

# BEATRICE L GORDON, Ph.D.

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## EDUCATION

- 2022 **Ph.D. Hydrogeology, University of Nevada Reno, Reno, NV**  
Graduate Dean's Fellowship—1 of 5 for all incoming graduate students, Babbitt Fellow  
“Socio-hydrologic assessment of mountain water supply vulnerability to changing snowmelt”  
Advisor: Dr. Adrian Harpold
- 2016 **M.S. Water Resources, University of Wyoming, Laramie, WY**  
Graduate Merit Fellow, Mary Mead Fellowship for Women in Agriculture, Outstanding MS  
“Determination of evapotranspiration and return flow in a semi-arid agricultural system”  
Advisor: Dr. Scott Miller
- 2010 **B.A. Environmental History & English Literature, Stanford University, Stanford, CA**  
*Phi Beta Kappa*, NCAA Division 1 Athlete, Stanford Humanities Center Undergrad Fellow
- 2006 **Diploma, St. Paul's School, Concord, NH**  
*Magna Cum Laude*, Distinction in Humanities

## RESEARCH EXPERIENCE

- 2023- **Post-Doctoral Scholar, Desert Research Institute, Division of Hydrologic Sciences**
- Lead design of decision-making support tool for climate adaptation in agriculture
  - Economic analysis of demand management in irrigated agriculture
  - Liaise between hydrology subgroup and applied economics on a \$5 million USDA grant
- 2023- **Senior Hydrologist (Contract), Upper Colorado River Commission**
- Lead scoping and development of special studies within the Upper Colorado River Basin
  - Provide expertise on hydrology and hydrologic
  - Support Deputy Director and Executive Director on technical tasks as needed
- 2019-2022 **PhD Candidate, Nevada Mountain Ecohydrology Lab**
- Published on snow and streamflow using large-scale models and gridded data
  - Published on statistical tool for uncertainty assessment using large-scale models and gridded data, produced new data product
  - Designed resilience assessment for adaption in irrigated agriculture in western US
  - Produced metrics-based assessments to improve system resilience
- 2016-2019 **Research Analyst, Stanford University Woods Institute for the Environment**
- Performed legal research on environmental water transactions
  - Conducted technical, economic, and legal research on groundwater management in CA
  - Co-developed and implemented an assessment of ecosystem services in the western US
  - Published financial risk assessment of green infrastructure in major global cities

- 2013-2016     Research Assistant, Wyoming Center for Environmental Hydrology and Geophysics**
- Published 3-year study on agricultural return flows using hydrologic and geophysical data
  - Oversaw communication about research and results with diverse stakeholders
  - Designed and managed data gathering, sharing, and analysis with multiple partners
  - Lead and mentored a team of technicians in a remote location over multiple field seasons
- 2009-2010     Undergraduate Research Fellow, Stanford Humanities Center**
- Targeted research under Dr. Lael Weis, J.D. on private property
  - Research on equality, national personality, and civic virtue through public lands, particularly National Parks

## PROFESSIONAL EXPERIENCE

- 2011, 2013     Wildland Firefighter, Bighorn National Forest**
- Member of Blacktooth Fire Use Module (2013)
  - Member of Engine Crew (2011)
- 2011-2013     Junior Environmental Specialist, Apache Corporation**
- Co-led corporate sustainability report, designed water use reporting for investors and shareholders
  - Led corporate environmental affairs in Argentina, Gulf Coast, Permian Basin, and Egypt
  - Coordinated environmental reporting for OPIC and MIGA
- 2011             Intern, Environmental Defense Fund**
- Targeted GIS work on conveyance infrastructure in California

## PUBLICATIONS

### PEER-REVIEWED JOURNAL ARTICLES

- In Prep*        [11] Boisrame, G. F. S., **Gordon, B. L.**, Albano, C., Harpold, A.A., Carroll, R.W.H. Think Globally, Model Locally.
- In Prep*        [10] **Gordon, B. L.**, Blumberg, J., Manning, D., Leonard, B., Boisrame, G.F.S., Albano, C., Carroll, R.W.H. Past, Present, and Future Impacts of Climate Change for Cropland Area and Profitability in the Western US.
- 2023**            [9] **Gordon, B. L.**, Boisrame, G. F. S., Carroll, R. W. H., Ajami, N. K., Leonard, B., Albano, C., et al. (2024). The essential role of local context in shaping risk and risk reduction strategies for snowmelt-dependent irrigated agriculture. *Earth's Future*, 12, e2024EF004577.
- 2023**            [8] **Gordon, B. L.**, Koebele, E. A., Rego, J. J., Harpold, A. A., & Ajami, N. K. (2024). Adaptable and comprehensive vulnerability assessments for water resources systems in a rapidly changing world. *Journal of Environmental Management*, 352, 119958.
- 2022**            [7] **Gordon, B. L.**, Brooks, P. D., Krogh, S. A., Boisrame, G. F., Carroll, R. W., McNamara, J. P., & Harpold, A. A. (2022). Why does snowmelt-driven streamflow response to warming vary? A data-driven review and predictive framework. *Environmental Research Letters*.

- 2022** [6] **Gordon, B. L.**, Crow, W. T., Konings, A. G., Dralle, D. N., & Harpold, A. A. (2022). Can We Use the Water Budget to Infer Upland Catchment Behavior? The Role of Data Set Error Estimation and Interbasin Groundwater Flow. *Water Resources Research*, 58(9)
- 2021** [5] Krogh, S. A., Scaff, L., Sterle, G., Kirchner, J., **Gordon, B.**, Harpold, A. (2021). Diel streamflow cycles suggest more sensitive snowmelt-driven streamflow to climate change than land surface modeling. *Hydrology and Earth System Sciences Discussions*, 1-41.
- 2021** [4] Claes, N., Paige, G. B., **Gordon, B. L.**, Parsekian, A. D., Miller, S. N. (2021). Hydrologic modeling of reach scale fluxes from flood irrigated fields. *Journal of Hydrology*, 598, 126254.
- 2020** [3] **Gordon, B.L.**, Paige, G.B., Miller, S.N., Claes, N., Parsekian, A.D. (2020). Field scale quantification indicates potential for variability in return flows from flood irrigation in the high-altitude western US. *Agricultural water management*, 232, 106062.
- 2019** [2] **Gordon, B. L.**, Kowal, V., Khadka, A., Chaplin-Kramer, R., Roath, R., & Bryant, B. P. (2019). Existing accessible modeling tools offer limited support to evaluation of impact investment in rangeland ecosystem services. *Frontiers in Sustainable Food Systems*, 3, 77.
- 2018** [1] **Gordon, B. L.**, Quesnel, K. J., Abs, R., & Ajami, N. K. (2018). A case-study based framework for assessing the multi-sector performance of green infrastructure. *Journal of environmental management*, 223, 371-384.

## REPORTS & BRIEFS FOR POLICYMAKERS

- 2018** Conrad, C., **Gordon, B.L.**, Moran, T.A., Blomquist, W., Martinez, J., Szeptycki, L., (2018) California's new landscape for groundwater governance
- 2018** Szeptycki, L., Pilz, D., O'Connor, R., & **Gordon, B.** (2018). Environmental Water Transactions in the Colorado River Basin: A Closer Look.

## POPULAR MEDIA & BLOGS

- 2022** **Gordon, B.** "Study Explores Climate Influences on snowmelt-fed water supplies."
- 2019** **Gordon, B.**, K.J. Quesnel, J.M. Wolfand, and P. Hamel. "Using Nature to Tackle Water Infrastructure Challenges: Frontiers of Green Infrastructure Research at Stanford." Water in the West Insight blog.
- 2018** **Gordon, B.**, "The Value of Mentorship: Water in the West's Newsha Ajami." Water in the West Insight blog.
- 2018** **Gordon, B.**, "All Roads Lead to Water in the West: Q & A with Stanford's Landreth Visiting Fellow Letty Belin." Water in the West Insight blog.
- 2017** **Gordon, B.** "AGU 2017 Fall Meeting Roundup." Water in the West's Insight blog.
- 2017** **Gordon, B.** "Stanford's Rosemary Knight wins 2017 Outstanding Educator Award." Water in the West Insight blog

- 2017**      **Gordon, B.** "Q & A with California Farmers: Cannon Michael and Brandon Morris." Water in the West Insight blog.
- 2017**      **Gordon, B.** "Why We Can't Just Suck It Up: The Challenges of Groundwater Recharge in California." Water in the West Insight blog.
- 2017**      **Gordon, B.** "Is CA's Drought Over? We're Asking the Wrong Question." Water in the West Insight blog.
- 2016**      **Gordon, B.** "Measuring Return Flows" Western Confluence Magazine

## AWARDS & AFFILIATIONS

- 2022**      Outstanding Student Paper, **University of Nevada Reno**, Graduate Program in Hydrologic Sciences (GPHS)
- 2021-2022**      Babbitt Dissertation Fellow, **Lincoln Institute of Land Policy**
- 2020-2021**      Jerry & Betty Wilson Scholarship, **University of Nevada Reno**
- 2021**      3 Minute Thesis (3MT) Competition, 3<sup>rd</sup> place, **University of Nevada Reno**
- 2020**      Outstanding PhD Student, **University of Nevada Reno**, GPHS
- 2019**      Graduate Dean's Fellow, **University of Nevada Reno** \*First awardee for GPHS
- 2016**      Outstanding MS Student, **University of Wyoming**, College of Agriculture
- 2015-2016**      Mary Mead Fellowship for Women in Agriculture, **University of Wyoming**
- 2013-2015**      Graduate Merit Fellowship, **University of Wyoming**
- 2010**      Phi Beta Kappa (Top 10% of graduating class), **Stanford University**  
*Finalist*, Hoefler Prize for Excellence in Undergraduate Writing, **Stanford University**  
*Awardee*, Bill Lane Center for the American West Summer Internship, **Stanford University**
- 2009-2010**      Undergraduate Fellowship, **Stanford Humanities Center**
- 2006-2007**      Athletic Scholarship, **Stanford University**, Athletics Department
- 2007, 2008, 2010**      Student-Athlete Award, **Stanford University**, Athletics Department  
 Division 1 Athlete, **National Collegiate Athletic Association**

- 2020-2022** Member, **Unlearning Racism in the Geosciences (URGE) Pod**, Graduate Program in Hydrologic Sciences
- 2019-** Volunteer, **Skype a Scientist**
- 2019-2023** Member, Board of Directors, **Greater Yellowstone Coalition**, Finance & Land Committees
- 2018-** Reviewer: Water Resources Research • Journal of Environmental Management • Science of the Total Environment • Agricultural Water Management • Journal of Sustainable Finance & Investment • Hydrological Processes
- 2017-** Member, Board of Directors, **Plank Stewardship Initiative**, Program Committee

## **PRESENTATIONS**

### **EXTERNAL INVITED TALKS**

- 2017** *Quantifying the value of good management: Ecosystem services in the context of rangelands.* Society for Range Management Annual Meeting, California
- 2016** *Measuring return flows*, Wyoming Game and Fish Meeting

### **CONFERENCE ORAL PRESENTATIONS**

- 2023** **Gordon, B.L.** Headwater Reservoir Management Must Consider Hydrological Supply and Agricultural Demand In a Future With Less Snowpack. Nevada Water Resources Association Annual Meeting.
- 2022** **Gordon, B. L.**, Harpold, A., Ajami, N.K., Albano, C.M., Boisrame, G., Carroll, R., Leonard, B., Headwater Reservoir Management Must Consider Hydrological Supply & Agricultural Demand In a Future With Less Snowpack. American Geophysical Union (AGU) Fall Meeting
- 2020** **Gordon, B.L.**, A Harpold, WT Crow. Using triple collocation of precipitation and evapotranspiration products to reduce uncertainty and improve inferences of catchment-scale water budgets. AGU Fall Meeting

### **SELECTED POSTER PRESENTATIONS**

- 2021** **Gordon, B.L.**, Harpold, A.A., Koebele, E.A., Ajami, N.K., Boisrame, G.B., Andrade, M. "Adapting index-based vulnerability assessments in rapidly changing coupled upland-agricultural systems in the western US." AGU Fall Meeting
- Gordon, B.L.**, Harpold, A.A., Carroll, R.W.H., Ajami, N.K. " Accounting for built and natural storage is necessary to estimate the true vulnerability of downstream water supplies." AGU Fall Meeting

- 2020** Harpold, A.A., Krogh, S.A., Scaff, L., Sterle, G., Kirchner, J.W., **Gordon, B.L.** "Diel observations suggest earlier snowmelt-driven streamflow than land surface modeling" AGU Fall Meeting
- 2019** **Gordon, B.L.**, Harpold, A.A., Dralle, D.. "The role of plant available water storage capacity in modulating the value of snow accumulation for upland ecosystems" AGU Fall Meeting
- Harpold, A.A., Brooks, P.D., Kohler, M., Sturtevant, J., **Gordon, B.L.**, Dettinger, M. "How ready is the hydrologic sciences for the loss of seasonal snowpacks (and what can be done)?" AGU Fall Meeting

## SKILLS & TRAINING

- Computational modeling & climate data processing
- Big data management & organization
- Hydrological field instrumentation
- Programming in Matlab, R, Python
- Spatial analysis in Google Earth Engine, ArcGIS
- Interdisciplinary research
- Stakeholder outreach & communication
- Public & investor relations
- Scientific communication
- Data visualization

## COURSEWORK

Advanced Natural Resources Economics • Advanced Surface Water Hydrology • Bayesian Hierarchical Modeling • Differential Equations • Linear Algebra • Elements of Research Computing • Engineering & Environmental Geophysics • Geostatistics • Groundwater Hydraulics • Hydrogeophysics • Hydrologic Fluid Dynamics • Modeling Flow & Contaminant Transport • Soil Physics • Spatial Hydrology • Water Quality Analysis • Wildland Hydrology • Geographic Information Systems in Water Resources • Global Change, Crop Production & Impacts on Hydrology • Hydrology & Policy: Actions, Implications, and Solutions

## RELEVANT TRAINING

Rosgen Stream Restoration • National Wildfire Coordinating Group trainings (e.g., S-110, S-190, S-290) • WRF-Hydro • SWAT

## PROFESSIONAL MEMBERSHIPS

*Phi Beta Kappa* • Phi Kappa Phi • American Geophysical Union • Block S Society (Stanford University Athletics Society)