Berkeley</i>)	2019-2020	Eel River CZO	grad student (<i>Utrecht U (Netherlands)</i>)
Brandon Minton (<i>UT-JSG</i>)	2016-2018	Rempe lab	Research scientist (<i>UT-JSG</i>)
William Speiser (<i>UC Berkeley</i>)	2018-2019	Eel River CZO	grad student (<i>UC Davis</i>)
Marshall Wolf (<i>UC Berkeley</i>)	2017-2018	Eel River CZO	grad student (<i>Utah State</i>)
Colleen Murphy (<i>UC Berkeley</i>)	2017-2018	Eel River CZO	grad student (<i>UC Santa Cruz</i>)
Jenna Weiner (<i>UC Berkeley</i>)	2016-2017	Eel River CZO	grad student (<i>UNR</i>)
Sami Cargill (<i>UC Berkeley</i>)	2015-2017	Eel River CZO	grad student (<i>U Oregon</i>)

PRESENTATIONS

INVITED TECHNICAL LECTURES

12 invited technical lectures since 2016.

Oakridge National Laboratory Environmental Sciences Division	2021
Karst Critical Zone Research Coordination Network, Invited keynote	2020
University of Southern California, Department of Earth Sciences	2020
Rice University, Department of Earth, Environmental, and Planetary Sciences	2020
University of Nevada, Reno, Department of Geological Sciences and Engineering	2020
Texas A&M, Biological and Agricultural Engineering Department	2019
University of Florida, Soil and Water Sciences Department, Distinguished Speaker	2019
Texas A&M, Department of Ecosystem Science & Management	2019
Baylor University, Department of Geosciences	2018
Colorado School of Mines, Dept of Geology and Geological Engineering, Van Tuyl Lecture	2018
Pennsylvania State University, Department of Geosciences	2017
University of Illinois, Urbana-Champaign, Department of Geology, Buckley Lecture	2017
University of Texas at Austin, Bureau of Economic Geology Seminar Series	2017
Purdue University, Department of Earth Atmospheric and Planetary Sciences	2016
University of Texas at Austin, Department of Geological Sciences	2016
University of California, Riverside, Department of Geology	2015
USGS, Unsaturated Zone Interest Group	2015
University of Wyoming, Department of Geophysics	2014

CONFERENCE PRESENTATIONS

* Invited

2020

American Geophysical Union Fall Meeting - Spatial Variation in Bedrock Weathering Under a sequence of ridges and valleys in the Great Valley Sequence of Northern California revealed through geophysics and deep drilling. B Hudson-Rasmussen, MA Pedrazas, WJ Hahm, AB Bryk, KE Fauria, MD Nelson, D Dralle, WE Dietrich, **DM Rempe**, M Huang.

*American Geophysical Union Fall Meeting - How limited belowground water storage can shield forests from drought. **DM Rempe**.

American Geophysical Union Fall Annual Meeting - Nitrogen cycling beneath the soil: bioavailable nitrogen dynamics in a bedrock rhizosphere. K Crutchfield-Peters, A Tune, **DM Rempe**, T Dawson.

American Geophysical Union Fall Meeting - Respiration in a shale rhizosphere dominated by deep root respiration, not oxidation of petrogenic organic carbon. K Tune, J Druhan, C Lawrence, Y Liu, P Bennett, **DM Rempe**.

Ecological Society of America Annual Meeting - Dynamic bioavailable N in a deep unsaturated zone shows evidence of N cycling and potential plant and microbe use. K Crutchfield-Peters, A Tune, **DM Rempe**, T Dawson

Intelligence Community Academic Research Symposium (ICARS) - Sources of Small-Scale Gravity Variations at a Coastal Site. C Linick, C Wilson, **DM Rempe**.

2019

*American Geophysical Union Fall Meeting - Progress and challenges in investigating the fate of water stored in the fractured bedrock vadose zone, **DM Rempe**.

AAPG Annual Convention - Fractured Bedrock Hydrogeologic Characterization Using Digital Rock Physics. *E Goldfarb, L Schmidt, K Ikeda, O Alamoudi, **DM Rempe**, N Tisato.*

2018

American Geophysical Union Fall Meeting - A Graph-Theoretic Approach for Population Transport on River Networks. A Abed-Elmdoust, **DM Rempe**, ZL Yang.

American Geophysical Union Fall Meeting Abstracts - A Model of Shale Weathering at the Eel River-CZO Constrained by High Resolution Spatiotemporal Observations of Solute and Gas Profiles Across the Vadose Zone. JJ Wang, *AK Tune*, **DM Rempe**, JL Druhan.

American Geophysical Union Fall Meeting - Stable isotopes in oaks reveal progressive unexpected shift toward isotopically lighter rock moisture source during summer dry out of the critical zone. *WJ Hahm, WE Dietrich, TE Dawson, **DM Rempe**, D Dralle.*

American Geophysical Union Fall Meeting - Hydrologic regulation of vadose zone oxygen dynamics in fractured bedrock. *L Schmidt, AK Tune, JJ Wang, JL Druhan, **DM Rempe**.*

American Geophysical Union Fall Meeting - Impact of spring-associated riparian vegetation on channel morphology and sediment distribution in ephemeral dryland channels: Henry Mountains, Utah, USA. *P Southard, JP Johnson, **DM Rempe**, AM Matheny.*

American Geophysical Union Fall Meeting - Quantifying Spatial Patterns of Hyporheic Exchange in a Floodplain Meander System via High-Resolution Hydrogeologic, Geochemical and Geophysical Observations. *CA Bolduc, N Soto-Kerans, Z Mungia, R Winebarger, L Schmidt.*

EGU General Assembly Conference Abstracts - The McDonald Geodetic Observatory (MGO). S Bettadpur, P Shelus, J Ries, D Munton, C Hughes, C Wilson, **DM Rempe**.

2017

Geological Society of America Annual Meeting - Quantifying alluvium effects on karst aquifer recharge: shallow groundwater and surface water exchange in the upper Nueces River, Texas, *C.C. Hackett, M.O. Gary, **DM Rempe**.*

*Geological Society of America Annual Meeting - Investigating coupled hydrologic and biogeochemical fluxes in the critical zone via distributed sensing and sampling in variably saturated, weathered bedrock, **DM Rempe**, J.L. Druhan, J.J. Wang, S. Cargill, C. Murphy, *L.M.Schmidt*, W.J. Hahm, K.L. Crutchfield-Peters, T.E. Dawson, W.E. Dietrich.

Geological Society of America Annual Meeting - Investigating morphological controls on hyporheic exchange in a meandering river. N. Setlur, B. Valdez, A. De Luna, R. Craycroft, H. Houpt, **DM Rempe**, M.B. Cardenas, M.T. O'Connor, M.H. Kaufman, P.E. Carlson, S.B. Ferencz, R. Roback, G. Perkins, J.D. Gomez-Velez.

Geological Society of America Annual Meeting - Preferential flow in the critical zone: direct observations of the spatial and temporal patterns of fluid composition in variably saturated weathered bedrock, *A.K. Tune, S. Cargill, C. Murphy, W.J. Hahm, W.E. Dietrich, **DM Rempe**.*

American Geophysical Union Fall Meeting - Quantifying Seasonal Dynamic Water Storage in a Fractured Bedrock Vadose Zone With Borehole Nuclear Magnetic Resonance, *L Schmidt, B Minton, N Soto-Kerans, **DM Rempe**, Z Heidari.*

American Geophysical Union Fall Meeting - Critical zone structure inferred from multiscale near surface geophysical and hydrological data across hillslopes at the eel river czo, SS Lee, **DM Rempe**, WS Holbrook, *L Schmidt, WJ Hahm, WE Dietrich.*

American Geophysical Union Fall Meeting - Linking carbon and hydrologic fluxes in the critical zone: Observations from high-frequency monitoring of a weathered bedrock vadose zone, *AK Tune*, JL Druhan, J Wang, S Cargill, C Murphy, **DM Rempe**.

American Geophysical Union Fall Meeting - Relating runoff generation mechanisms to concentration-discharge relationships in catchments with well-characterized critical zone structures and hydrologic dynamics, WJ Hahm, J Wang, JL Druhan, **DM Rempe**, WE Dietrich.

General Assembly Conference Abstracts 10, 13803 - From the surface to the deep critical zone: Linking soil carbon, fluid saturation and weathering rate, J Druhan, C Lawrence, J Oster, **DM Rempe**, W Dietrich.

2016

American Geophysical Union Fall Meeting Abstracts - Fractures in the deep critical zone characterized by drilling and geophysics in the Laramie Range, Wyoming, JL Hayes, WS Holbrook, B Carr, BA Flinchum, **DM Rempe**, CG Novitsky.

American Geophysical Union Fall Meeting Abstracts - Investigating the mechanisms of shale porosity development to understand hydrologic controls on hillslope scale weathering in a comparison across CZOs. X Gu, **DM Rempe**, SL Brantley.

Before 2016 (Selected)

American Geophysical Union Fall Meeting Abstracts - Seeking GUTH, the Grand Unified Theory of Hillslopes: Linking Weathering, Erosion and Landscapes, SP Anderson, WE Dietrich, **DM Rempe**, N West, SL Brantley, AR Bacon.

*American Geophysical Union Fall Meeting Abstracts - The oxidation of landscapes, **DM Rempe**, WJ Hahm, WE Dietrich.

American Geophysical Union Fall Meeting Abstracts - Isotopic 'fingerprinting' of distinct water reservoirs in the critical zone and their exploitation by different tree species. J Oshun, WE Dietrich, TE Dawson, **DM Rempe**, IY Fung.

American Geophysical Union Fall Meeting Abstracts - Development of weathering profile of a forest hillslope in clay-rich sedimentary system. RW Nicklas, H Kim, JK Bishop, **DM Rempe**.

SEG Technical Program Expanded Abstracts, 1421-1424 - Hydrogeophysics and the settlement of San Marcos Pueblo, NM: Investigations by the SAGE geophysical field course. J Ferguson, **DM Rempe**, A Nowicki, K Talaksen, N Lindsey, J Chang

Symposium on the Application of Geophysics to Engineering and Environmental Problems - Investigating Hillslope Hydrology with Electrical Resistivity Tomography. E Gasperikova, R Salve, **DM Rempe**, J Peterson

American Geophysical Union Fall Meeting Abstracts - Plant d-excess: A new concept and tool for exploring plant-soil-atmospheric water cycling. K Simonin, RL Apodaca, P Link, J Oshun, **DM Rempe**, TE Dawson

PROFESSIONAL SERVICE

University of Texas at Austin

Dept. of Geosciences, Hydrogeology Endowment Committee, **Chair**
Jackson School of Geosciences, Co-Founder of the Geoscience Empowerment Network

2021 - present
2018

Dept. of Geosciences, Undergraduate Advising Committee, Chair	2017 - present
Dept. of Geosciences, Undergraduate Curriculum Reform Committee	2017
Dept. of Geosciences, Hydrologic Science Search Committee	2016

University of Texas at Austin, Other Activities

Faculty advisor (informal) to Geosystems Engineering and Hydrogeology majors	2018-Present
Invited speaker, JSG Friends and Alumni (FANS) board	2018
Invited speaker, JSG Advisory Council	2017
Invited panelist for UT Geoscience Leadership Organization for Women	2017
Invited faculty speaker for UT Geosociety	2016
Invited speaker UT-Geoscience Honors Research Program	2016

External Service: Workshop, meeting, and session organization and co-organization

AGU Annual Meeting, Virtual	Session Chair: Advances in Tracer Methods and Modeling of Hydrochronology, Hydrologic Processes, and Residence Times	2020
Goldschmidt, Barcelona, Spain	Session Chair: Exploring Interactions between Plants and their Substrate Across Scales	2019
AGU Annual Meeting, Washington DC	Session Chair: A second generation of isotopic, trace element, and noble gas tracers of hydrologic processes	2018
AGU Annual Meeting, New Orleans, LA	Session Chair: A new generation of isotopic, trace element, and noble gas tracers of hydrologic processes	2017
NSF, Eel River CZO	Critical Zone Observatory network PI meeting	2017
AGU-SEG, Stanford Univ.	Hydrogeophysics Workshop: Imaging the Critical Zone	2017

External Service: Referee

Journals: Proceedings of the National Academy of Science, Geophysics, Geophysical Research Letters, Water Resources Research, Geomorphology, Geological Society of America Bulletin, Hydrological Processes, Groundwater, Applied Geophysics

Proposals: National Science Foundation Geobiology and Low Temperature Geochemistry Program, National Science Foundation Hydrologic Sciences Program, National Science Foundation Geomorphology and Land-use Dynamics, Department of Energy Office of Science Subsurface Biogeochemical Research

External Service: Other

Reviewer, DOE SCGF Fellowship program		
Committee Member, AGU Hydrogeophysics Technical Committee		2018-Present
Panelist, National Science Foundation, Hydrological Sciences		
Panelist, GSA Quaternary Geology and Geomorphology student research grants		
Co-author, New opportunities for Critical Zone science White Booklet		2017

OUTREACH ACTIVITIES

Invited speaker, "Growing the Critical Zone Research Network" CUAHSI cyberseminar, Public		2020
Invited speaker, SHaRP meeting Elder Creek		
<i>Interagency water resource management meeting in Northern California.</i>		2019
Profiled scientist, University of Texas OnRAMPS Outreach Program		2019
Perspectives in Geoscience: Earth's Freshwater Systems		
Invited speaker, Austin Geological Society, Public		2019

OTHER RECOGNITION

Hahm et al., 2020 [EOS Spotlight](#)
 Tune et al., 2020 coverage [Eureka](#)
 General research coverage [EOS](#)
 Development of Sagehorn field site [Livermore Independent News 2016](#), [Livermore Independent News 2015](#)
 Hahm et al., 2019 coverage [EOS spotlight](#), [Eureka](#), [UC Berkeley Press](#)
 Rempe and Dietrich, 2018 coverage [SF Chronicle Front page](#), [NSF press release](#), [Atlas Obscura](#), [UC Berkeley Press](#), [Univ. Texas Press](#)
 Rempe and Dietrich, 2014 coverage [UC Berkeley Press](#)

PROFESSIONAL MEMBERSHIPS

2007-present Geological Society of America
2009-present Society of Exploration Geophysicists
2009-present American Geophysical Union

LONG-TERM RESEARCH MONITORING

Field sites outfitted with long-term environmental monitoring infrastructure.

Year established	Site	Location
2020	*JSG White Family Outdoor Learning Center	Dripping Springs, TX
2018	*McDonald Observatory	Fort Davis, TX
2017	*Upper Slate River	Crested Butte, CO
2017	*Rancho Venada	Williams, CA
2014	Sagehorn	Laytonville, CA
2010	Rivendell	Branscomb, CA
2020	White family outdoor learning center	Dripping Springs, TX
2020	White family outdoor learning center	Dripping Springs, TX