

DANIEL W. BAKER, PH.D., P.E.

EDUCATION

Ph.D.	Civil Engineering, Colorado State University, Fort Collins, CO, 2009 Specialized in River Mechanics and Stream Restoration	3.97 / 4.00 GPA
M.S.	Civil Engineering. Montana State University, Bozeman, MT, 2001 Specialized in Transportation and Hydraulics	3.77 / 4.00 GPA
B.S.	Civil Engineering, Montana State University, Bozeman, MT, 1999 Graduated with Honors	3.50 / 4.00 GPA

ACADEMIC EXPERIENCE

TEACHING ASSOCIATE PROFESSOR

JULY 2021 – PRESENT

TEACHING ASSISTANT PROFESSOR

AUGUST 2015 – JUNE 2021

Department of Civil & Environmental Engineering
Colorado State University-Fort Collins, CO

RESEARCH

- Leading *First- to Third-Year Peer-Mentoring Program Pilot* as part of Walter Scott, Jr. College of Engineering (WSCoE) Engineering Education Initiative 2022-2023
- Coordinating National Park Service project: *Answering Ecological Management Questions for Aquatic Resources in National Parks using GIS and Remote Sensing Tools*
- Coordinating monitoring in conjunction with the Colorado Parks and Wildlife on *Riparian Vegetation Monitoring on the Upper Arkansas River*

TEACHING:

- Taught over 5200 students in CIVE 260 Statics and CIVE 261 Dynamics (see Courses Taught section below for a summary)
- Lead author and project coordinator for Engineering Statics: Open and Interactive <https://engineeringstatics.org>, open educational resources (OER) textbook for Engineering Mechanics: Statics. As of November 2022, the textbook is being used monthly by >25k global users viewing >120k pages and saving CSU students around \$45k a year.
- Invited lecturer for NR420 Integrated Ecosystem Management
- Completed the fall 2018 Teaching Squares Peer Review program through the Institute for Teaching and Learning at Colorado State University, where I partnered with faculty from across the university to peer review each other's teaching practices

SERVICE:

- Master Teacher Initiative (MTI) Co-Coordinator for the Walter Scott, Jr. College of Engineering (2017-Present)
- Walter Scott, Jr. College of Engineering representative on Faculty Council Committee on Teaching and Learning (CoTL) (2022-Present)
- American Society of Engineering Education (ASEE) Rocky Mountain Section Chair (2022-Present)
- Member of CSU Open Educational Resources (OER) Committee (2022-Present)

RESEARCH SCIENTIST

AUGUST 2012 – AUGUST 2015

Department of Civil & Environmental Engineering
Colorado State University-Fort Collins, CO

Promoted to Research Scientist II and shifted from 12- to 9-month contract on July 1, 2014

RESEARCH

- Project design team for *Web-Based Guidance and Toolbox for Urban Stream Systems* with U.S. Army Corps of Engineers - Engineer Research and Development Center in Vicksburg, MS
- PI for *Cache la Poudre River Post-Fire Sediment & Aquatic Insect Monitoring* in Fort Collins, CO
- *National Riparian Protocol Geomorphic Valley Classification Tool upgrade* and production of valley classification map data product for the western US
- Co-PI for *Design Hydrology for Stream Restoration and Channel Stability at Stream Crossings* a National Cooperative Highway Research Program project to better design stream crossings
- Various projects related to assessing the current and future health of the Poudre River in Fort Collins, including an *Ecological Response Model* and a *River Health Assessment Framework*

TEACHING:

- Taught *CIVE 260 Engineering Mechanics-Statics* (see *Courses Taught* section below for a summary)
- Invited lecturer for *CIVE 330 Ecological Engineering*, *CIVE 613 Stream Rehabilitation Design*, *NR420 Integrated Ecosystem Management*, and *NR479 Ecological Restoration Case Studies*

POSTDOCTORAL FELLOW

APRIL 2010 – JULY 2012

Department of Geography & Environmental Engineering
Johns Hopkins University - Baltimore, MD

RESEARCH

- Stream Restoration Program Manager for the National Center for Earth-surface Dynamics (NCED) based at the University of Minnesota – Minneapolis, MN
- Program manager for *The Stream Project: Decision Analysis and Design Guidance for Stream Restoration* in partnership with NCED, U.S. Army Corps of Engineers, and the Intermountain Center for River Rehabilitation and Restoration in Logan, UT
- Led research team examining multiple spatial scales of NO₃ uptake in the Outdoor Stream Lab at the St. Anthony Falls Laboratory at the University of Minnesota in Minneapolis, MN

TEACHING:

- Invited lecturer *575.730 Geomorphologic and Ecologic Foundations of Stream Restoration* and *570.403 Ecology*

INSTRUCTOR AND COURSE DEVELOPER

JAN 2011 – PRESENT

Engineering for Professionals – Whiting School of Engineering
Johns Hopkins University - Elkridge, MD

TEACHING:

- Co-developed online course *575.730 Geomorphologic and Ecologic Foundations of Stream Restoration* with Prof. Peter Wilcock following Quality Matters online course guidelines
- Course delivered in Spring 2011-2012 & Spring 2012-present.

POSTDOCTORAL RESEARCHER AND INSTRUCTOR
Department of Civil and Environmental Engineering
Colorado State University-Fort Collins, Colorado

JULY 2009 –MAR 2010

RESEARCH:

- Developed monitoring protocol for urbanizing stream basins in southern California as part of the Southern California Coastal Water Research Project (SCCWRP)
- Co-built GIS valley classification algorithm using Python code and lead author on Sampling Design chapter for USFS *Riparian Monitoring Technical Guide for the Western US*
- GIS analysis for EPA Environmental Monitoring and Assessment Program (EMAP) sites
- Analysis of the current condition and impacts of reservoir expansion on the North Fork of the Cache la Poudre River for The Nature Conservancy

TEACHING:

- Instructed graduate-level *CIVE 521 Hydrometry* covering the principles, methods, and instruments for measuring water quantity and water quality in natural aquatic systems
- Invited lecturer for *CIVE 413 Environmental River Mechanics*

PH.D. / GRADUATE RESEARCH ASSISTANT
Department of Civil and Environmental Engineering
Colorado State University-Fort Collins, Colorado

JUN 2005 –JULY 2009

RESEARCH:

- Examined the ecological, geomorphic, and physical effects of diversion dams on mountain streams in a project funded by the EPA
- NSF funded research quantifying stream geomorphic complexity as it relates to the transient storage within agricultural and urban streams

TEACHING:

- Taught *CIVE 261 Engineering Mechanics: Dynamics* during the 8-week summer 2008 session
- Invited lecturer for senior level *CIVE 413 Environmental River Mechanics*
- Obtained *Certificate in College Teaching* through The Institute of Teaching and Learning

MASTER OF SCIENCE / GRADUATE RESEARCH ASSISTANT
Department of Civil Engineering
Montana State University - Bozeman, Montana

JAN 2000 – MAY 2001

RESEARCH:

- Funded by graduate research fellowship through the Western Transportation Institute
- Developed *Culvert Qualitative Rating System* for Montana Department of Transportation

AWARDS

- 2022 Most Inspiring Professor, CSU Engineering College Council Engineering Days, Colorado State University, Fort Collins, CO
- 2022 CSU Open Educator Award, Colorado State University, Fort Collins, CO
- 2022 Rams without Borders Best Faculty Award Finalist, Colorado State University, Fort Collins, CO
- 2021 Honors Professor of the Year Award Nominee, Colorado State University, Fort Collins, CO
- 2021 Friendliest Professor, CSU Engineering College Council Engineering Days, Colorado State University, Fort Collins, CO
- 2019 Ferdinand P. Beer and E. Russell Johnston, Jr. Outstanding New Mechanics Educator Award, Mechanics Division, American Society of Engineering Education, presented in Tampa, FL
- 2019 Most Supportive Professor, CSU Engineering College Council Engineering Days, Colorado State University, Fort Collins, CO
- 2018 Most Outdoorsy Professor, CSU Engineering College Council Engineering Days, Colorado State University, Fort Collins, CO
- 2017 Faculty Award for Excellence in Teaching, Dept. of Civil & Environmental Engineering, Colorado State University, Fort Collins, CO
- 2017 Voice of an Angel, CSU Engineering College Council Engineering Days, Colorado State University, Fort Collins, CO
- 2016 Funniest Professor, CSU Engineering College Council Engineering Days, Colorado State University, Fort Collins, CO
- 2014 Outstanding Research Scientist/Instructor, Dept. of Civil & Environmental Engineering, Colorado State University, Fort Collins, CO
- 2008 Borland Professorial Scholarship, Dept. of Civil & Environmental Engineering, Colorado State University, Fort Collins, CO
- 2007 Borland Advanced Graduate Student Scholarship, Dept. of Civil & Environmental Engineering, Colorado State University, Fort Collins, CO
- 2006 Whitney Borland Scholarship, Dept. of Civil & Environmental Engineering, Colorado State University, Fort Collins, CO
- 1998 Greek Man of the Year, Montana State University
- 1997 Deans Outstanding Student Award presented by Tau Beta Pi in the College of Engineering, Montana State University, Bozeman, MT
- 1995 C. M. Russell High School Boys Basketball Team Captain, Great Falls, MT
- 1995 Rustler Spirit Award, C. M. Russell High School, Great Falls, MT

COURSES TAUGHT

UNIVERSITY COURSES

Course¹	Semester	Delivery	Students	Overall Rating^{2,4}
CSU - CIVE 261 Dynamics (4 sections = 3 on-campus + 1 online)	Spring 2023	Classroom & Online	TBD	NA
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2022	Classroom & Online	261	NA
CSU - CIVE 261 Dynamics (3 sections = 2 on-campus + 1 online)	Spring 2022	Classroom & Online	173	NA
JHU - 575_730_81 Stream Restoration	Spring 2022	Online	6	TBD

Course¹	Semester	Delivery	Students	Overall Rating^{2,4}
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2021	Classroom & Online	249	NA
CSU - CIVE 261 Dynamics (4 sections = 3 on-campus + 1 online)	Spring 2021	Classroom & Online	260	NA
JHU - 575_730_81 Stream Restoration	Spring 2021	Online	13	4.4
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2020	Classroom & Online	269	NA
CSU - CIVE 261 Dynamics	Fall 2020	Classroom	86	NA
CSU - CIVE 261 Dynamics (4 sections = 3 on-campus + 1 online)	Spring 2020	Classroom & Online	223	NA
JHU - 575_730_81 Stream Restoration	Spring 2020	Online	5	4.5
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2019	Classroom & Online	269	NA
CSU - CIVE 261 Dynamics	Fall 2019	Classroom	82	NA
CSU - CIVE 261 Dynamics (4 sections = 3 on-campus + 1 online)	Spring 2019	Classroom & Online	236	NA
JHU - 575_730_81 Stream Restoration	Spring 2019	Online	7	4.20
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2018	Classroom & Online	234	4.83
CSU - CIVE 261 Dynamics	Fall 2018	Classroom	92	4.76
CSU - CIVE 260 Statics	Spring 2018	Classroom	104	4.90
CSU - CIVE 261 Dynamics (4 sections = 2 on-campus + 1 online)	Spring 2018	Classroom & Online	199	4.75
JHU - 575_730_81 Stream Restoration	Spring 2018	Online	17	3.85
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2017	Classroom & Online	235	4.87
CSU - CIVE 261 Dynamics	Fall 2017	Classroom	100	4.75
CSU - CIVE 261 Dynamics (4 sections = 2 on-campus + 1 online)	Spring 2017	Classroom & Online	212	4.74
JHU - 575_730_81 Stream Restoration	Spring 2017	Online	12	4.30
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2016	Classroom & Online	313	4.87
CSU - CIVE 261 Dynamics	Fall 2016	Classroom	127	4.77
CSU - CIVE 260 Statics	Spring 2016	Classroom	137	4.94
CSU - CIVE 261 Dynamics (3 sections = 2 on-campus + 1 online)	Spring 2016	Classroom & Online	212	4.82
JHU - 575_730_81 Stream Restoration	Spring 2016	Online	12	3.95
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2015	Classroom & Online	236	4.81
CSU - CIVE 261 Dynamics	Fall 2015	Classroom	123	4.51
CSU - CIVE 260 Statics	Spring 2015	Classroom	135	4.47
JHU - 575_730_81 Stream Restoration	Spring 2015	Online	11	4.45
CSU - CIVE 260 Statics (3 sections = 2 on-campus + 1 online)	Fall 2014	Classroom & Online	243	4.65

<u>Course</u> ¹	<u>Semester</u>	<u>Delivery</u>	<u>Students</u>	<u>Overall Rating</u> ^{2,4}
CSU - CIVE 260 Statics	Spring 2014	Classroom	63	4.76
JHU - 575_730_81 Stream Restoration	Spring 2014	Online	18	4.30
CSU - CIVE 260 Statics (2 sections = 1 on-campus + 1 online)	Fall 2013	Classroom & Online	97	4.76
CSU - CIVE 260 Statics	Spring 2013	Classroom	57	4.89
JHU - 575_730_81 Stream Restoration	Spring 2012	Online	18	4.30
JHU - 575_730_81 Stream Restoration	Spring 2011	Online	18	4.65 ³
CSU - CIVE 521 Hydrometry	Fall 2009	Classroom	5	4.40
CSU - CIVE 261 Dynamics	Summer 2008	Classroom	21	4.42

¹ Colorado State University (CSU), Johns Hopkins University (JHU)

² On a 1-5 scale related to an overall rating of the instructor by the students as part of the final course evaluation

³ Scaled from 1-4 scale (3.7/4.0 average across all indicators)

⁴ Starting in the Spring of 2019, Colorado State University removed numerical ratings from course evaluations

NON-UNIVERSITY COURSES AND WORKSHOPS

CANVAS TIPS TO CREATE A STUDENT-FRIENDLY AND EASY-TO-MAINTAIN COURSE WEBSITE JANUARY 2020
Walter Scott, Jr. College of Engineering Master Teacher Initiative Workshop Series Fort Collins, CO

- Provided instruction on how to use modules in Canvas.
- Demonstrated setting up a homepage based upon a pre-set Design Tools theme and including a module table of contents.

GET IT RIGHT! CHOOSING THE APPROPRIATE LEVEL OF GEOMORPHIC AND SEDIMENT TRANSPORT ANALYSIS FOR CHANNEL DESIGN OCTOBER 2018
Sustaining Colorado Watersheds Conference Avon, CO

- Provided an introduction to NCHRP project (24-40), which developed scientifically supported methods for defining design hydrology for stream
- Provided interactive examples of the various hydrologic and hydraulic tools in the eRAMS system

DESIGN HYDROLOGY FOR STREAM RESTORATION & CHANNEL STABILITY AT STREAM CROSSINGS AUGUST 2016
National Hydraulic Engineering Conference (NHEC) Portland, OR

- Provided an overview of a NCHRP project (24-40), which developed scientifically supported methods for defining design hydrology for stream
- Provided interactive examples of the various hydrologic and hydraulic tools in the eRAMS system and also a Capacity Supply Ration calculator

STREAM PROJECT: HALF-DAY SHORTCOURSE INSTRUCTOR 2011-2012
Deliver Stream Project introduction and training to restoration practitioners at regional and national conferences, including:

- Mid-Atlantic Stream Restoration Conference, Flintstone, MD – Nov 2011
- River Restoration Northwest, Stevenson, WA – Jan 2012
- Upper Midwest Stream Restoration Symposium, Oconomowoc, WI – Feb 2012
- World Environmental & Water Resources Congress (EWRI-ASCE), Albuquerque, NM – May 2012
- Stream Restoration in the Southeast, Wilmington, NC – Nov 2012

SAGEHEN RIVER RESTORATION SHORTCOURSE: PRINCIPAL INSTRUCTOR AUGUST 2010
Sagehen Creek Field Station Lake Tahoe, CA

- Alternate course title: *Geomorphic and Ecological Fundamentals for River and Stream Restoration*
- Lectured on the relationship between water quality improvement and stream restoration

- Participated in classroom and field group exercises and discussions

RESEARCH PROJECTS - FUNDED

PRINCIPAL INVESTIGATOR

- \$17,175 (FY 2022-2023) Walter Scott, Jr. College of Engineering (WScOE) - Engineering Education Initiative 2022-2023, *First- to Third-Year Peer-Mentoring Program Pilot*
- \$14,000 (FY 2019-2020) Colorado State University, Office of the Provost - Digital Learning Initiative, *Digital Learning Enhancements for CIVE 260 – Statics*
- \$4,999 (FY 2019-2020) Colorado Department of Higher Education - Colorado Open Educational Resources (OER) Grant, *Digital Open Educational Resources (OER) for Statics*
- \$298,468 (FY 2016-2022) The United States Department of the Interior National Park Service, *Answering Ecological Management Questions for Aquatic Resources in National Parks using GIS and Remote Sensing Tools*
- \$20,000 (FY 2016) U.S. Army Corps of Engineers, Engineer Research and Development Center, *Web-Based tools to inform fish passage and environmental flow decisions.*
- \$49,000 (FY 2014-2015). Forest Service, National Stream and Aquatic Ecology Center, *National Riparian Protocol Geomorphic Valley Classification Tool upgrade and production of valley classification map data product for the western US*
- \$50,644 (FY 2015) U.S. Army Corps of Engineers, Engineer Research and Development Center, *Cooperative Agreement Extension #2: Web-Based Guidance and Toolbox for Urban Stream Systems*
- \$79,873 (FY 2014) U.S. Army Corps of Engineers, Engineer Research and Development Center, *Cooperative Agreement Extension #1: Web-Based Guidance and Toolbox for Urban Stream Systems*
- \$29,947 (FY 2013) City of Fort Collins, Natural Area's Program, *Ecological Response Model for the Fort Collins Reach of the Cache la Poudre River: Phase 1b*
- \$82,706 (FY 2012-2013) U.S. Army Corps of Engineers, Engineer Research and Development Center, *Web-Based Guidance and Toolbox for Urban Stream Systems*
- \$7,000 (FY 2012-2013) Bohemian Foundation via City of Fort Collins, Utilities and Natural Area's Program, *Cache la Poudre River Post-Fire Sediment & Aquatic Insect Monitoring*
- \$21,000 (FY 2012-2013) City of Fort Collins, Utilities and Natural Area's Program, *Cache la Poudre River Post-Fire Sediment & Aquatic Insect Monitoring: CFC*
- \$9,975 (FY 2012) City of Fort Collins, Natural Area's Program, *Ecological Response Model for the Fort Collins Reach of the Cache la Poudre River: Phase 1a*

CO-PRINCIPAL INVESTIGATOR

- \$118,750 (2015-2020) Colorado Parks and Wildlife, *Riparian Vegetation Monitoring on Upper Arkansas River*

- \$350,000 (2013-2016) Transportation Research Board – National Cooperative Highway Research Program, *Design Hydrology for Stream Restoration and Channel Stability at Stream Crossings* with B. Bledsoe and P. Nelson
- \$16,000 (2012-2014) Colorado Parks and Wildlife, City of Fort Collins, Natural Area's Program, *Cache la Poudre River Post-Fire Sediment & Aquatic Insect Monitoring: CPW* with B. Bledsoe

ADVISING

UNDERGRADUATE HONORS THESIS STUDENTS:

Sarah Martinez (2022)

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES

- Cubley, E. S., E. E. Richer, **D. W. Baker**, C. Lamson, T. Hardee, B. P. Bledsoe, and P. Kulchawik. 2022. River Research and Applications. <https://onlinelibrary.wiley.com/doi/full/10.1002/rra.3871>
- Casper, A. M. A., R. A. Atadero, A. Hedayati-Mehdiabadi, **D. W. Baker**. 2021. Linking Engineering Student's Professional Identity Development to Diversity and Working Inclusively in Technical Courses. *Journal of Civil Engineering Education* 147(4), <https://ascelibrary.org/doi/full/10.1061/%28ASCE%29EI.2643-9115.0000052>
- Tullos, D., M. Schwar, **D. W. Baker**, J. Schwartz, J. Crowe Curran. 2021. Enhancing resilience of river restoration design under climate change. *Journal of Hydraulic Engineering* 47(3), <https://ascelibrary.org/doi/full/10.1061/%28ASCE%29HY.1943-7900.0001853>
- Bestgen, K. R., N. L. Poff, B. P. Bledsoe, **D. W. Baker**, D. M. Merritt, M. Lorie, G. T. Auble, J. S. Sanderson, and B. C. Kondratieff. 2019. Designing flows to enhance ecosystem functioning in heavily altered rivers. *Ecological Applications*. <https://doi.org/10.1002/eap.2005>
- Mueller Price, J., B. P. Bledsoe and **D. W. Baker**. 2016. Effects of passive and structural stream restoration approaches on transient storage and nitrate uptake. *River Research and Applications*. doi: 10.1002/rra.3013
- Mueller Price, J., B. P. Bledsoe and **D. W. Baker**. 2015. Influences of Sudden Changes in Discharge and Physical Stream Characteristics on Transient Storage and Nitrate Uptake in an Urban Stream. *Hydrological Process*. 29(6), 1466-79 pp. doi: 10.1002/hyp.10275
- Niezgoda, S. L., P. R. Wilcock, **D. W. Baker**, J. M. Price, J. M. Castro, J. C. C. T. Wynn-Thompson, J. S. Schwartz and F. D. Shields, Jr. 2014. Defining a stream restoration body of knowledge as a basis for national certification. *Journal of Hydraulic Engineering, Journal of Hydraulic Engineering*. 140(2), 123-36. doi: 10.1061/(ASCE)HY.1943-7900.0000814
- Baker, D. W.**, B. P. Bledsoe and J. Mueller Price. 2012. Nitrate uptake and transient storage over a gradient of geomorphic complexity, north-central Colorado, USA. *Hydrological Processes* 26:3241-52. doi: 10.1002/hyp.8385.

Laub, B. G., **Baker, D. W.**, Palmer, M. A. and Bledsoe, B. P. 2012. Range of variability of channel complexity in urban, restored and forested reference streams. *Freshwater Biology* 57(5), 1076–1095. doi:10.1111/j.1365-2427.2012.02763.x.

Baker, D. W., B. P. Bledsoe, C. M. Albano and N. L. Poff, 2011. Downstream effects of diversion dams on sediment and hydraulic conditions of Rocky Mountain streams. *River Research and Applications* 27(3), 388–401. doi: 10.1002/rra.1376

Cahoon, J., **D. W. Baker** and J. Carson, 2002. Factors for rating the condition of culverts for repair or replacement needs. *Transportation Research Record No. 1814, Design of Structures: 197-202.*

NON-REFEREED JOURNAL ARTICLES / CHAPTERS / CONFERENCE PROCEEDINGS / REPORTS

Baker, D. W. and E. Davishahl. 2022. Collaborative Creation of an OER Textbook for Engineering Statics. Presented at 2022 ASEE Zone IV Conference, Vancouver, BC, Canada, May 12-14.

Baker, D. W. and S. L. Bechara. 2022. Amplify learning by infusing courses with learning science. Professional Development Institute. The Institute for Learning and Teaching. Colorado State University. Fort Collins, CO.

Baker, D. W. 2021. Join Me in the Trenches: an interactive workshop to finding or creating an OER textbook. Colorado Department of Higher Education Open Education Week. Online <https://youtu.be/uzOzaBqVITl>

Baker, D. W. and W. Haynes. 2020. Engineering Statics: Open and Interactive. Open educational resources (OER) textbook for Engineering Mechanics: Statics. <https://engineeringstatics.org>.

Baker, D. W. 2020. GeoGebra Interactives for Learning and Teaching. American Society of Engineering Education (ASEE) Annual Conference & Exposition. Online.

Gorakhki, M. R. H., **D. W. Baker** and S. F. Pilkington. 2019. Evaluating the Effect of Flipped Classroom on Students' Learning in Dynamics. American Society of Engineering Education (ASEE) Annual Conference & Exposition. Tampa, FL.

Hedayati-Mehdiabadi, R. A. Atadero, **D. W. Baker**, and A. Casper. 2019. The Effects of Infusing Diversity and Inclusion into a Design Problem in Engineering Mechanics: Statics. American Society of Engineering Education (ASEE) Annual Conference & Exposition. Tampa, FL.

Wej, X. and **D. W. Baker**. 2019. Evaluation of an Early Exam on Student Performance in Engineering Mechanics: Statics. American Society of Engineering Education (ASEE) Rocky Mountain Section Conference. Laramie, WY.

Baker, D. W. 2018. Get It Right! Choosing the Appropriate Level of Geomorphic and Sediment Transport Analysis for Channel Design. Sustaining Colorado Watersheds Conference, Avon, CO.

Baker, D. W. 2018. The use of GeoGebra virtual interactives in Statics to increase conceptual understanding. American Society of Engineering Education (ASEE) Annual Conference & Exposition. Salt Lake City, UT.

Gorakhki, M. R. H, K. Catton, N. A. Huq, A. J. Marchese, and **D. W. Baker**. 2018. Identifying factors for retention of engineering students in the first two years. American Society of Engineering Education (ASEE) Annual Conference & Exposition. Salt Lake City, UT.

- Bledsoe, B. P, **D. W. Baker**, P. Nelson, T. Rosburg, J. Sholtes, and T. Stroth. 2017. NCHRP Research Report 853: Guidance for Design Hydrology for Stream Restoration and Channel Stability. Transportation Research Board. <http://www.trb.org/NCHRP/Blurbs/176503.aspx>
- Baker, D.W. 2017. Hydro-Geomorphic Valley Classification (HGVC) Tool Overview. Workshop: Interagency riparian and wetland assessment - Best practices, innovative approaches, and opportunities for collaboration. Fort Collins, CO.
- Baker, D. W.**, S. F. Pilkington. 2017. Flipped Classroom Study CIVE 261: Dynamics. CSU Institute for Teaching and Learning Summer Conference. Fort Collins, CO.
- Bledsoe, B. P., J. A. Sholtes and **D. W. Baker**. 2016. Wetland and River Restoration in Handbook of Applied Hydrology, Second Edition, V. P. Singh (Editor). McGraw Hill, pp.1440.
- Baker, D. W.** and J. Shanahan, 2016. Developing a scientific foundation to assess and improve a community river: Case study from the Cache la Poudre River in Fort Collins, CO. Colorado Water (magazine), 33(4) pp. 19-21.
- Polvi, L. E and Baker D. W., 2016. Restoration of physical integrity of rivers. In *Oxford Bibliographies in Environmental Science*. Wohl, E. (ed) Oxford University Press, New York. DOI: 10.1093/OBO/9780199363445-0059
- Baker, D. W.**, B. P. Bledsoe, P. A. Nelson. 2016. Decision trees and analytical tools for designing more resilient streams at bridge crossings. American Society of Civil Engineers, World Environmental & Water Resources Congress, West Palm Beach, FL.
- Baker, D. W.**, T. C. Wible, M. Arabi, C. J. Fischenich. 2015. A Perfect Cloud-Based Marriage: Web-Served Data and River Analysis Tools on the eRAMS Platform. American Society of Civil Engineers, World Environmental & Water Resources Congress, Austin, TX.
- Baker, D. W.** and S. K. Adams. 2015. When do we need a snorkel? Practical lessons learned on monitoring cobble-bed rivers often barely-wadeable at low flows. American Geophysical Union - Hydrology Days, Fort Collins, CO.
- Baker, D. W.** 2014. Informing River Management Decisions on the Front Range of Colorado: Testing Potential Mitigation Scenarios with a Bayesian Ecological Response Model. American Society of Civil Engineers, World Environmental & Water Resources Congress, Portland, OR.
- Baker, D. W.**, 2014 The 2012 Fires and 2013 Floods: A knockout combination for the main stem of the Poudre River or business as usual? American Geophysical Union - Hydrology Days, Fort Collins, CO.
- National Riparian Technical Team. 2014-Draft. U.S.D.A. Forest Service National Riparian Vegetation Monitoring Core Protocol: Conterminous U.S. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fort Collins, CO. http://www.fs.fed.us/biology/watershed/riparian/USFS_National_Riparian_Protocol.pdf
- Baker, D. W.** 2013. Using a Bayesian Ecosystem Restoration Model to Make River Management Decisions on the Front Range of Colorado. American Society of Civil Engineers, World Environmental & Water Resources Congress, Cincinnati, OH.

- Baker, D. W.** and P. R. Wilcock, 2013. Improving the stream restoration design process with decision analysis, predictive design, and online portals. American Geophysical Union - Hydrology Days, Fort Collins, CO.
- Baker, D. W.**, B. P. Bledsoe, S. Rathburn, and N. LeRoy Poff. Cache La Poudre River Post-Fire Sediment & Macroinvertebrate Monitoring. 2012 RMHRC Annual Meeting, Fort Collins, CO.
- Baker, D. W.** 2012. Stream Project: Decision Analysis and Design Guidance for Stream Restoration. Upper Mid-West Stream Restoration Symposium – Partnership for River Restoration and Science in the Upper Midwest (PRRSUM). Minneapolis, MN.
- Baker, D. W.**, 2009. Land use effects on physical habitat and nitrate uptake in small streams of the central rocky mountain region. Ph.D. Dissertation. Department of Civil and Environmental Engineering. Colorado State University, Fort Collins, CO.
- Baker, D. W.**, 2001. Rating system for rural culvert crossing repair and maintenance. M.S. Thesis. Department of Civil Engineering. Montana State University, Bozeman, MT.
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INVITED SPEAKER PRESENTATIONS

- Baker, D.W.** 2021. Join me in the trenches: An interactive workshop to finding or creating an OER textbook. Colorado Department of Higher Education Colorado Open Ed Week. Online.
- Self, B., K. Mallouk, J. Sodhi, **D. W. Baker**, and K. DeGoede. 2021. Delivering the Best Learning Experience – What Works and What Doesn't: Reflections and Tips from New and Experienced Educators. Panel discussion at American Society of Engineering Education (ASEE) Annual Conference & Exposition. Online.
- Baker, D.W.** and S. Bechara. 2020. Options for Remotely Delivered Exams Based on Exam Objectives and Technology Level. Alternative Assessment Showcase presented by The Institute for Teaching and Learning at Colorado State University, Fort Collins, CO
- Baker, D.W.** 2019. Lessons from my Journey. Keynote address for the Academic Gala of the Rams Chapter of the National Residence Hall Honorary. Attendance: 290. Fort Collins, CO
- Baker, D.W.** 2018. *Intentional Wandering in Your Career Path*. CSU Honors Program Fireside Chat. Fort Collins, CO
- Baker, D.W.** 2017. *Intentional Wandering in Your Career Path*. CSU Honors Program Fireside Chat. Fort Collins, CO
- Baker, D. W.** 2017. *Ecological Functions and Interactions in Colorado Front Range Rivers*. Big Thompson Watershed Coalition. Loveland, CO
- Baker, D. W.** 2016. *Physical Stream Assessment: Lessons Learned on the Poudre*. Colorado Water Congress – Stream Management Plan Workshop. Steamboat Springs, CO
- Baker, D. W.** 2013. *What happens downstream? A discussion of impacts to aquatic biota after the fires*. Big Thompson Watershed Forum - 13th Watershed Conference. Greely, CO.
- Baker, D. W.** 2013. *Was the flood good, bad, or ugly for the health of the Poudre?* Poudre Runs Through It Study/Action Work Group. Fort Collins, CO.

NEWS ARTICLES RELATED TO MY WORK

Allen, Jenna. May 3, 2022. *This engineering textbook is making college cheaper and learning easier.*
<https://source.colostate.edu/open-engineering-textbook/>. Colorado State University Source.

Manning, Anne. Feb 7, 2023. *How can engineering education embrace ChatGPT? By treating it like a tool.*
<https://enr.source.colostate.edu/how-can-engineering-education-embrace-chatgpt-by-treating-it-like-a-tool/>. Colorado State University Source.

SERVICE, MEMBERSHIPS, & PROFESSIONAL DEVELOPMENT

SERVICE – DEPARTMENT

- Mentor WSCOE Summer Teaching Fellows CSU 2015 – Present
- CSU Civil & Environmental Engr. Accreditation Committee 2022 – Present
- CSU Civil & Environmental Engr. Code Committee 2019 – 2021
- CSU Civil & Environmental Engr. Undergraduate Instruction Comm. 2017 – 2022
 - Chair 2021 – 2022

SERVICE – COLLEGE

- CSU [Master Teacher Initiative \(MTI\)](#) Co-Coordinator for Engineering 2016 – Present
- CSU Dean Search Committee 2022 – 2023
- Engineering Science Faculty Advisory Committee 2021 – Present
- CSU College of Engr. Strategic Planning Advisory & Resource Comm. 2021
- Mentor WSCOE Ph.D. Teaching Fellows CSU 2015 – 2017

SERVICE – UNIVERSITY

- CSU Faculty Council Committee on Teaching and Learning (CoTL) 2022 – Present
- CSU Open Educational Resources Committee 2022 – Present
- CSU [Campus Bike Advisory Committee](#) member 2014 – Present
 - Co-Chairperson (Jan 2015 – Nov 2016)
- CSU Faculty Council Voting Member 2018 – 2020
- CSU Faculty Council [Committee on Non-Tenure-Track Faculty](#) 2017 – 2020
- CSU [Center for Analytics for Learning and Teaching \(ALT\)](#) 2014 – 2019

SERVICE – PROFESSIONAL

- American Society for Engineering Edu. - Rocky Mountain Section Chair 2022 – Present
- American Society for Engineering Edu. - Mechanics Div. Board of Dir. 2021 – Present
- American Society for Engineering Edu. – CSU Campus Representative 2021 – Present
- American Society for Engineering Edu. - Annual Conference Paper Reviewer
 - 6 papers 2023
 - 4 papers 2022
 - 6 papers 2021
 - 4 papers 2020
 - 3 papers 2019
- ASCE Task Comm. Implications of Climate Change on River Rest. Planning 2017 – 2020
- Expert Panel for WERF Stream Restoration BMP Database Module 2015
- [ASCE-EWRI River Restoration Committee](#) 2011 – 2017
 - Secretary 2013, Vice-Chair 2014, Chair 2015-2016
- ASCE Task Committee on Stream Restoration Educational Materials 2011 – 2014

- Chesapeake Bay Trust - Restoration Grant Review Team 2012
- Peer reviewer for the journal *Hydrological Processes* 2012 – Present
- Peer reviewer for the journal *Geomorphology* 2011 – Present
- Peer reviewer for the journal *River Research and Applications* 2010 – Present
- Peer reviewer for NSF Postdoctoral Fellowships 2010

GRADUATE STUDENT COMMITTEES

- | | | | |
|---------------------|----------|------------------|----------------------------------|
| ○ Mollel, Winrose | MECH-MS | Outside Member | Active |
| ○ Rodriguez, Felipe | MECH-PHD | Outside Member | Active |
| ○ Swartwout, Zack | MECH-MS | Outside Member | Active |
| ○ Countie, Matthew | MECH-MS | Outside Member | Graduated - Summer Session 2020 |
| ○ Balu, Alex | MECH-MS | Outside Member | Graduated - Spring Semester 2020 |
| ○ Bayliff, Scott | MECH-MS | Outside Member | Graduated - Spring Semester 2020 |
| ○ Greene, Jonah | MECH-MS | Outside Member | Graduated - Summer Session 2019 |
| ○ Pfeiffer, Andrew | GEOS-MS | Outside Member | Graduated - Spring Semester 2017 |
| ○ Lammers, Rod | CIVE-MS | Committee Member | Graduated - Summer Session 2015 |
| ○ Havel, Aaron | CIVE-MS | Committee Member | Graduated - Fall Semester 2015 |

MEMBERSHIPS

- American Society for Engineering Education (ASEE) 2014 – Present
- Society for Learning and Analytics Research (SoLAR) 2016 – 2019
- American Geophysical Union (AGU) 2006 – 2019
- American Society of Civil Engineers (ASCE) 2010 – 2019
- Society for Freshwater Science (SFS)* 2006 – 2015
- *formerly North American Benthological Society (NABS)
- Society for Ecological Restoration 2012 – 2013
- Institute of Transportation Engineers (ITE) 2000 – 2001

CERTIFICATIONS

- Registered Professional Civil Engineer: CO, #PE.0050113 (continuous since 2015)
- Passed FE in May 1999 - MT Engineering Intern #13829

PROFESSIONAL DEVELOPMENT

- Professional Development Institute, 2 days x 2 hr/day, Colorado State Univ., January 2023
- Professional Development Institute, 2 days x 2 hr/day, Colorado State Univ., January 2022
 - Co-presented session “Amplify learning by infusing courses with learning science”
- American Society of Engineering Education, Annual Conference & Short Courses, Online, July 2021
- Active participant in the National Institute on Scientific Teaching webinars, 2021
- Asset-Based Framework virtual series, attended 2 workshops x 1.5 hr/workshop, Colorado State Univ., March 2021
- Professional Development Institute, 3 days x 2 hr/day, Colorado State Univ., January 2021
- American Society of Engineering Education, Annual Conference & Short Courses, Online, June 2020
- Active participant in the National Institute on Scientific Teaching webinars, 2020
- Professional Development Institute, Colorado State Univ., January 2020
 - Panel member for session *Campus Equity Concerns of Non-Tenure-Track Faculty*
- Completed Increasing Inclusivity in the WSCOE Classroom, Colorado State Univ., 2019
- Completed Supervisor Training Program at Colorado State Univ., 2017-2019. Courses included:

- Mindset for Supervisors
- Rules of the Road
- Inclusive Excellence Part 1: Diversity and Inclusion at CSU
- Start Asking for Feedback
- Inclusive Excellence Part 2: Uncovering Bias
- Job Crafting: Creating the Job You Love
- Embracing Appreciative Inquiry
- Core/Systems Thinking
- American Society of Engineering Education National Conference, Tampa, FL, 2019
 - Including attending a short course *Supporting Teaching through Classroom Observation and Coaching Workshop*.
- TILT Summer Conference on Learning, Teaching, and Critical Thinking, Colorado State Univ., 2019
- American Society of Engineering Education, Rocky Mountain Section Conference and Short Courses, Laramie, WY, 2019
- Completed Teaching Squares Peer Review program (partnered with cross-university faculty to peer review teaching practices) Institute for Teaching and Learning, Colorado State Univ., 2018
- American Society of Engineering Education, Annual Conference & Short Courses, Salt Lake City, UT, 2018
 - Including attending the short course *WeBWork for Beginners! Using and Developing for the Open Problem Library*
- Mobile Summer Institute on Undergraduate STEM Education (MoSI), Colorado State Univ., 2018
- TILT Summer Conference on Learning, Teaching, and Critical Thinking, Colorado State Univ., 2018
- American Society of Engineering Education, Rocky Mountain Section Conference and Short Courses, Boulder, CO, 2018
- Diversity Symposium, Colorado State Univ., 2017
- Faculty Fall Ramp-Up, Colorado State Univ., 2017
- TILT Summer Conference on Learning, Teaching, and Critical Thinking, Colorado State Univ., 2017
- Professional Development Institute, Colorado State Univ., 2016
- The Institute for Learning and Teaching (TILT) Summer Conference, Colorado State Univ., 2015
- Professional Development Institute, Colorado State Univ., 2015
- Colorado Flood Recovery Watershed Symposium, Loveland, CO, 2014
- National Science Foundation Grants Conference, Denver, CO, 2014
- Valley Bottom and Riparian Mapping Summit, US Forest Service, Fort Collins, CO, 2014
- Provost's Academy for Instructional Innovation, Colorado State Univ., 2014
- Research Integrity & Compliance Review Faculty Training Series, Colorado State Univ., 2014
- Professional Development Institute, Colorado State Univ., 2014
- The Institute for Learning and Teaching (TILT) Summer Conference, Colorado State Univ., 2013
- Professional Development Institute, Colorado State Univ., 2013
- Google Search and Earth Seminar, Colorado State Univ., 2013

NON-ACADEMIA WORK EXPERIENCE

WATER LOGIC, LLC

MAY 2014 – PRESENT

Owner and Sole Proprietor

Scientific consulting firm specializing in the assessment, planning, and modeling of aquatic systems

CONTRACTS

- 2018 - City of Fort Collins Natural Areas – Northern Integrated Supply Project Final Environmental Impact Statement review of geomorphic impact

- 2016 - City of Fort Collins Natural Areas – Poudre River-related projects
- 2015 – City of Fort Collins Natural Areas – River Health Framework
- 2015 – Expert witness services
- 2014 – City of Fort Collins Natural Areas – Ecosystem Response Model

FINISH CARPENTER **NOV 2004 – JUNE 2005**
 Rob Lewis & Karl Hanson, General Contractors Bozeman, Montana

- Designed, milled and installed wooden trim for windows and doors
- Built insulated concrete form (ICF) and structural insulated panel (SIP) buildings

LEAD BOATBUILDER **NOV 2003 – FEB 2004**
 Darryl's Dinner Cruises Paihia, New Zealand

- Coordinated construction and built form for *Ratanui*, a 50' dinner-cruise boat
- Designed and built wooden bar, tables and helm station for interior of boat

SHOP FOREMAN **MAR 2001 – AUG 2003**
 Montana Boatbuilders, Inc. Livingston, Montana

- Supervised and trained multiple employees in woodworking and composite construction
- Led construction of custom wooden drift and duck boats
- Set up and operated Computer Numerically Controlled (CNC) Router System

TECHNICAL TRAINING INTERN **MAY 1999 – AUG 1999**
 Finnish National Road Administration Helsinki, Finland

- Lecture team: *Low Volume Road Technologies and Maintenance* in Estonia, Latvia, and Lithuania
- Participated in the development of an EIS for proposed bridge installation
- Compiled and edited a multinational report on Asset Management for the Organization for Economic Cooperational Development (OECD)

GEOTECHNICAL LAB AND FIELD TECHNICIAN **MAY 1998 – AUG 1998**
 Harlow & Holman Geotechnical Engineering, LLC Missoula, Montana

- Performed testing on building and road construction materials in the lab and field
- Specialized in the capture and analysis of concrete samples for the expansion of US-93

COMMUNITY INVOLVEMENT

- Volunteer at Vindeket non-profit food rescue (January 2023 - Present)
- Volunteer in Poudre School District K-12 classrooms (November 2022 – Present)
- Volunteer for the City of Fort Collins [VirtuVisit program](#) (November 2020 – June 2021)
- CSU [Campus Bike Advisory Committee](#) member (2014-Present)
 - Co-Chairperson (Jan 2015 – Nov 2016)
- Certified League Cycling Instructor (LCI) through the League of American Bicyclists (August 2009 – present)
- Volunteer mechanic at [Velocipede Bike Project](#), Baltimore, MD (April 2011 – June 2012)
- Served as a board member, lead mechanic, and recovered bike coordinator of the [Fort Collins Bicycle Cooperative](#), a non-profit community bike shop (Jan 2007-March 2010)