

## CURRICULUM VITAE

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### EDUCATION

Ph.D., University of California Berkeley, Civil and Environmental Engineering, 2005  
Hydrodynamics of particle clogging in saturated granular media: Analysis and experiments  
Committee: James R. Hunt (chair), Garrison Sposito, Michael Manga

M.S., University of California Berkeley, Civil and Environmental Engineering, 1999

B.S., University of Pennsylvania, Civil Engineering Systems, *cum laude*, 1995

### REGISTRATION

Professional Engineer, Colorado #39561, California #68010

### PROFESSIONAL EXPERIENCE

University of Colorado Denver, Associate Professor 2023-present, Professor Clinical Teaching Track 2018-2023, Associate Professor Clinical Teaching Track 2014-2018, Assistant Professor 2005-2014.

Merrick and Company, Los Alamos, New Mexico, Civil Engineer, 1996-1998

Teach for America, St. Martinville, Louisiana, High School Teacher, 1995-1996

### PUBLICATIONS UNDER REVIEW<sup>1</sup>

**Humphreys, K.M.** and D.C. Mays, Insights from application of water quality modeling and machine learning to suspended sediment and land management data from the South Fork Clearwater River Basin, Idaho County, Idaho, USA, *Journal of Hydrology—Regional Studies* (revision under review).

Mays, D.C., T.M. Roane, R. Moreno-Sanchez, **C. Rice, J.L. Romero**, and C. Velez, Wayfinding, knowledge, perspective, and engagement: Preparing tribal liaisons for stewardship of Indigenous lands, *Ecosphere* (under review).

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<sup>1</sup> Student co-authors shown in **boldface**.

**Fahrney, E.E.**, D.C. Mays, and C.P. Newman, Systematic approach to prioritize wells for groundwater monitoring in the Arkansas River Headwaters Basin, Colorado, USA, *Journal of Hydrology—Regional Studies* (under internal review at USGS).

## REFEREED PUBLICATIONS

### JOURNAL ARTICLES

40. **Mont-Eton, M.E.**, S. Borgwardt, and D.C. Mays (2024), Inverse method to determine hydraulic conductivity from a velocity field using graph theory, *InterPore Journal* (in press).

39. Mays, D.C., T.M. Roane, B.J. Allen, R. Moreno-Sanchez, G. RedShirt Tyon, **C. Rice, J.L. Romero**, and C. Velez (2024), Fitting college to students (not vice versa): A certificate program on environmental stewardship of Indigenous lands, *Advances in Engineering Education* (in press).

38. Goodman, K.A., H.L. Johnson, M. Darbeheshti, T. Altman, and D.C. Mays (2024), Setting a better default: Designing a Welcome Academy for New Faculty centered on inclusive teaching in engineering, *International Journal of Designs for Learning*, 15(2), 14-25.

37. **Tigera, R.G., W.L. Benson**, and D.C. Mays (2023), Thermally enhanced spreading of miscible plumes in porous media, *Hydrology*, 10, 98, doi:/10.3390/hydrology10040098.

36. **Sather, L.J., E.J. Roth**, R.M. Neupauer, J.P. Crimaldi, and D.C. Mays (2023), Experiments and simulations on plume spreading by engineered injection and extraction in refractive index matched porous media, *Water Resources Research*, 59, e2022WR032943, doi:10.1029/2022WR032943.

35. **Sturgell, F.D.** and D.C. Mays (2023), Pneumatic evacuation to prevent freezing in outdoor sump pump drains, *Journal of Cold Regions Engineering*, 37(2), 06023001, doi:10.1061/JCRGEI.CRENG-619.

34. **Rice, C.** and D.C. Mays (2022), Building diversity, equity, and inclusion into an engineering course, *Advances in Engineering Education*, 10(4), 2-11.

33. Velez, C., B.M. Nuechterlein, S.C. Connors, G. RedShirt Tyon, T.M. Roane, and D.C. Mays (2022), Application of the Indigenous evaluation framework to a university certificate program for building cultural awareness in science, technology, engineering, and mathematics, *Evaluation and Program Planning*, 92, 102066, doi:10.1016/j.evalprogplan.2022.102066.<sup>2</sup>

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<sup>2</sup> Identified as an Editor's Choice.

32. **Sather, L.J.**, R.M. Neupauer, D.C. Mays, **E.J. Roth**, and J.P. Crimaldi (2022), Active spreading: Hydraulics for enhancing groundwater remediation, *Journal of Hydrologic Engineering*, 27(5), 04022007, doi:10.1061/(ASCE)HE.1943-5584.0002167.
31. Neupauer, R.M., **E.J. Roth**, J.P. Crimaldi, D.C. Mays, and **L.J. Sather** (2021), Demonstration of reversible dispersion in a Darcy-scale push-pull laboratory experiment, *Transport in Porous Media*, doi:10.1007/s11242-021-01682-3.
30. **Johnk, B.T.** and D.C. Mays (2021), Wildfire impacts on groundwater aquifers: A case study of the 1996 Honey Boy fire in Beaver County, Utah, USA, *Water*, 13(16), 2279, doi:10.3390/w13162279.
29. **Roth, E.J.**, D.C. Mays, R.M. Neupauer, **L.J. Sather**, and J.P. Crimaldi (2021), Methods for laser-induced fluorescence imaging of solute plumes at the Darcy scale in quasi-two-dimensional, refractive index-matched porous media, *Transport in Porous Media*, 136, 879–898, doi:10.1007/s11242-021-01545-x.
28. Neupauer, R.M., **L.J. Sather**, D.C. Mays, J.P. Crimaldi, and **E.J. Roth** (2020), Contributions of pore-scale mixing and mechanical dispersion to reaction in radial groundwater flow, *Water Resources Research*, 56(7), doi:10.1029/2019WR026276.
27. **Roth, E.J.**, R.M. Neupauer, D.C. Mays, **L.J. Sather**, and J.P. Crimaldi (2020), Wall effect mitigation techniques for experiments with planar walls, *Transport in Porous Media*, 132, 423-441, doi:10.1007/s11242-020-01399-9.
26. Mays, D.C. and T.D. Scheibe (2018), Groundwater contamination, subsurface processes, and remediation methods: Overview of the special issue of *Water* on groundwater contamination and remediation, *Water*, 10, 1708; doi:10.3390/w10121708.
25. **Chinnasamy, C.V.**, **W.C. McIntyre**, and D.C. Mays (2018), Technical and administrative feasibility of alluvial aquifer storage and recovery on the South Platte River of northeastern Colorado, *Water Policy*, 20(4), 841-854.
24. Klingensmith III, W.C. and D.C. Mays (2018), Information content of wastewater flowmeter data before and during a surcharge, *Journal of Environmental Engineering*, 144(9), 05018004.
23. **Zivkovich, B.R.** and D.C. Mays (2018), Predicting nonpoint stormwater runoff quality from land use, *PLOS ONE*, 13(5), doi:10.1371/journal.pone.0196782.
22. **McIntyre, W.C.** and D.C. Mays (2017), Roles of the water court and the State Engineer for water administration in Colorado, *Water Policy*, 19(4), 837-850.

21. **Roth, E.J.**, B. Gilbert, and D.C. Mays (2015), Colloid deposit morphology and clogging in porous media: Fundamental insights through investigation of deposit fractal dimension, *Environmental Science and Technology*, 49(20), 12263–12270.
20. **Roth, E.J., M.E. Mont-Eton**, B. Gilbert, T.C. Lei, and D.C. Mays (2015), Measurement of colloidal phenomena during flow through refractive index matched porous media, *Review of Scientific Instruments*, 86, 113103, doi:10.1063/1.4935576.
19. **Sanchez II, N.** and D.C. Mays (2015), Effect of methane leakage on the greenhouse gas footprint of electricity generation, *Climatic Change*, 133(2), 169-178.
18. Neupauer, R.M. and D.C. Mays (2015), Engineered injection and extraction for in situ remediation of sorbing solutes in groundwater, *Journal of Environmental Engineering*, 10.1061/(ASCE)EE.1943-7870.0000923, 04014095, 1-12.
17. **Krauss, E.D.** and D.C. Mays (2014), Modification of the Kozeny-Carman equation to quantify formation damage by fines in clean unconsolidated porous media, *SPE Reservoir Evaluation and Engineering*, 17(4), 466-472.<sup>3</sup>
16. Neupauer, R.M., J.D. Meiss, and D.C. Mays (2014), Chaotic advection and reaction during engineered injection and extraction in heterogeneous porous media, *Water Resources Research*, 50(2), 1433-1447.
15. **Piscopo, A.N.**, R.M. Neupauer, and D.C. Mays (2013), Engineered injection and extraction to enhance reaction for improved in situ remediation, *Water Resources Research*, 49(6), 3618-3625.
14. Mays, D.C. and R.M. Neupauer (2013), Reply to comment by D.R. Lester *et al.* on “Plume spreading in groundwater by stretching and folding,” *Water Resources Research*, 49(2), 1192-1194.
13. **Rhodes, E.P.**, Z.J. Ren, and D.C. Mays (2012), Zinc leaching from tire crumb rubber, *Environmental Science and Technology*, 46(23), 12856-12863.
12. Mays, D.C. and R.M. Neupauer (2012), Plume spreading in groundwater by stretching and folding, *Water Resources Research*, 48, W07501, doi:10.1029/2011WR011567.
11. Manga, M., I. Beresnev, E.E. Brodsky, J.E. Elkhoury, D. Elsworth, S. Ingebritsen, D.C. Mays, and C.-Y. Wang (2012), Changes in permeability by transient stresses: Field observations, experiments, and mechanisms, *Reviews of Geophysics*, 50, RG2004, doi:10.1029/2011RG000382.<sup>4</sup>

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<sup>3</sup> Featured on the cover of its issue.

<sup>4</sup> All authors contributed equally.

10. **Coughlin, J.P., C.D. Campbell**, and D.C. Mays (2012), Infiltration and clogging by sand and clay in a pervious concrete pavement system, *Journal of Hydrologic Engineering*, 17(1), 68-73.
9. Mays, D.C., **O.T. Cannon, A.W. Kanold, K.J. Harris**, T.C. Lei, and B. Gilbert (2011), Static light scattering resolves colloid structure in index-matched porous media, *Journal of Colloid and Interface Science*, 363, 418-424.
8. Mays, D.C. (2010), Contrasting clogging in granular media filters, soils, and dead-end membranes, *Journal of Environmental Engineering*, 136(5), 475-480.
7. Mays, D.C. (2010), One-week module on stochastic groundwater modeling, *Journal of Geoscience Education*, 58(2), 73-81.
6. Mays, D.C. (2007), Using the Quirk-Schofield diagram to explain environmental colloid dispersion phenomena, *Journal of Natural Resources and Life Sciences Education*, 36, 45-52.
5. Mays, D.C. and J.R. Hunt (2007), Hydrodynamic and chemical factors in clogging by montmorillonite in porous media, *Environmental Science and Technology*, 41(16), 5666-5671.
4. Mays, D.C. and J.R. Hunt (2005), Hydrodynamic aspects of particle clogging in porous media, *Environmental Science and Technology*, 39(2), 577-584.
3. Mays, D.C., B.A. Faybishenko and S. Finsterle (2002), Information entropy to measure temporal and spatial complexity of unsaturated flow in heterogeneous media, *Water Resources Research*, 38(12), 1313, doi:10.1029/2001WR001185.
2. Mays, D.C. and B.A. Faybishenko (2000), Washboards in unpaved highways as a complex dynamic system, *Complexity*, 5(6), 51-60.
1. Mays, D.C. and S.J. Veenis (1998), Matrix approach to contaminant transport potential, *Practice Periodical of Hazardous, Toxic and Radioactive Waste Management*, 2(3), 120-122.

#### REFEREED CONFERENCE PROCEEDINGS

4. Darbeheshti, M., T. Altman, K.A. Goodman, H.L. Johnson, M. Evans, and D.C. Mays (2024), Building community for inclusive teaching: Can we bridge the valley of neglect? Annual Conference, American Society for Engineering Education, Portland, Oregon, June 23-26, 2024.
3. Goodman, K.A., M. Darbeheshti, D.C. Mays, T. Altman, and H.L. Johnson (2023), From cohort to classroom: Transitioning to year 2 in a faculty learning community, Annual Conference, American Society for Engineering Education, Baltimore, Maryland, June 25-28, 2023.

2. Collopy, A.X., H.L. Johnson, K.A. Goodman, T. Altman, M. Darbeheshti, K.L. Wood, and D.C. Mays (2022), Exploring nudging approaches for growing a culture of diversity and inclusion with engineering faculty, Annual Conference, American Society for Engineering Education, Minneapolis, Minnesota, June 26-29, 2022.

1. Mays, D.C. and R.M. Neupauer (2017), Chaotic advection and unsteady flow in groundwater remediation, *Waste Management Symposium 2017: Building Global Trust in Decommissioning and Radioactive Waste Management*, Phoenix, Arizona, March 5-9, 2017.

#### REFEREED BOOK CHAPTERS

5. Mays, D.C. (2013), Clogging in managed aquifer recharge: Flow, geochemistry, and clay colloids, in Martin, R., ed., *Clogging Issues Associated with Managed Aquifer Recharge Methods*, International Association of Hydrogeologists (IAH) Commission on Managing Aquifer Recharge, Australia, 14-24.

4. Chan Hilton, A.B., J.W. Lauer, D.C. Mays, R.M. Neupauer, A. Sciortino (2012), Resources for teaching water resources, Chapter 7 in Chan Hilton, A.B. and R.M. Neupauer, eds., *H<sub>2</sub>O! Classroom Demonstrations for Water Concepts*, American Society of Civil Engineers, Reston, Virginia, 129-134.

3. **Kanold, A.W.** and D.C. Mays (2012), Porosity, Section 5.1 in Chan Hilton, A.B. and R.M. Neupauer, eds., *H<sub>2</sub>O! Classroom Demonstrations for Water Concepts*, American Society of Civil Engineers, Reston, Virginia, 99-100.

2. Mays, D.C. (2012), Atmospheric water, Section 4.1 in Chan Hilton, A.B. and R.M. Neupauer, eds., *H<sub>2</sub>O! Classroom Demonstrations for Water Concepts*, American Society of Civil Engineers, Reston, Virginia, 72-74.

1. Mays, D.C. (2012), NAPL ganglia, Section 5.9 in Chan Hilton, A.B. and R.M. Neupauer, eds., *H<sub>2</sub>O! Classroom Demonstrations for Water Concepts*, American Society of Civil Engineers, Reston, Virginia, 115-116.

#### NON-REFEREED PUBLICATIONS

##### PROCEEDINGS PAPERS

20. Neupauer, R.M., D.C. Mays, M. Ye, and J.A. Greene (2022), Comparison of Effective Active Spreading Designs for In-Situ Groundwater Remediation, *World Environmental and Water Resources Congress*, American Society of Civil Engineers, Atlanta, Georgia, June 5-8, 2022.

19. Quinn, J.T., R.M. Neupauer, **L.J. Sather**, D.C. Mays, J.P. Crimaldi, and **E.J. Roth** (2022), Effects of active and passive spreading on mixing and reaction during in-situ groundwater remediation,

*World Environmental and Water Resources Congress*, American Society of Civil Engineers, Atlanta, Georgia, June 5-8, 2022.

18. Mizyed, N. and D.C. Mays (2020), Reuse of treated wastewater: From technical innovation to legitimization, *World Environmental and Water Resources Congress*, American Society of Civil Engineers, Henderson, Nevada, May 17-21, 2020, 16-30, doi:10.1061/9780784482988.003.

17. Neupauer, R.M., **L.J. Sather, E.J. Roth**, D.C. Mays, and J.P. Crimaldi (2020), Numerical and experimental investigation of active and passive spreading for groundwater remediation, *World Environmental and Water Resources Congress*, American Society of Civil Engineers, Henderson, Nevada, May 17-21, 2020, 97-103, doi: 10.1061/9780784482964.010.

16. **Greene, J.A.**, R.M. Neupauer, M. Ye, J.R. Kasprzyk, D.C. Mays, and G.P. Curtis (2017), Engineered injection and extraction for remediation of uranium-contaminated groundwater, in *World Environmental and Water Resources Congress 2017: Groundwater, Sustainability, and Hydro-Climate/Climate Change*, Dunn, C.N. and Van Weele, B., eds., American Society of Civil Engineers, Reston, Virginia, 111-118.

15. **Ritsch, C.**, R.M. Neupauer, and D.C. Mays (2017) Naturally-occurring chaotic advection in groundwater and surface-water systems, in *World Environmental and Water Resources Congress 2017: Groundwater, Sustainability, and Hydro-Climate/Climate Change*, Dunn, C.N. and Van Weele, B., eds., American Society of Civil Engineers, Reston, Virginia, 102-110.

14. **Piscopo, A.N.**, J.R. Kasprzyk, R.M. Neupauer, and D.C. Mays (2014), An iterative approach to many objective engineering design: Balancing conflicting objectives for engineered injection and extraction, in *World Environmental and Water Resources Congress 2014: Water Without Borders*, Huber, W.C., ed., American Society of Civil Engineers, Reston, Virginia, 1826-1833.

13. Neupauer, R.M. and D.C. Mays (2014), Engineered injection and extraction for in situ remediation of sorbing contaminants in aquifers, in *World Environmental and Water Resources Congress 2014: Water Without Borders*, Huber, W.C., ed., American Society of Civil Engineers, Reston, Virginia, 227-234.

12. **Krauss, E.D.** and D.C. Mays (2013), Modification of the Kozeny-Carman equation to quantify formation damage by fines in clean unconsolidated porous media, SPE-165148, 10<sup>th</sup> International Conference and Exhibition on European Formation Damage, Society of Petroleum Engineers, Noordwijk, Netherlands, June 5-7, 2013, doi:10.2118/165148-MS.

11. **Piscopo, A.N.**, J.R. Kasprzyk, R.M. Neupauer, and D.C. Mays (2013), Many-objective algorithm to optimize contaminant degradation during in situ remediation by engineered injection and extraction, Modflow and More 2013, Integrated Groundwater Modeling Center, Colorado School of Mines, Golden, Colorado, June 2-5, 2013.

10. Neupauer, R.M., **B.D. Webber**, **A.N. Piscopo**, D.C. Mays (2013), Enhanced in-situ remediation of sorbing groundwater contaminants using engineered injection and extraction, in *World Environmental and Water Resources Congress 2013: Showcasing the Future*, Patterson, C.L., S.D. Struck, and D.J. Murray, Jr., eds., American Society of Civil Engineers, Reston, Virginia, 433-439.
9. **Piscopo, A.N.**, J. Kasprzyk, R.M. Neupauer and D.C. Mays (2013), Many-objective design of engineered injection and extraction sequences for in situ remediation of contaminated groundwater, in *World Environmental and Water Resources Congress 2013: Showcasing the Future*, Patterson, C.L., S.D. Struck, and D.J. Murray, Jr., eds., American Society of Civil Engineers, Reston, Virginia, 486-493.
8. Mays, D.C., R.M. Neupauer, and **K.H. Kulha** (2012), Comparison of chaotic flows for plume spreading in aquifers, in *Computational Methods in Water Resources, CMWR 2012, XIX International Conference, June 17-21, 2012*, Valocchi, A.J., ed., University of Illinois at Urbana-Champaign, Urbana-Champaign, IL, 735-740.
7. **Piscopo, A.N.**, D.C. Mays and R.M. Neupauer (2012), Engineered well injection-extraction schemes to enhance reaction for improved in-situ remediation of contaminated groundwater, in *World Environmental and Water Resources Congress 2012: Crossing Boundaries*, E.D. Loucks, ed., American Society of Civil Engineers, Reston, Virginia, 70-75.
6. **Piscopo, A.N.**, R.M. Neupauer and D.C. Mays (2011), Contrasting advective spreading and dispersive mixing, in *World Environmental and Water Resources Congress 2011: Bearing Knowledge for Sustainability*, R.E. Beighley II and M.W. Killgore, eds., American Society of Civil Engineers, Reston, Virginia, 954-961.
5. **Chipman, J.B.**, J. Hendrikx, and D.C. Mays (2010), The value of international collaborations in understanding how climate change affects water supplies from snow dominated catchments, in *Watershed Management 2010: Innovations in Watershed Management under Land Use and Climate Change*, K.W. Potter and D.K. Frevert, eds., American Society of Civil Engineers, Reston, Virginia, 126-134.
4. Mays, D.C. and R.M. Neupauer (2010), Engineered well injection and extraction to enhance mixing in aquifers, in *World Environmental and Water Resources Congress 2010: Challenges of Change*, R.N. Palmer, ed., American Society of Civil Engineers, Reston, Virginia, 715-722.
3. **Radabaugh, C.R.**, D.C. Mays and R.M. Neupauer (2009), Groundwater mixing using pulsed dipole injection/extraction wells, in *World Environmental and Water Resources Congress 2009: Great Rivers*, S. Starrett, ed., American Society of Civil Engineers, Reston, Virginia, 1730-1734.
2. Mays, D.C., B.A. Faybishenko and S. Finsterle (2002), Information entropy to measure temporal and spatial complexity of unsaturated flow in heterogeneous media, in *Bridging the*



*Gap Between Measurement and Modeling in Heterogeneous Media*, A.N. Findikakis, ed., International Association of Hydraulic Engineering and Research, Madrid, Spain.

1. Veenis, S.J. and D.C. Mays (1998), Systematic approach to evaluate erosion potential at environmental restoration sites, in *Proceedings of the International Conference on Decommissioning and Decontamination and on Nuclear and Hazardous Waste Management [SPECTRUM '98]*, American Nuclear Society, La Grange Park, IL, 936-941.

#### MAGAZINE ARTICLES

5. Mays, D.C. (2022), How diversity makes better engineering teams, *Journal AWWA*, September 2022, 62-67.

4. Roane, T.M., G. RedShirt Tyon, D.C. Mays, R. Moreno-Sanchez, and B.J. Allen (2021), Bringing Indigenous perspectives to STEM, *Winds of Change*, Summer 2021.

3. McIntyre, W.C., C.V. Chinnasamy, and D.C. Mays (2018), Alluvial aquifer storage and recovery offers water storage management response to climate change and population growth, *International Water Association (IWA) Publishing News*, September 2018.

2. Mays, D.C. (2007), Soil fines: Small particles with a big impact, *CSA News*, 52(6), 34.

1. Mays, D.C. (1997), Tau Beta Pi arrives in Cajun Country, *Bulletin of Tau Beta Pi*, March 1997.

#### TECHNICAL REPORTS

5. Mays, D.C. (2015), User manual for Matlab GUI plume stretching and folding, submitted to the Hydrologic Sciences Program, U.S. National Science Foundation, Washington, DC.

4. Mays, D.C. (2013), Linking deposit morphology and clogging in subsurface remediation, submitted to the Subsurface Biogeochemical Research Program, U.S. Department of Energy, Washington, DC.

3. Mays, D.C., Z.J. Ren, and **E.P. Rhodes** (2011), Trash to treasure: Using crumb rubber from recycled tires for storm water pollution control, submitted to the Colorado Department of Public Health and Environment, Denver, Colorado.

2. **Gee, J.A.**, D.C. Mays, Z. Ren, and **E.P. Rhodes** (2009), Using crumb rubber from recycled tires for storm water pollution control: Regulation summary and market report, submitted to the Colorado Department of Public Health and Environment, Denver, Colorado.

1. **Dankenbring, S.C.** and D.C. Mays (2009), Catchment discretization in the Colorado Urban Hydrograph Procedure: A case study in the East Toll Gate Creek watershed, Arapahoe County, Colorado, Urban Drainage and Flood Control District, Denver, Colorado.

## PODCASTS AND VIDEOS

4. Mays, D.C. (2021), CU Denver engineers diverse ways to serve communities, CU On The Air, <http://cuontheair.blubrry.net/2021/10/26/cu-denver-is-engineering-diverse-ways-to-serve-communities/>.
3. Mays, D.C. (2021), Diversity, equity, and inclusion: How diversity makes better engineering teams, <https://youtu.be/McbJDqIhxSE>.
2. Mays, D.C. (2021), Hydrostatics, <https://youtu.be/NLyCB2WOQvl>.
1. Coughlin, J.P., M.S. Zarske, and D.C. Mays (2018), Quicksand danger: Myth or reality? TeachEngineering: STEM Curriculum for K-12, <https://www.teachengineering.org>.

## DATA and MODELS

- Fahrney, E.E.**, D.C. Mays, and C.P. Newman (2024). Codes and results to prioritize wells for groundwater monitoring in the Arkansas River Headwaters Basin, Colorado, USA, HydroShare, <http://www.hydroshare.org/resource/7e0192daba5e4b5ebdc3619a867507f6>
- Cook, T.J.** and D.C. Mays (2024), Videos, photographs, and hydraulic head data from a series of laboratory experiments on reactive transport of calcium carbonate precipitate in quasi-2D porous media, HydroShare, <https://doi.org/10.4211/hs.fa5884a58b2e4d8b94db1b8cdca3fd36>.
- Mont-Eton, M.E.**, D.C. Mays and S. Borgwardt (2024), FlowPaths model and simulations, HydroShare, <https://doi.org/10.4211/hs.191c41fcb8294d6ab46484be693999a0>.
- Humphreys, K.M.** and D.C. Mays (2024), Estimated streamflow, measured suspended sediment concentration, spatial land use data, and associated R scripts for evaluating total maximum daily load (TMDL) of turbidity in the South Fork Clearwater River, Idaho, USA, HydroShare, <http://www.hydroshare.org/resource/4fc104e85b4e4948a8a68ab73321a066>.
- Grote, M.E.** and D.C. Mays (2023), Videos, photographs, and hydraulic head data from a laboratory experiment on reactive transport and precipitation of calcium carbonate in quasi-2D porous media, HydroShare, <https://doi.org/10.4211/hs.85ab6b1a6147476ebc40a8adb39f6542>.
- Sather, L.J., E.J. Roth**, R.M. Neupauer, J.P. Crimaldi, and D.C. Mays (2023), Plume spreading experiments and simulations, HydroShare, <https://doi.org/10.4211/hs.4b8575d3031c40d4a39f945db8f02ae5>.

## EDITORSHIP

Scheibe, T.D. and D.C. Mays (2018), *Groundwater Contamination and Remediation: Printed Edition of the Special Issue Published in Water*, Multidisciplinary Digital Publishing Institute (MDPI), Basel, Switzerland, ISBN 978-3-03897-429-1.

## PATENT PENDING

Mays, D.C.; **R.G. Tigera**, and **W. Benson** (2023), Enhanced plume spreading, U.S. Patent Application 18/520,924, filed 11/28/2023, U.S. Patent and Trademark Office, Washington, DC.

## PRESENTATIONS at MEETINGS

### INVITED TALKS

**Fahrney, E.E.**, D.C. Mays, and C.P. Newman (2024), Prioritizing wells for long-term monitoring in the Arkansas Headwaters Basin, Annual Symposium, American Water Resources Association Colorado and Colorado Ground Water Association, Golden, Colorado, April 19, 2024.

Mays, D.C. and R.M. Neupauer (2017), Chaotic advection for groundwater remediation: simulations, experiments, and (future) field tests, Ground Water Forum, U.S. Environmental Protection Agency, Denver, Colorado, October 17-19, 2017.

Neupauer, R.M. and D.C. Mays (2017), Chaotic advection to amplify plume spreading for accelerated chemical reactions in porous media, Ground Water Forum, U.S. Environmental Protection Agency, Denver, Colorado, October 17-19, 2017.

Mays, D.C., R.M. Neupauer, and **A.N. Piscopo** (2016), Improved delivery of groundwater remediation amendments by chaotic advection, Tenth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Battelle Memorial Institute, Palm Springs, California, May 22-26, 2016.

Mays, D.C., **M.N. Jones** and R.M. Neupauer (2014), Practical application of chaotic advection to groundwater remediation, Complex Soil Systems Conference, Lawrence Berkeley National Laboratory, Berkeley, California, September 3-5, 2014.

Neupauer, R.M. and D.C. Mays (2012), Chaotic advection and spreading in porous media, Annual Meeting, International Society for Porous Media, West Lafayette, Indiana, May 14-16, 2012.

Mays, D.C. (2010), Colloidal effects on the permeability of granular media filters, soils, and aquifers, Dynamically Determined and Controlled Permeability Conference, U.S. Department of Energy, San Francisco, California, December 11-12, 2010.

Mays, D.C., **O.T. Cannon**, **A.W. Kanold**, **K.J. Harris**, T.C. Lei and B. Gilbert (2010), In situ measurement of the fractal dimension of colloid deposits in porous media, Talk 68-9, Annual Meeting, Geological Society of America, Denver, Colorado, October 31-November 3, 2010.

#### CONTRIBUTED TALKS

Mays, D.C., R. Moreno-Sanchez, **C. Rice**, **J.L. Romero**, and T.M. Roane (2024), Six years of workshops for environmental stewardship of Indigenous lands, SY43F-07, Annual Meeting, American Geophysical Union, Washington, DC, December 9-13, 2024.

**Rice, C.**, T.M. Roane, **J. Romero**, C. Velez, A. White Eagle, and D.C. Mays (2023), Building a liaison certificate in FEWS: Considerations and next steps, 2<sup>nd</sup> Annual Gathering, Native FEWS Alliance, Tucson, Arizona 21-24 March 2023.

Mays, D.C., R. Moreno-Sanchez, and T.M. Roane (2022), Developing a multi-institutional certificate program to center Indigenous knowledges in STEM curricula, ED43A-04, Fall Meeting, American Geophysical Union, Chicago, Illinois, December 12-16, 2022.

**Mont-Eton, M.E.** and D.C. Mays (2021), Inverse method to determine hydraulic conductivity from a measured velocity field, H13B-068, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 13-17, 2021.

Mays, D.C., T.M. Roane, R. Moreno, G. RedShirt Tyon, and B.J. Allen (2021), Environmental Stewardship of Indigenous Lands Scholarship Program, 2021 Virtual S-STEM Fall Forum Workshop, U.S. National Science Foundation, September 30-October 1, 2021.  
<https://youtu.be/T4pS1jylj3E>.

Moreno-Sanchez, R., T.M. Roane, D.C. Mays, B.J. Allen, and G. RedShirt Tyon (2021), Lessons learned in the design and operation of the Certificate in Environmental Stewardship of Indigenous Lands, Annual Meeting, American Association of Geographers, online, April 7-11, 2021.

Roane, T.M., D.C. Mays, R. Moreno-Sanchez, B.J. Allen, and G. RedShirt Tyon (2020), Bridging cultures for management and conservation of natural resources, ED016-06, Fall Meeting, American Geophysical Union, online, December 1-17, 2020.

**Mont-Eton, M.E.** and D.C. Mays (2020), Application of Laplace equation to derive hydraulic conductivity from velocity measurements in porous media, Annual Meeting, International Society for Porous Media, online, August 31-September 4, 2020.

Mays, D.C., T.M. Roane, R. Moreno, R. RedShirt Tyon, and B.J. Allen (2019), Extracurricular experiences bring Indigenous perspectives to students of biology, civil engineering, and environmental science, PA44B-04, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2019.

**Sather, L.J., E.J. Roth**, J.P. Crimaldi, R.M. Neupauer, and D.C. Mays (2019), How plume interfaces, velocity fields, and heterogeneity structures interact to enhance mixing and reaction, H53D-06, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2019.

Neupauer, R.M., L.J. Reising, E.J. Roth, J.P. Crimaldi, and D.C. Mays (2019), Laboratory and numerical investigation of active spreading, mixing, and reaction in porous media, MODFLOW and More 2019, International Ground Water Modeling Center, Golden, Colorado, June 2-5, 2019.

Neupauer, R.M., L.J. Reising, D.C. Mays, J.P. Crimaldi, E.J. Roth (2019), Using passive spreading by aquifer heterogeneity to inform the design of active spreading systems for in situ groundwater remediation, World Environmental and Water Resources Congress, American Society of Civil Engineers, Pittsburgh, Pennsylvania, June 19-23, 2019.

Mays, D.C. and T.M. Roane (2018), Environmental Stewardship of Indigenous Lands: New certificate, new curriculum, new culture in STEM education, STEAMposium, University of Colorado Denver, Denver, Colorado, October 12, 2018.

Neupauer, R.M., **S.C. Waers**, J.R. Kasprzyk, and D.C. Mays (2018), Monitoring design for in situ remediation of contaminated groundwater using engineered injection and extraction, World Environmental and Water Resources Congress, American Society of Civil Engineers, Minneapolis, Minnesota, June 3-7, 2018.

**Greene, J.A.**, R.M. Neupauer, M. Ye, J.R. Kasprzyk, D.C. Mays, and G.R. Curtis (2017), Bioremediation of uranium-contaminated groundwater using engineered injection and extraction, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 11-15, 2017.

**Zivkovich, B.R., J. La**, T.M. Roane, and D.C. Mays (2017), Future challenges of bulkheads in acid mine drainage remediation, Mountain States Regional Conference, International Erosion Control Association, Denver, Colorado, November 16, 2017.

**Chinnasamy, C.V., W.C. McIntyre**, and D.C. Mays (2016), Analysis of free river in the South Platte River for groundwater modeling in alluvial aquifer storage and recovery system, 71<sup>st</sup> Annual Meeting, Rocky Mountain Hydrologic Research Center, Ft. Collins, Colorado, November 18, 2016.

**Pearson, C.J.**, D.C. Mays, and I. Pal (2016), The sustainability of phytoremediation and monitored natural attenuation, a case study, BP Former Amoco Refinery, Sugar Creek, Missouri, Abstract #900, 109<sup>th</sup> Annual Conference and Exhibition, Air and Waste Management Association, New Orleans, Louisiana, June 20-23, 2016.

**Roth, E.J., R.G. Tigera**, J.P. Crimaldi, and D.C. Mays (2015), Refractive index matching for planar laser-induced fluorescence imaging of fluid mixing in porous media, H54C-06, Fall Meeting, American Geophysical Union, San Francisco, California, December 14-18, 2015.

**Jones, M.N., R.G. Tigera**, D.C. Mays, and R.M. Neupauer (2014), Experiments on plume spreading by engineered injection and extraction, Fall Meeting, American Geophysical Union, San Francisco, California, December 15-19, 2014.

MacDonald, L., K. Sagendorf, H. Barker, L. Chavez, E. Grassi, R. Hyman, M. Lawrence, E. Lourenco de Freitas, D.C. Mays, J. Reyes, J. Rother, J. Sandoval, E. Santillano, and J. Sweet, (2014), Meaningful engagement with diversity: Cultural competence in the 21<sup>st</sup>-century classroom, Teacher-Scholar Forum, Metropolitan State University of Denver, Denver, Colorado, March 14, 2014.

Mays, D.C. (2013), One-week introduction to stochastic groundwater modeling, 388-2, Annual Meeting, Geological Society of America, Denver, Colorado, October 27-30, 2013.

Neupauer, R.M., A. Chan Hilton, S.J. Burian, J.W. Lauer, P.P. Mathisen, D.C. Mays, J.W. Nicklow, M.S. Olson, B.L. Ruddell, and A. Sciortino (2013), *H<sub>2</sub>Oh!*: Collection of classroom demonstrations and activities for improving student learning of water concepts, 388-5, Annual Meeting, Geological Society of America, Denver, Colorado, October 27-30, 2013.

**Roth, E.J.** and D.C. Mays (2013), Clogging by colloid deposits: Fluid velocity, ionic strength, and fractal dimension, 87<sup>th</sup> Colloid and Surface Science Symposium, American Chemical Society, Riverside, California, June 23-26, 2013.

Mays, D.C., R.M. Neupauer, and J.D. Meiss (2013), Using chaos in groundwater remediation, Conference on Mathematical and Computational Issues in the Geosciences, Society of Industrial and Applied Mathematics, Padua, Italy, June 17-20, 2013.

**Piscopo, A.N.**, J.R. Kasprzyk, R.M. Neupauer, and D.C. Mays (2013), Optimizing in situ groundwater remediation with engineered injection and extraction, Conference on Mathematical and Computational Issues in the Geosciences, Society of Industrial and Applied Mathematics, Padua, Italy, June 17-20, 2013.

Mays, D.C. (2013), Classroom demonstrations of water concepts in 15 minutes or less, Teacher-Scholar Forum, Metropolitan State University of Denver, Denver, Colorado, February 22, 2013.

Neupauer, R.M., D.C. Mays, J.D. Meiss and M.W. Wetterau (2012), Groundwater plume spreading by chaotic advection: Stretching, folding, and bifurcation, H34A-07, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

**Gedge, K.S.** and D.C. Mays (2012), Secondary Clarifier Performance and Weir Loading Rate:

Statistical Analysis at the Metro Wastewater Reclamation District, Denver, Colorado, Joint Annual Conference, Rocky Mountain Water Environment Association and Rocky Mountain Section of the American Water Works Association, Copper Mountain, Colorado, September 9-12, 2012.

**Roth, E.J.** and D.C. Mays (2012), Linking colloid deposit morphology and clogging via fractal dimension, 86<sup>th</sup> Colloid and Surface Science Symposium, American Chemical Society, Baltimore, Maryland, June 10-13, 2012.

Neupauer, R.M. and D.C. Mays (2011), Chaotic advection, fluid spreading, and groundwater contaminant plumes, H23M-04, Fall Meeting, American Geophysical Union, San Francisco, California, December 5-9, 2011.

**Rhodes, E.P.**, Z.J. Ren and D.C. Mays (2011), Modeling zinc leaching from tire crumb rubber, 242<sup>nd</sup> National Meeting, American Chemical Society, Denver, Colorado, August 28–September 1, 2011.

**Piscopo, A.N.**, D.C. Mays, and R. M. Neupauer (2010), Contrasting advective spreading and dispersive mixing in groundwater, H54C-03, Fall Meeting, American Geophysical Union, San Francisco, California, December 13-17, 2010.

Mays, D.C. and R.M. Neupauer (2010), Innovative injection and extraction schemes to enhance mixing in aquifers, 274-2, Annual Meeting, Geological Society of America, Denver, Colorado, October 31-November 3, 2010.

Mays, D.C., **O.T. Cannon, A.W. Kanold, K.J. Harris**, T.C. Lei and B. Gilbert (2010), In situ measurement of the fractal dimension of colloid deposits in porous media, Hydrology Days, American Geophysical Union, Ft. Collins, Colorado, March 22-24, 2010.

Mays, D.C., **O.T. Cannon, A.W. Kanold, K.J. Harris**, T.C. Lei and B. Gilbert (2009), In situ measurement of the fractal dimension of colloid deposits in porous media, 83<sup>rd</sup> Colloid and Surface Science Symposium, American Chemical Society, New York, June 14-19, 2009.

**Dankenbring, S.C.** and D.C. Mays (2008), Effects of watershed subdivision, resolution of digital elevation model, and resolution of watershed properties in the Colorado Urban Hydrograph Procedure, 63<sup>rd</sup> Annual Meeting, Rocky Mountain Hydrologic Research Center, Ft. Collins, Colorado, 17 October 2008.

Mays, D.C. (2008), Graphical synthesis of colloid transport results on Quirk-Schofield diagrams, H21A-07, Joint Assembly, American Geophysical Union, Ft. Lauderdale, Florida, May 27-30, 2008.

Mays, D.C. and J.R. Hunt (2006), Clogging by montmorillonite in porous media: Hydrodynamic and chemical effects, Annual Meeting, American Institute of Chemical Engineers, San Francisco, California, November 12-17, 2006.

Mays, D.C. (2006), Clogging in filters and soils: Role of particle accumulation and deposit morphology, 80<sup>th</sup> Colloid and Surface Science Symposium, American Chemical Society, Boulder, Colorado, June 18-21, 2006.

Mays, D.C. and J.R. Hunt (2004), Hydrodynamic factors during particle clogging of porous media, 228<sup>th</sup> Annual Meeting, American Chemical Society, Philadelphia, Pennsylvania, August 22-26, 2004.

Mays, D.C. and J.R. Hunt (2003), Hydrodynamic factors in granular media clogging, Annual Meeting, American Institute of Chemical Engineers, San Francisco, California, November 16-21, 2003.

#### POSTER PRESENTATIONS

**Faber, B., M. Manfre Sarno**, R.M. Neupauer, and D.C. Mays (2024), Exploring chaotic signatures of helical flow within porous media, H23K-xx, Annual Meeting, American Geophysical Union, Washington, DC, December 9-13, 2024.

Mays, D.C., T. Altman, M. Darbeheshti, K.A. Goodman, M. Evans, and H.L. Johnson (2024), Nudging engineering faculty for inclusive teaching, Engineering Education and Centers Grantees Conference, U.S. National Science Foundation, Alexandria, Virginia, September 11-12, 2024.

Mays, D.C., R.M. Neupauer, S.T. Potter, J.J. Wahlberg, and M. Killingstad (2024), Bust a move: Can the dynamic dance of pumping and reinjection accelerate PFAS removal? Thirteenth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Battelle Memorial Institute, Denver, Colorado, June 2-6, 2024.

Mays, D.C., M. Darbeheshti, T. Altman, K.A. Goodman, H.L. Johnson, and M. Evans (2024), Nudging engineering faculty to adopt known best practices for inclusive teaching: Motivation, strategy, and what's next, Collaborative Network for Engineering and Computing Diversity (CoNECD), Arlington, Virginia, February 25-27, 2024.

Mays, D.C. and **L.M. Benson** (2023), Estimating snowpack infiltration from soil moisture time series with splines, H51K-1239, Fall Meeting, American Geophysical Union, San Francisco, California, December 11-15, 2023.

Mays, D.C., **C. Rice**, C. Velez, and T.M. Roane (2023), Student narratives from the first five years of Environmental Stewardship of Indigenous Lands, SY21B-0820, Fall Meeting, American Geophysical Union, San Francisco, California, December 11-15, 2023.



**Grote, M.E.** and D.C. Mays (2022), Experimental study of the relationship between porous media clogging and dynamic permeability, H25P-1300, Fall Meeting, American Geophysical Union, Chicago, Illinois, December 12-16, 2022.

**Humphreys, K.M.** and D.C. Mays (2022), Sediment trend analysis on the South Fork Clearwater River, Idaho County, Idaho, USA: Land management impact and participant perspectives, H15U-1040, Fall Meeting, American Geophysical Union, Chicago, Illinois, December 12-16, 2022.

**Benson, W.L., R.G. Tigera,** and D.C. Mays (2022), Proof-of-principle experiments on thermally enhanced plume spreading, H25P-1297, Fall Meeting, American Geophysical Union, Chicago, Illinois, December 12-16, 2022.

Mays, D.C., R. Moreno-Sanchez, and T.M. Roane (2022), Scholarships and certificates for stewardship of Indigenous land, 2022 Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) Symposium, U.S. National Science Foundation, Washington, DC, September 29-October 1, 2022.

Mays, D.C., M. Darbeheshti, T. Altman, K. Goodman, H.L. Johnson, and M. Evans (2022), Nudging new engineering faculty toward best practices for equity and inclusion, Engineering Education and Centers (EEC) Grantees Conference, U.S. National Science Foundation, Arlington, Virginia, September 22-23, 2022.

Roane, T.M., D.C. Mays, R. Moreno-Sanchez, G. RedShirt Tyon, and B.J. Allen (2022), Opening liaison careers for Indigenous students in the environmental sciences: Environmental Stewardship of Indigenous Lands (ESIL) certificate, Geoscience Alliance 5: Data in Indian Country, University of Minnesota, Minneapolis, Minnesota, July 28-31, 2022.

**Sather, L.J., E.J. Roth,** J.P. Crimaldi, R.M. Neupauer, and D.C. Mays (2022), Hydraulic building blocks for enhanced groundwater remediation, Twelfth International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Battelle Memorial Institute, Palm Springs, California, May 22-26, 2022.

**Benson, L.M.** and D.C. Mays (2021), Estimating snowmelt infiltration with soil moisture time series, C15D-0821, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 13-17, 2021.

**Rice, C.** and D.C. Mays (2021), Can we teach fluid mechanics without teaching oppression? SY55B-0347, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 13-17, 2021.

**Roth, E.J.,** R.M. Neupauer, J.P. Crimaldi, D.C. Mays, and **L.J. Sather** (2021), Experiments and simulations of reversible Fickian dispersion in periodic radial subsurface flow, H45Q-1370, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 13-17, 2021.

**Woods, M.L.** and D.C. Mays (2021), Modeling bioretention with sustainable porous media using Storm Water Management Model (SWMM), H35F-1091, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 13-17, 2021.

**La, J.**, D.C. Mays, and T.M. Roane (2020), Assessing biological toxicity of acid mine drainage using bacterial environmental DNA, B033-0001, Fall Meeting, American Geophysical Union, online, December 1-17, 2020.

**Roth, E.J.**, R.M. Neupauer, **L.J. Sather**, D.C. Mays, and J.P. Crimaldi (2020), Reversible dispersion in periodic radial subsurface flow, H035-0010, Fall Meeting, American Geophysical Union, online, December 1-17, 2020.

**Sather, L.J.**, R.M. Neupauer, **E.J. Roth**, J.P. Crimaldi, and D.C. Mays (2020), Engineering groundwater remediation by active plume spreading, H031-0012, Fall Meeting, American Geophysical Union, online, December 1-17, 2020.

Neupauer, R.M. **E.J. Roth**, **L.J. Sather**, J.P. Crimaldi, and D.C. Mays (2019), Spreading, mixing, and reaction in periodic radial subsurface flow, H53R-2069, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2019.

**Roth, E.J.**, R.M. Neupauer, D.C. Mays, **L.J. Sather**, and J.P. Crimaldi (2019), Validation of wall effect mitigation techniques for porous media experiments, H33N-2204, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2019.

Roane, T.M., B.J. Allen, D.C. Mays, R. Moreno, and G. RedShirt Tyon (2019), Network for education and employment in environmental stewardship of Indigenous lands, NSF INCLUDES National Network Convening, U.S. National Science Foundation, Alexandria, Virginia, May 29-30, 2019.

Mays, D.C., T.M. Roane, R. Moreno, G. RedShirt Tyon, and B.J. Allen (2018), Technical and cultural education on environmental stewardship of Indigenous lands, Fall Meeting, American Geophysical Union, Washington, D.C., December 10-14, 2018.

**Reising, L.**, R.M. Neupauer, D.C. Mays, J.P. Crimaldi, and **E.J. Roth** (2018), Effects of active and passive spreading on mixing and reaction during groundwater remediation by engineered injection and extraction, Fall Meeting, American Geophysical Union, Washington, D.C., December 10-14, 2018.

**Roth, E.J.**, J.P. Crimaldi, D.C. Mays, R.M. Neupauer, and **Reising, L.** (2018), Laboratory simulations of engineered injection and extraction in porous media using laser-induced fluorescence, Fall Meeting, American Geophysical Union, Washington, D.C., December 10-14, 2018.

**Coughlin, J.P.**, H.L. Johnson, and D.C. Mays (2018), Genetic decomposition: How do students learn to turn concepts into relationships?, Zone IV Conference, American Society for Engineering Education, Boulder, Colorado, March 25-27, 2018.

Roane, T.M., B.J. Allen, D.C. Mays, R. Moreno, G. RedShirt Tyon, and C. Velez (2018), Building a network for education and employment in environmental stewardship of Indigenous lands (ESIL), NSF INCLUDES Awardees and Evaluators Meeting, U.S. National Science Foundation, Alexandria, Virginia, January 10-12, 2018.

Mays, D.C., V.L. Freedman, S.K. White, Y. Fang, and R.M. Neupauer (2017), Linking chaotic advection with subsurface biogeochemical processes, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 11-15, 2017.

**Reising, L.J.**, R.M. Neupauer, and D.C. Mays (2017), Estimating mixing and reaction in porous media using a flow-based metric incorporating dispersion, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 11-15, 2017.

**Roth, E.J.**, D.C. Mays, R.M. Neupauer, and J.P. Crimaldi (2017), Quantification and control of wall effects in porous media experiments, Fall Meeting, American Geophysical Union, New Orleans, Louisiana, December 11-15, 2017.

**La, J., B.R. Zivkovich**, D.C. Mays, and T.M. Roane (2017), Biological toxicity related to hydrogeochemical effects of mine bulkheads, Fall Meeting, Rocky Mountain Branch, American Society for Microbiology, Denver, Colorado, November 11, 2017.

**Coughlin, J.P.** and D.C. Mays (2016), Classroom activities to make aquifers transparent, Fall Meeting, American Geophysical Union, San Francisco, California, December 12-16, 2016.

**Reising, L.J.**, Neupauer, R.M., and D.C. Mays (2016), Relative contributions of heterogeneity and imposed time-varying flows on spreading and contaminant degradation in groundwater, Fall Meeting, American Geophysical Union, San Francisco, California, December 12-16, 2016.

**Roth, E.J.**, D.C. Mays, and J.P. Crimaldi (2016), Experimental methods for observation of mixing in refractive index matched porous media, Fall Meeting, American Geophysical Union, San Francisco, California, December 12-16, 2016.

**Mont-Eton, M.E., E.J. Roth**, T.C. Lei, B. Gilbert, and D.C. Mays (2015), How to measure fractal colloid deposits in porous media, H21A-1332, Fall Meeting, American Geophysical Union, San Francisco, California, December 14-18, 2015.

**Sanchez II, N.** and D.C. Mays (2015), How much leakage renders the greenhouse gas footprint of natural gas equivalent to coal?, A43F-0341, Fall Meeting, American Geophysical Union, San Francisco, California, December 14-18, 2015.

**Tigera, R.G., E.J. Roth,** R.M. Neupauer, and D.C. Mays (2015), The solution to pollution is distribution: Design your own chaotic flow, H51F-1427, Fall Meeting, American Geophysical Union, San Francisco, California, December 14-18, 2015.

**Zivkovich, B.R.** and D.C. Mays (2015), Evaluating urbanization impacts from non-point stormwater runoff using geospatial analysis, H11F-1404, Fall Meeting, American Geophysical Union, San Francisco, California, December 14-18, 2015.

**Roth, E.J.,** B. Gilbert, and D.C. Mays (2014), Size and fractal dimension of colloid deposits in model porous media, H31C-0634, Fall Meeting, American Geophysical Union, San Francisco, California, December 15-19, 2014.

Mays, D.C., **E.J. Roth,** and B. Gilbert (2014), Self-organization, emergence, and fractal dimension of colloid deposits in model soils, Complex Soil Systems Conference, Lawrence Berkeley National Laboratory, Berkeley, California, September 3-5, 2014.

**Jones, M.N.,** D.C. Mays, and R.M. Neupauer (2014), Plume spreading by chaotic advection: Simulations and experiments, Annual Meeting, International Society for Porous Media, Milwaukee, Wisconsin, May 27-30, 2014.

**Accardo, M.P.,** R.M. Neupauer, J.D. Meiss, and D.C. Mays (2013), Spreading of three-dimensional plumes in two-dimensional chaotic flows in groundwater, H31D-1199, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2013.

**Foster, M.T., M.N. Jones,** D.C. Mays, and R.M. Neupauer (2013), Hele-Shaw experiments on plume stretching and folding, H31D-1208, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2013.

Mays, D.C. (2013), Clogging in managed aquifer recharge: Hydrodynamics and geochemistry, H11F-1216, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2013.

Neupauer, R.M., **J.P. Brodt,** and D.C. Mays (2013), Engineered injection and extraction for remediation of sorbing solutes in groundwater, H41H-1333, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2013.

**Roth, E.J.** and D.C. Mays (2013), Colloid deposit morphology and clogging in aquifers, reservoirs, filters, and reactors: New insights through categorization with fractal dimension, H13B-1327, Fall Meeting, American Geophysical Union, San Francisco, California, December 9-13, 2013.

**Accardo, M.P.,** R.M. Neupauer, J.D. Meiss, and D.C. Mays (2013), Chaotic advection and contaminant degradation during engineered injection and extraction in heterogeneous porous

media, 247-66, Annual Meeting, Geological Society of America, Denver, Colorado, October 27-30, 2013.

Chan Hilton, A., R.M. Neupauer, S.J. Burian, J.W. Lauer, P.P. Mathisen, D.C. Mays, M.S. Olson, C.A. Pomeroy, B.L. Ruddell, and A. Sciortino (2013), H<sub>2</sub>O! Classroom demonstrations and activities for improving student learning of water concepts, World Environmental and Water Resources Congress, American Society of Civil Engineers, Cincinnati, Ohio, May 19-23, 2013.

**Krauss, E.D.** and D.C. Mays (2013), A new look at the Kozeny-Carman equation when applied to formation damage, Emerging Engineers Conference, Gulf Coast Section, Society of Petroleum Engineers, Houston, Texas, May 17, 2013.

**Roth, E.J.**, J. Ajo-Franklin, T.C. Lei, B. Gilbert, and D.C. Mays (2013), Colloid deposit morphology and permeability of porous media, Terrestrial Ecosystem Science/Subsurface Biogeochemical Research, Joint Investigators Meeting, Potomac, MD, May 14-15, 2013.

Chan Hilton, A., R.M. Neupauer, S.J. Burian, J.W. Lauer, P.P. Mathisen, D.C. Mays, M.S. Olson, C.A. Pomeroy, B.L. Ruddell, and A. Sciortino (2012), H<sub>2</sub>O! Classroom demonstrations and activities for improving student learning of water concepts, ED11C-0743, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

**Dankovich, L.J.**, D.C. Mays and R.M. Neupauer (2012), An interactive software tool for examining the effect of well placement and pumping rate on reaction fronts for in situ remediation, H43E-1401, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

**Jones, M.N.**, D.C. Mays and R.M. Neupauer (2012), Physical apparatus to demonstrate stretching and folding of contaminant/treatment solution in aquifers by extraction and injection, H43E-1408, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

**Krauss, E.D.** and D.C. Mays (2012), Introducing the bulking factor to quantify clogging in petroleum formation evaluation, V23D-2874, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

**Piscopo, A.N.**, R.M. Neupauer and D.C. Mays (2012), Spreading due to heterogeneity during engineered injection and extraction for in situ remediation of contaminated groundwater, H23B-1356, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

**Roth, E.J., M.E. Mont-Eton** and D.C. Mays (2012) Linking colloid deposit morphology and clogging in porous media, H43E-1407, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

**Webber, B.D.**, R.M., Neupauer, **A.N. Piscopo** and D.C. Mays (2012), Engineered injection and extraction for enhanced in situ remediation of sorbing solutes in groundwater, H43E-1411, Fall Meeting, American Geophysical Union, San Francisco, California, December 3-7, 2012.

Neupauer, R.M., S. Burian, J.W. Lauer, P. Mathisen, D.C. Mays, C. Pomeroy, B. Ruddell, A. Sciortino and A. Chan Hilton (2012), Classroom demonstration activities for improving student learning of hydraulics and fluid mechanics concepts, World Environmental and Water Resources Congress, American Society of Civil Engineers, Albuquerque, New Mexico, May 20-24, 2012.

Chan Hilton, A., J.W. Lauer, D.C. Mays, M. Olson, B. Ruddell, A. Sciortino and R.M. Neupauer (2012), Classroom demonstration activities for improving student learning of surface water concepts, World Environmental and Water Resources Congress, American Society of Civil Engineers, Albuquerque, New Mexico, May 20-24, 2012.

Neupauer, R.M., A. Chan Hilton, D.C. Mays, M. Olson, B. Ruddell, P. Mathisen and A. Sciortino (2012), Classroom demonstration activities for improving student learning of groundwater concepts, World Environmental and Water Resources Congress, American Society of Civil Engineers, Albuquerque, New Mexico, May 20-24, 2012.

Mays, D.C., **E.J. Roth**, T.C. Lei, J.B. Ajo-Franklin, and B. Gilbert (2012), Colloids, deposits, and clogging in groundwater remediation, Subsurface Biogeochemical Research Program, Principal Investigator Meeting, Washington, DC, April 30-May 2, 2012.

**Piscopo, A.N.**, D.C. Mays and R.M. Neupauer (2011), Developing injection/extraction schemes to enhance mixing in groundwater for improved in-situ remediation, H31E-1214, Fall Meeting, American Geophysical Union, San Francisco, California, December 5-9, 2011.

**Fuller, K.**, R.M. Neupauer and D.C. Mays (2011), Genetic algorithm optimization of injection and extraction patterns for in-situ remediation of groundwater, MODFLOW and More 2011, International Ground Water Modeling Center, Golden, Colorado, June 5-8, 2011.

**Rhodes, E.P.**, Z.J. Ren, and D.C. Mays (2010), Zinc leaching from tire crumb rubber, B51D-0387, Fall Meeting, American Geophysical Union, San Francisco, California, December 13-17, 2010.

Mays, D.C., **O.T. Cannon**, **A.W. Kanold**, **K.J. Harris**, T.C. Lei and B. Gilbert (2009), In situ measurement of deposit morphology in porous media by static light scattering, H43B-1020, Fall Meeting, American Geophysical Union, San Francisco, California, December 14-18, 2009.

Neupauer, R.M and D.C. Mays (2009), Injection and extraction schemes to enhance mixing in groundwater, H41D-0925, Fall Meeting, American Geophysical Union, San Francisco, California, December 14-18, 2009.

**Coughlin, J.P.** and D.C. Mays (2008), Infiltration and clogging with pervious concrete pavement, Hydrology Days, American Geophysical Union, Ft. Collins, Colorado, March 26-28, 2008.

Mays, D.C., T.L. Oreskovic, P.S. Rice, and N. Varaksa (2006), Environmental impact of nanotechnology: Current understanding and future research, Grand Opening of the Nanomaterials Characterization Facility, University of Colorado, Boulder, Colorado, 16 November 2006.

Mays, D.C. (2005), Contrasting clogging in soils and granular media filters, H31F-1358, Fall Meeting, American Geophysical Union, San Francisco, California, December 5-9, 2005.

Mays, D.C. (2005), Environmental transport of engineered nanoparticles: Importance and potential for research collaboration, CU-NIST Fall Symposium, Boulder, Colorado, November 14, 2005.

Mays, D.C. and J.R. Hunt (2004), Hydrodynamics and long-term permeability evolution in clogging porous media, H11E-0337, Fall Meeting, American Geophysical Union, San Francisco, California, December 13-17, 2004.

Mays, D.C. and J.R. Hunt (2003), Fluid velocity, particle penetration and permeability reduction in clogging porous media, H41D-1023, Fall Meeting, American Geophysical Union, San Francisco, California, December 8-12, 2003.

Hunt, J.R. and D.C. Mays (2001), Episodic particle dynamics in the subsurface, H42C-0368, Fall Meeting, American Geophysical Union, San Francisco, California, December 10-14, 2001.

## **SEMINARS PRESENTED**

Reactive transport, dynamic permeability, and feedback (INVITED), University of Colorado Boulder, Boase Hydrologic Sciences and Water Resources Engineering Seminar Series, Boulder, Colorado, October 23, 2024.

Nudging new engineering faculty for inclusive teaching, Engineering Education and Centers Grantees Conference, U.S. National Science Foundation, Alexandria, Virginia, September 11-12, 2024.

Out of chaos comes engineered injection and extraction (INVITED), Istanbul Technical University, Department of Environmental Engineering, Istanbul, Turkey, July 25, 2023.

Inspiration, innovation, and iteration: Engineering chaos into groundwater remediation, University of Colorado Denver, Department of Civil Engineering, May 22, 2023.

Out of chaos comes engineered injection and extraction, University of Colorado Denver, Engineering Seminar, Denver, Colorado, March 7, 2023.

Oil spill and water flush, Metropolitan State University of Denver, Environmental Engineering Program, Denver, Colorado, May 3, 2022.

Faculty Learning Community ENNTICE; University of Colorado Denver; College of Engineering, Design and Computing; Education, Outreach, and Broader Impacts Grant Symposium, November 12, 2021.

Chaotic advection: Rethinking aquifers as porous media reactors, Colorado School of Mines, Environmental Seminar Series, Golden, Colorado, April 19, 2019.

Uranium, groundwater, supercomputing, and chaos, University of Colorado Boulder, Hydrologic Sciences and Water Resources Engineering Seminar, Boulder, Colorado, January 24, 2018.

Chaotic advection by engineered injection and extraction, School of Engineering and Technology, University of Hertfordshire, England, September 8, 2017.

Methane leakage and the greenhouse gas footprint of natural gas, Department of Chemical Engineering and Biotechnology, University of Cambridge, England, September 7, 2017.

Chaotic advection for groundwater remediation: Simulations, experiments, and (future) field tests, Pacific Northwest National Laboratory, Richland, Washington, June 19, 2017.

Methane leakage and the greenhouse gas footprint of natural gas, Colorado Oil and Gas Conservation Commission, Denver, Colorado, February 15, 2017.

Introduction to hydrology and hydraulics, CU South Denver, Mini Engineering School for Civil Engineering, February 1, 2017.

Chaotic advection and reactive transport in alluvial aquifers, Rifle Science Community Teleconference, Sustainable Systems Science Focus Area (SFA) 2.0, Lawrence Berkeley National Laboratory, Berkeley, California, March 8, 2016.

Linking colloidal phenomena and permeability in porous media, University of New South Wales, School of Civil and Environmental Engineering, Sydney, Australia, December 10, 2015.

Methane leakage and the greenhouse gas footprint of natural gas, University of Sydney, School of Geosciences, Thinking Space Seminar, Sydney, Australia, December 9, 2015.

Methane leakage and the greenhouse gas footprint of natural gas, University of Colorado Denver, Engineering Seminar, Denver, Colorado, November 3, 2015.

Plume spreading for improved groundwater remediation, Colorado Ground Water Association, Monthly Meeting Presentation, Denver, Colorado, March 18, 2015.



Methane leakage and the carbon footprint of electricity from natural gas, University of Colorado Boulder, Sustainability Research Network Seminar, Boulder, Colorado, November 5, 2014.

Simple chaos, Regis University, Honors Program, Denver, Colorado, March 12, 2014.

Groundwater, fractals, and chaos, Portland State University, Department of Geology, Portland, Oregon, February 25, 2014.

Thinking about porous media: Grape Nuts, fractals, and chaos, California State University East Bay, Department of Engineering, Hayward, California, January 21, 2014.

Reactors with non-ideal flow, University of Colorado Boulder, Environmental Engineering Program, Boulder, Colorado, October 29, 2013.

Advanced wastewater treatment and sludge management, University of Colorado Boulder, Environmental Engineering Program, Boulder, Colorado, October 28, 2013.

Groundwater, fractals, and chaos, San Diego State University, Department of Civil, Construction, and Environmental Engineering, San Diego, California, May 10, 2013.

Classroom demonstration activities for improving student learning of hydraulics and fluid mechanics concepts, University of Colorado Denver, Math and Science Learning and Education Consortium, STEM Education Symposium, Denver, Colorado, October 25, 2012.

Fractals, chaos... and groundwater, University of Colorado Denver, Engineering Seminar, Denver, Colorado, September 19, 2012.

Fractals, chaos... and groundwater, University of Colorado Boulder, Hydrologic Sciences and Water Resources Engineering Seminar, Boulder, Colorado, February 15, 2012.

Water, nanoparticles, lasers, and fractals, University of Wyoming, Environmental Engineering Seminar, Laramie, Wyoming, March 21, 2011.

From colored chalk to Bloom's taxonomy, University of Colorado Denver, Faculty Development Center, Denver, Colorado, April 2, 2008 and March 19, 2009.

Clogging in porous media—A little clay goes a long way, U.S. Geological Survey, National Research Program, Lakewood, Colorado, May 15, 2007.

Clogging in porous media—A little clay goes a long way, University of Colorado at Boulder, Hydrology, Water Resources, and Environmental Fluid Mechanics Seminar, Boulder, Colorado, April 25, 2007.

Differential equations, contaminant transport, and public welfare, Colorado College, Department of Mathematics and Computer Science, Fearless Friday Seminar, Colorado Springs, Colorado, February 2, 2007.

Hydrodynamics and clogging in soils, filters and membranes, Colorado School of Mines, Environmental Science and Engineering Seminar Series, Golden, Colorado, April 6, 2006.

## **COURSES TAUGHT**

### UNDERGRADUATE COURSES

CVEN-3313, Fluid Mechanics (<http://www.ucdenver.edu/dmays/3313>)

CVEN-3414, Water Supply and Distribution Systems (<http://www.ucdenver.edu/dmays/3414>)

CVEN-4426, Pipe Network and Sewer Design (<http://engineering.ucdenver.edu/dmays/4426>)

### GRADUATE COURSES

CVEN-5333, Surface Water Hydrology (<http://www.ucdenver.edu/dmays/5333>)

CVEN-5334, Groundwater Hydrology (<http://www.ucdenver.edu/dmays/5334>)

CVEN-5335, Vadose Zone Hydrology (<http://www.ucdenver.edu/dmays/5335>)

CVEN-5426, Pipe Network and Sewer Design (<http://engineering.ucdenver.edu/dmays/5426>)

## **RECOGNITIONS and HONORS**

Faculty Award for Excellence in Teaching, University of Colorado Denver, 2024.

Excellence in Service and Leadership, University of Colorado Denver, College of Engineering and Applied Science, 2017.

Outstanding Faculty Advisor, Region 7, American Society of Civil Engineers, 2016.

Outstanding Faculty in Teaching, University of Colorado Denver, College of Engineering and Applied Science, 2014.

University of Colorado Denver Nominee, Science and Engineering Research Program, Keck Foundation, Spring 2013.

Excellence in Teaching Award, University of Colorado Denver, College of Engineering and Applied Science, 2009.

ExCEED Teaching Fellow, American Society of Civil Engineers, 2007.

Office of Civilian Radioactive Waste Management Fellowship, U.S. Department of Energy, 2000-2004.

Outstanding Graduate Student Instructor, University of California Berkeley, 2000.

Jane Lewis Fellowship, University of California Berkeley, 1998-1999.

Sydney Shore Memorial Prize, for desire, aptitude, and ability to apply civil engineering principles to the solution of socially relevant issues, University of Pennsylvania, 1995.

Tau Beta Pi, Pennsylvania Delta Chapter, 1994.

TO ADVISEES

Harlan Erker Memorial Scholarship to Eleanor Fahrney, Colorado Ground Water Association, 2024.

Rich Herbert Memorial Scholarship to Eleanor Fahrney, Colorado Section, American Water Resources Association, 2024.

Outstanding Graduate Student to Michael Mont-Eton, Department of Civil Engineering, University of Colorado Denver, 2023.

Outstanding Graduate Student to Steven Klawitter, Department of Civil Engineering, University of Colorado Denver, 2022.

Graduate School Diversity, Equity, and Inclusion Award to graduate student Cynthia Rice, University of Colorado Denver, 2021.

Online Teaching Fellowship to graduate student Cynthia Rice, Graduate School, University of Colorado Denver, 2020.

Civil Engineering Scholarship to undergraduate student Michael "Alex" McPherson, Southern Colorado Branch, American Society of Civil Engineers, 2019.

Younger Members Group Scholarship to undergraduate student Michael "Alex" McPherson, Denver Branch, Colorado Section, American Society of Civil Engineers, 2019.

Jaqueline Arcaris Civil Engineering Scholarship to undergraduate student Philip Taylor, Colorado Section, American Society of Civil Engineers, 2018.

1<sup>st</sup> Place in Pre-Design, to the 2017/2018 Pre-Design Team<sup>5</sup> of the University of Colorado Denver Student Chapter of the American Society of Civil Engineers, Rocky Mountain Student Conference, Rapid City, South Dakota, April 5-7, 2018.

1<sup>st</sup> Place in Mystery Design, to the team including Nathan Werner of the University of Colorado Denver Student Chapter of the American Society of Civil Engineers, Rocky Mountain Student Conference, Rapid City, South Dakota, April 5-7, 2018.

3<sup>rd</sup> Place in Steel Bridge Display, to the 2016/2017 Steel Bridge Team<sup>6</sup> of the University of Colorado Denver Student Chapter of the American Society of Civil Engineers, Rocky Mountain Student Conference, Salt Lake City, Utah, April 4-8, 2017.

Younger Members Group Scholarship to undergraduate student Todd Santee, Colorado Section, American Society of Civil Engineers, 2016.

1<sup>st</sup> Place in Stiffness, to the 2014-2015 Steel Bridge Team<sup>7</sup> of the University of Colorado Denver Student Chapter of the American Society of Civil Engineers, Rocky Mountain Student Conference, Albuquerque, New Mexico, April 9-11, 2015.

1<sup>st</sup> Place in Mystery Design, to the team including Fernando Molina of the University of Colorado Denver Student Chapter of the American Society of Civil Engineers, Rocky Mountain Student Conference, Ft. Collins, Colorado, April 3-5, 2014.

2<sup>nd</sup> Place in Steel Bridge Display, to the 2013-2014 Steel Bridge Team<sup>8</sup> of the University of Colorado Denver Student Chapter of the American Society of Civil Engineers, Rocky Mountain Student Conference, Ft. Collins, Colorado, April 3-5, 2014.

Carl Kisslinger Graduate Student Award to graduate student Jennifer Chipman, Retired Faculty Association, University of Colorado, 2012-2013.

Outstanding Research and Creative Activity Award to graduate student Jennifer Chipman, University of Colorado Denver, 2012.

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<sup>5</sup> Philip Taylor (captain), Dan Barlow, Badr B.E. Husini, Whitney Benson, Khalil Elareir, Liz Taylor, and Nathan Werner.

<sup>6</sup> Aaron Blahut (captain), Erik Causey, Ben Johnk, Xavier Montoya, Jackson Pedziwiatr, Stephen Sowel, and Dahria Uwamahoro.

<sup>7</sup> Jimmy Botsonis (captain), Boateng Akyeampong, Prince Appiah, Peter Botsonis, Doron Levary, Fernando Molina, Emily Sedbrook, Christopher Shipman, Brian Vines, and Di Wei.

<sup>8</sup> Justin Dorough (captain), Prince Appiah, Jimmy Botsonis, Peter Botsonis, Christopher Florence, Ronson Fox, Omer Karaketir, Doron Levary, Fernando Molina, Rajan Parajuli, Nate Parker, Christopher Shipman, and Brian Vines.

Outstanding Research and Creative Activity Award to graduate student Emily Rhodes, jointly advised with Z.J. Ren, University of Colorado Denver, 2010.

Outstanding Research and Creative Activity Award to graduate student Adam Kanold, University of Colorado Denver, 2008.

## **ONLINE PROFILES**

ORCID 0000-0002-5218-1670 (<https://orcid.org/0000-0002-5218-1670>)

Google Scholar (<http://scholar.google.com/citations?user=u2fYOKgAAAAJ>)

ResearchGate ([http://www.researchgate.net/profile/David\\_Mays3](http://www.researchgate.net/profile/David_Mays3))

LinkedIn (<https://www.linkedin.com/in/dcmays>)

Instagram (<https://www.instagram.com/david.mays.pe/>)

## **PROFESSIONAL ORGANIZATIONS**

American Geophysical Union, member 1999-present

American Society for Engineering Education, member 2023-present

American Society of Civil Engineers, member 1993-present

Association of Environmental Engineering and Science Professors, member 2005-present

Colorado Ground Water Association, member 2013-present

International Society of Porous Media (InterPore), member 2014-present

## **PROFESSIONAL DEVELOPMENT**

AMPLIFY Institute, University of Texas at El Paso, September 26-27, 2024.

Inclusive Pedagogy Academy, Center for Excellence in Teaching and Learning, University of Colorado Denver, January 15-June 18, 2021.

Creating an Inclusive and Supportive Online Learning Environment, microcredential, Association of College and University Educators (ACUE), April 8-May 11, 2021.

Hybrid-Flexible Teaching Summer Academy, thinqstudio, University of Colorado Denver, June 1-August 7, 2020.

Aspire Summer Institute, Aspire National Alliance for Inclusive and Diverse STEM Faculty, June 15-19, 2020.

Institute for the Development of Excellence in Assessment Leadership, Accreditation Board for Engineering and Technology (ABET), New Orleans, Louisiana, January 5-8, 2015.

Exploring Cultural Competency, Faculty Learning Community, Metropolitan State University of Denver and Regis University, Denver, Colorado, 2013-2014.

Excellence in Civil Engineering Education (ExCEED) Workshop, American Society of Civil Engineers, University of Northern Arizona, Flagstaff, Arizona, July 16-20, 2007.

Summer Institute, Teach for America, University of Houston, June-July 1995.

## **SUPPORT RECEIVED**

Meet our moment: Engineering can work for everyone (PI), University of Colorado Denver, Grand Challenges Grants Program, **\$100,000** from 2024-2025.

Engineering is not neutral: Transforming instruction via collaboration and engagement (ENNTICE) (PI), U.S. National Science Foundation, Broadening Participation in Engineering, Award 2040095, **\$350,000** from 2021-2025.

NSF INCLUDES alliance: Broadening career pathways in food, energy, and water systems with and within Native American communities (Native FEWS Alliance) (co-PI), U.S. National Science Foundation, Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES), Award 2120001, **\$299,776** (plus \$6,771,969 to collaborators) from 2021-2026.

Environmental Stewardship of Indigenous Lands Scholarship Program (PI), U.S. National Science Foundation, Scholarships for Science, Technology, Engineering, and Mathematics (S-STEM), Award 1742603, **\$1,000,000** from 2018-2024.

NSF INCLUDES DDLP: Building a network for education and employment in environmental stewardship of Indigenous lands (co-PI), U.S. National Science Foundation, Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES), Award 1744524, **\$298,484** from 2018-2020.

Hydrologic and microbiological impacts of sealing abandoned mines with bulkheads (PI), University of Colorado Denver, Office of Research Services, **\$24,000** from 2017-2018.

Collaborative research: Coupled numerical and laboratory investigations of chaotic advection to enhance spreading and reaction in three-dimensional, heterogeneous porous media (PI), U.S. National Science Foundation, Hydrologic Sciences Program, Award 1417005, **\$90,626** (plus \$493,443 to collaborators) from 2014-2018.

Collaborative research: Innovative injection and extraction schemes to enhance mixing in aquifers for improved in situ remediation (PI), U.S. National Science Foundation, Hydrologic Sciences Program, Award 1113996, **\$98,395** (plus \$256,197 to collaborators) from 2011-2014.

Linking deposit morphology and clogging in subsurface remediation (PI), U.S. Department of Energy, Subsurface Biogeochemical Research Program, **\$150,000** from 2011-2013.

Trash to treasure: Using crumb rubber from recycled tires for stormwater pollution control (PI), Colorado Department of Public Health and Environment, Advanced Technology Grant Program, **\$96,600** from 2009-2011.

In situ measurement of deposit morphology in porous media (co-PI), Lawrence Berkeley National Laboratory, Earth Sciences Division, **\$50,000** from 2007-2011.

Sustainable concrete bacterial filtration system for developing communities (co-PI), Environmental Protection Agency, P3 Awards: A National Student Design Competition for Sustainability Focusing on People, Prosperity, and the Planet, **\$10,000** from 2006-2007.

## **SERVICE**

### EXTERNAL

Manuscript Referee for *Advances in Water Resources*, *Environmental Science and Technology*, *Geophysical Research Letters*, *Hydrogeology Journal*, *Journal of Colloid and Interface Science*, *Journal of Contaminant Hydrology*, *Transport in Porous Media*, *Water*, and *Water Resources Research* (2019-present).

Promotion Reviewer, for faculty applying for promotion at peer institutions, 2020-2024.

Proposal Reviewer, U.S. National Science Foundation, 2006-2022.

Proposal Reviewer, U.S. Department of Defense, 2020.

Session Convener, Natural and Engineered Chaotic Advection in Geophysical Flows (H23K), Annual Meeting, American Geophysical Union, Washington, DC, 9-13 December 2024.

Session Chair, Collaborative Network for Engineering and Computing Diversity (CoNECD), Arlington, Virginia, February 25-27, 2024.

External Member, Doctoral Exam Committee, Michelle Cho, "Chaotic advection for enhanced reagent mixing" (advisor Neil Thomson), University of Waterloo, Ontario, Canada, 2019.

Session Chair, Zone IV Conference, American Society for Engineering Education, Boulder, Colorado, March 25-27, 2018.

Member, Excellence in Water Resources Education Committee, Environmental and Water Resources Institute, American Society of Civil Engineers, 2008-2013.

Session Chair, CP17—Groundwater Transport and Uncertainty (organized by M. Kern and M. Putti), Conference on Mathematical and Computational Issues in the Geosciences, Society of Industrial and Applied Mathematics, Padua, Italy, June 17-20, 2013.

Session Chair, Environmental Aspects (organized by K.L. Chen and W.P. Johnson), 86<sup>th</sup> Colloid and Surface Science Symposium, American Chemical Society, Baltimore, MD, June 10-13, 2012.

Session Chair, Emerging Issues and Solutions for Sustainable Water and Wastewater Systems (organized by Z.J. Ren), 242<sup>nd</sup> National Meeting, American Chemical Society, Denver, Colorado, August 28-September 1, 2011.

Co-Host, Distinguished Lecturer Series, Association of Environmental Engineering and Science Professors (1) Tony Fane of the University of New South Wales, lecture at the Colorado School of Mines, February 18, 2009; (2) Richard Luthy of Stanford University, lecture at the University of Colorado Boulder, October 19, 2011.

Tutor, Colorado Association of Black Professional Engineers and Scientists, 2006-2007.

Donor, African Universities Book and Equipment Support Initiative, 2006-2007.

#### INTERNAL

Leader, Hydrologic, Environmental, and Sustainability Engineering (HESE) Graduate Track, Department of Civil Engineering, 2019-present.

Member, University Curriculum Committee, 2018-present.

Chair, Assessment Committee, Department of Civil Engineering, 2014-present.

Host, Engineering Seminar by Ebony Omotola McGee, “Black Brown Bruised: How Racialized STEM Education Stifles Innovation,” College of Engineering, Design and Computing, 2021.

Reviewer, Interfolio Implementation Project, for annual faculty reviews, University of Colorado Denver, 2020.

Member, Standing Review Committee, Office of Research Services, 2016-2019.

Faculty Advisor, Student Chapter, American Society of Civil Engineers, 2012-2019.

Chair, Graduate Admissions Committee, Department of Civil Engineering, 2006-2019.

Chair, Ad Hoc Committee on Performance Criteria for Clinical Teaching Track Faculty, College of Engineering and Applied Science, 2013-2015.



Laboratory Coordinator, Environmental and Water Resources Laboratory, Department of Civil Engineering, 2005-2014.

Member, Accreditation Board for Engineering and Technology (ABET) Best Practices Committee, College of Engineering and Applied Science, 2011-2012, 2013-2014, 2015-2016.

Member, Faculty Search Committee, Department of Civil Engineering: Environmental Engineering 2007-2008; Civil Infrastructure Systems 2011-2012; Structural Engineering 2012-2013.

Member, Summer Initiatives Group, 2012-2013.

Member, Scholarship Committee, College of Engineering and Applied Science, 2012-2013.

Member, Faculty Development Grant Selection Committee, 2011.

Member, Excellence in Teaching Award Selection Committee, 2010.

Program Leader, Environmental and Sustainability (E&S) Graduate Track, Department of Civil Engineering, 2007-2009.