

Michael J. Rush

4001 Discovery Drive
Boulder, CO, 80309
(651) 328-7572
Michael.Rush-1@colorado.edu

Education:

University of Colorado, Boulder (CU)	Ph.D. Civil Engineering M.S. Civil Engineering <i>Hydrologic Sciences Certificate</i>	May 2020 2017
University of Minnesota, Twin Cities (UMN)	B.S. Physics <i>Spanish Studies Minor</i>	2014

Experience:

Graduate Research Assistant – Institute of Arctic & Alpine Research

May 2016-present

- develop numerical models to understand how seasonal snow and frozen soils control subsurface water flow processes within the Boulder Creek watershed
- disseminate results by presenting at conferences and developing publications
- synthesize research across disciplines to create engaging content for a public audience
- facilitate research workshops for community outreach events

Graduate Teaching Assistant – CU Department of Civil Engineering

August 2015-May 2016

- tutored students, conducted review lectures, designed homework assignments, managed graders, and wrote exams for introductory engineering courses

Medical Device Associate – Vascular Solutions, Inc.

June 2014-July 2015

- Product Management: conducted clinical literature reviews, performed risk analysis, maintained product labeling and promotional materials
- Sales Operations: generated weekly sales reports, analyzed sales trends, managed pricing contracts, supported field sales staff

Field Technician – UMN Department of Forestry Resources

May 2013-September 2013; May 2011-September 2011

- surveyed wetlands throughout Minnesota by identifying vegetation and classifying hydrology for the National Wetland Inventory
- navigated to waypoints and entered field data using a Trimble device

Undergraduate Teaching Assistant – UMN Department of Physics

August 2013-December 2013; August 2012-December 2012

- led laboratory sessions, coached students through problem-solving discussions, graded lab reports, and tutored students in various introductory physics courses

Quality Engineering Intern – Zimmer Spine, Inc.

May 2012-August 2012

- supported regulatory compliance efforts by assessing design verification/validation activities and biocompatibility tests performed for spinal fusion and fixation systems

Undergraduate Research Assistant – UMN Department of Physics

September 2011-May 2012

- managed team and trained student workers in assembling particle detector modules within tolerance specifications, evaluating quality by running high-pressure leak tests, and modifying assembly process to mitigate flaws

Languages:

English: Native

Spanish: Professional

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Selected Honors:

Fulbright U.S. Student: J. William Fulbright Scholarship Board (2018)
CZO-SAVI International Scholar: NSF Science Across Virtual Institutes (2018)
Dean's Fellow: University of Colorado (2015-2016)
Bentson Scholar: University of Minnesota (2010-2014)
Presidential Scholar: University of Minnesota (2010-2014)

Conference Presentations:

American Geophysical Union (AGU) Fall Meeting:
Incorporating the Seasonal Snowpack into Modeling of Frozen Ground at Niwot Ridge (2019)
Modeling Aspect Controlled Formation of Frozen Ground on Montane Hillslopes (2017)
Global Change at Basin Scale and Water Management Challenges in Patagonia:
Land Use and Climate Effects on the Thermal Hydrology of a Forested Headwater Stream (2018)
Agua y Cuencas, Universidad de Aysén Seminario Internacional:
Hidrología de Cuencas: Colorado, E.E.U.U. (2018)
North American Students of Cooperation (NASCO) Institute:
Water and Energy in Co-ops: Practical Permaculture (2017)

Community Outreach and Engagement Activities:

Museum of Boulder Exhibit – Boulder Creek Watershed: Lead Content Writer (2019-2020)
Trinidad Water Festival – Trinidad, Colorado: Presenter
My Water (2019)
How does the Snow Control the Flow? (2017)
University of Colorado Water Resources Book Club: Founder, Secretary (2017-2020)
Hydrologic Sciences Symposium Demo Day: Founder, Coordinator, and Presenter (2017, 2019)
Lens on Climate Change: Science Mentor (2016-2017)
Mountain Research Experience: Workshop Leader
Introduction to Field Science (2017)
Using Field Observations to Guide Model Parameters (2016)
Research Experience for Community College Students: Workshop Leader
Maintaining Field & Lab Notebooks (2016)
Portal to the Public: Science Ambassador
How does the Snow Control the Flow? (2016)

Selected Media:

CU Boulder Civil Engineering Department Interview, 2019:
<https://www.colorado.edu/ceae/2019/02/12/interview-phd-student-mickey-rush-hydrology-research-patagonia>
CU Boulder Earth Science & Map Library Photo Contest Winner, 2019:
<https://www.colorado.edu/libraries/2019/05/07/mickey-rush-wins-earth-sciences-map-library-photo-contest>
Yellow Scene Interview, 2016:
<https://yellowscene.com/2016/09/27/pedaling-the-road-to-food-equity/>

Graduate Advisor:

Dr. Harihar Rajaram
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