

CURRICULUM VITAE

EDUCATION

2022 PhD Ecology and Evolutionary Biology, Columbia University
MA: 2018, MPhil: 2019

Thesis title: Impacts of Drought and Cyclonic Storms on Vegetation and Streamflow in Puerto Rico

2016 BS Geography, University of Wyoming

2016 BA Anthropology, University of Wyoming

RESEARCH FELLOWSHIPS AND GRANTS

Awarded

- Hansen, W.D., **Hall, J.**, Hayes, K. R., and B. M. Rogers. Informing effective strategies for managing carbon stores with increasing fire in boreal forests of interior Alaska. Joint Fire Science Program (2024-2027). \$500,000.
- **Hall, J.**, and Hansen, W. D., Preparing a time series database for applications in forest ecology and wildfire resilience in the Western United States. FARR (FAIR in ML, AI-readiness and Reproducibility) Research Coordination Network Mini-Research Grant (2024-2025). \$6,000.
- Hansen, W. D., Batterman, S., Lucas, J., and **Hall, J.**, Filters of post-fire tree regeneration; a carbon-cycle linchpin in the boreal biome. Cary Institute Science Innovation Fund (2023-2024). \$80,000.
- **Hall, J.**, Saatchi, S., and M. Uriarte, Characterization of forest degradation from Hurricane Maria in Puerto Rico using optical and SAR imagery. Non-Academic Research Internship for Graduate Students (INTERN) Supplemental Funding, National Science Foundation (2020). \$25,000.
- **Hall, J.**, Quebbeman, A., and M. Uriarte. Plot to landscape: The effects of cyclonic winds on tree damage in Puerto Rico. Earth Institute Travel Grant, Columbia University (2017-2018). \$2,000.
- **Hall, J.** Puerto Rican Forests and Water Resources Summer Research. Institute of Latin American Studies Summer Field Research Grant, Columbia University (2017). \$1,600.
- **Hall, J.**, Graduate Research Fellow (GRFP), National Science Foundation (2016-2021). ~\$100,000.
- **Hall, J.**, Beverly, D., and B. Ewers. Effect of aspect and forest age on tree water use in the Panama Canal Watershed. Wyoming's Experimental Program to Stimulate Competitive Research (EPSCoR) Undergraduate Fellow, and Wyoming Research Scholars Program, University of Wyoming (2016). ~\$13,000.

Pending

- **Hall, J.**, Hudak, A. T., Wang, J. A., Goulden, M., and W. D. Hansen, Indicators of forest health: Detecting forest disturbance and estimating the impacts of drought, fire, and insects on forest carbon pools in the western US. US Forest Service, 2025 Forest Health Protection Evaluation Monitoring Program Funding. \$200,000.

In preparation

- Hansen, W. D., **Hall, J.**, Hudiburg, T., & L. Lynch. Mechanisms of burn severity impacts on post-fire tree regeneration and subsequent landscape impacts in interior Alaska; implication for carbon carrying capacity in the boreal biome. National Science Foundation, Arctic System Science. \$2,000,000. To be submitted by January 15, 2025.

PROFESSIONAL EXPERIENCE

2024-present Research Associate. Cary Institute of Ecosystem Studies

2022-2024 Postdoctoral Associate. Cary Institute of Ecosystem Studies

2021-2022 *Consultant Project*. Characterization of Storm King Art Center Forest Composition, Health, and Carbon Storage. Storm King Arts Center, New Windsor, NY. Authored by: Hall, J., and Schmiede, S.

- Used a combination of field surveys, lidar, and remote sensing imagery to determine and report forest composition and structure within the Storm King Art Center.

2015-2016 *Field Technician*, Wyoming Center for Environmental Hydrology and Geophysics (WyCEHG). Botany Department, University of Wyoming.

- Managed a team of plant physiology and ecosystem hydrology technicians. Supervisors: Dr. Brent Ewers, Dr. Daniel Beverly, and Dr. Heather Speckman

PUBLICATIONS/JOURNAL ARTICLES

Published

- **Hall, J.**, Scholl, M., Shanley, J., Matt, S., and M. Uriarte. (2024). Forest cover lessens hurricane impacts on peak streamflow. *Hydrological Processes*, 38(8), e15249.
- **Hall, J.**, Sandor, M., Harvey, B. J., Parks, S., Trugman, A. T., Williams, A. P., & W. D. Hansen (2024). Forest carbon storage in the Western United States: distribution, drivers, and trends. *Earth's Future*, 12(7), e2023EF004399.
- Ankori-Karlinsky, R., **Hall, J.**, Murphy, L., Muscarella, R., Martinuzzi, S., Fahey, R., ... & M. Uriarte. (2024). Chronic Winds Reduce Tropical Forest Structural Complexity Regardless of Climate, Topography, or Forest Age. *Ecosystems*, 1-13.
- Quebbeman, A. W., Menge, D. N., Arellano, G., **Hall, J.**, Wood, T. E., Zimmerman, J. K., & M. Uriarte. (2022). A severe hurricane increases carbon dioxide and methane fluxes and triples nitrous oxide emissions in a tropical forest. *Ecosystems*, 25(8), 1754-1766.
- **Hall, J.**, Scholl, M., Gorokhovich, Y., & M. Uriarte. (2022). Forest cover lessens the impact of drought on streamflow in Puerto Rico. *Hydrological Processes*, 36(5), e14551.
- DeFries, R., A. M. Osuri, and Y. Malhi. (2021). The Effects of Forest Degradation on Ecosystem Services. *Changing Wealth of Nations Background Technical Report*.
 - **Hall, J.** is a contributing author
- **Hall, J.**, Muscarella, R., Quebbeman, A., Arellano, G., Thompson, J., Zimmerman, J. K., & Uriarte, M. (2020). Hurricane-induced rainfall is a stronger predictor of tropical forest damage in Puerto Rico than maximum wind speeds. *Scientific Reports*, 10(1), 4318.
- Feng, Y., Negron-Juarez, R. I., Patricola, C. M., Collins, W. D., Uriarte, M., **Hall, J. S.**, ... & J. Q. Chambers. (2018). Rapid remote sensing assessment of impacts from Hurricane Maria on forests of Puerto Rico. *PeerJ Preprints*, 6, e26597v1.

In Revision

- Hansen, W. D., Bartowitz, K., Sandor, M. E., Balch, J., **Hall, J.**, Harvey, B. J., Kueppers, L., Trugman, A. T., Williams, A. P., Johnston, M. R., Radeloff, V. C., Marlier, M. E., Schollaert, C. L., Konings, A. G. ... Actionable Science for the Modern Fire Era.

In preparation

- Buhr, E. A., **Hall, J.**, Murphy, L., Batterman, S. A., Lucas, J. M., Sandor, M. E., & W. D. Hansen. Drivers of black spruce (*Picea mariana*) post-fire regeneration in Interior Alaska. *To be submitted to Forest Ecology and Management by August 2025*.
 - Mentored employee paper.
- Gaglioti, B., Mann, D. H., **Hall, J.**, Quinn, C., & W. D. Hansen. The role of previous fires in limiting reburning in Alaska's boreal forest. *To be submitted to Geophysical Research Letters by May 2025*.

SCHOLARSHIPS, AWARDS, AND HONORS

- 2024 Institutional Nominee, 2025 Blavatnik Regional Awards for Young Scientists (pending).
- 2023 Gordon Research Conference in Predictive Ecology early-career award (~\$500)
- 2016-2021 Dean's Fellow, Columbia University (\$400,000)
- 2016 Provosts Diversity Award, Columbia University (\$6,000)
- 2016 Finalist, Rosemarie Martha Spitaleri Award for Outstanding Graduating Woman, University of Wyoming
- 2016 Own it! Award Winner for Outstanding Undergraduate Female Student in STEM, University of Wyoming
- 2015-2016 McNair Scholar, University of Wyoming
- 2015 Phi Beta Kappa, University of Wyoming

PRESENTATIONS

- **Hall, J.** & W. D. Hansen, Preparing a time series database for applications in forest ecology and wildfire resilience in the Western United States. FARR (FAIR in ML, AI-readiness and Reproducibility) Research Coordination Network Workshop. Washington D. C. Oral Presentation
- **Hall, J.**, Sandor, M., Harvey, B. J., Parks, S. A., Trugman, A. T., Williams, A. P., & W. D. Hansen, Forest carbon storage in the Western United States: distribution, drivers, and trends. Fall Meeting, American Geophysical Union Annual Meeting 2023, San Francisco, CA Poster Presentation.
- **Hall, J.**, Sandor, M., Parks, S., Trugman, A. T., Williams, A. P., & W. D. Hansen, Live tree forest carbon storage in the Western United States: distribution, trends, and drivers. Fall Meeting, Ecological Society of America Annual Meeting 2023, Portland OR. Oral Presentation.
- **Hall, J.**, Trugman, A. T., Williams, A. P., & W. D. Hansen, Finding the baseline: Forest carbon storage in the Western United States across climatic gradients and fire legacies. Fall Meeting, American Geophysical Union Fall Meeting. December 2022, Chicago, IL. Poster Presentation.
- Shanley, J., Matt, S., Scholl, M. A., **Hall, J.**, McDowell, W. H., González, G., Uriarte, M. The effect of 2017 Hurricane Maria on streamflow in Puerto Rico. *Frontiers in Hydrology* 2022, Poster Presentation.
- **Hall, J.**, Saatchi, S., & M. Uriarte. Characterization of forest degradation from Hurricane Maria in Puerto Rico using optical and SAR imagery. American Geophysical Union 2021 Fall Meeting, New Orleans, LA. Poster Presentation.
- Ankori-Karlinsky, R., **Hall, J.**, & M. Uriarte. The making of living pillars: Drivers of canopy height and structural complexity of tropical forests. Ecological Society of America Annual Meeting 2021, Virtual. Oral Presentation.
- **Hall, J.**, Scholl, M., Shanley, J., Matt, S., & M. Uriarte. Vegetation damage and forest cover influence streamflow response to Hurricane Maria in Puerto Rico. Ecological Society of America Annual Meeting 2021, Virtual. Oral Presentation.
- **Hall, J.**, Scholl, M. & M. Uriarte. Forest cover mitigates the impacts of rainfall variability on streamflow in Puerto Rico. American Geophysical Union 2019 Fall Meeting, San Francisco, California. eLightning and Poster Presentation.
- **Hall, J.**, Quebbeman, A., Arellano, G. Muscarella, R., Zimmerman, J.K., & M. Uriarte. Impacts of Hurricane Maria on Puerto Rican forests and risk factors for damage. Luquillo Longer-Term Ecological Research Annual Meeting 2019. Poster Presentation
- **Hall, J.**, Quebbeman, A., & M. Uriarte. Plot to landscape: the effects of cyclonic winds on tree damage in Puerto Rico. Earth Institute Symposium 2018. Poster Presentation
- **Hall, J.**, and Uriarte, M. Using estimates of vegetative damage and biomass to explain variation in Streamflow in Puerto Rico after Hurricanes Irma and Maria. Ecological Society of America Annual Meeting 2018, New Orleans, LA. Poster Presentation
- Ewers, B., Bretfeld, M., Millar, D., **Hall, J.**, Beverly, D., Hall, J., Ogden, F., & S. Mackay. Confronting a Process-based Model of Temperate Tree Transpiration with Data from Forests in Central Panama

Exposed to Drought. American Geophysical Union 2016 Fall Meeting, San Francisco, California. Poster Presentation

- **Hall, J.,** Ewers, B., & Beverly, D. "Effect of aspect and forest age on tree water use in the Panama Canal Watershed". Ecological Society of America Annual Meeting 2016. Fort Lauderdale, Florida. Poster Presentation.
- **Hall, J.,** Beverly, D., Speckman, H. N., Zelikova, T. J., Ohara, N., & Ewers, B. Primary Drivers of dust deposition within a small subalpine watershed. American Geophysical Union 2015 Fall Meeting, San Francisco, California. Poster Presentation.

ACCOMPLISHMENTS

2021 Public Outreach Grant. E3B Urban Ecology Summer Program. Center for Science and Society, Columbia University

A group of Columbia ecology graduate students partnered with the Lamont-Doherty's Secondary School Field Research Program (SSFRP) to develop an urban ecology summer program which began July 2021. This program gave Black people, Indigenous people, People of Color and other underrepresented high school students a hands-on understanding of the scientific process while engaging in field research. I suggested the partnership, coordinated the initial meetings between SSFRP representatives and our working group, and contributed to a written proposal that was later funded.

TEACHING AND MENTORING EXPERIENCE

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| 2024-present | <p><i>Co-developing a Machine Learning for Ecologists course.</i> With Jatan Buch, Columbia University</p> <ul style="list-style-type: none"> - Using applied scenarios relevant to ecologists (e.g. image segmentation/classification for tree crowns and species identification, and habitat suitability modeling. - Developing a 2-hour conference workshop for Ecological Society of America 2025 - We will extend this material to a full semester course. |
| 2023-present | <p><i>Formal and informal mentor,</i> Cary Institute of Ecosystem Studies</p> <ul style="list-style-type: none"> - Hired, interviewed and provided informal summer mentorship to two field technicians and one field manager during a summer field campaign. - Providing extended formal research mentorship to a field manager analyzing field data, hypothesis testing, and manuscript writing. Helped her draft a GRFP application for graduate school. |
| 2022-2024 | <p><i>Informal mentor and collaborator,</i> Columbia University (Department of Ecology, Evolution and Environmental Biology)</p> <ul style="list-style-type: none"> - Helped another first generation college student from an under-represented background adjust to life in the Ivy League through informal interactions. - Providing code, data, and mentorship for a developing dissertation chapter. |
| 2017-2019 | <p><i>Teaching assistant,</i> Columbia University (Department of Ecology, Evolution and Environmental Biology)</p> <ul style="list-style-type: none"> - Courses: Introduction to Environmental Biology I (undergraduate); Conservation Biology (undergraduate), Conservation Biology (graduate) |

TECHNICAL SKILLS AND EXPERIENCE

R Statistical Software, ArcGIS, Google Earth Engine, statistical and spatial modeling, optical remote sensing, Jupyter Notebook, Synthetic aperture radar analysis, LiDAR point cloud analysis, Python, time series analysis, forest field survey

VOLUNTEER AND COMMUNITY SERVICE

2023-2024	Peer reviewer: Ecosphere (3), Canadian Journal of Forest Research (1), Journal of Geophysical Research – Biogeosciences (1)
2023-present	Chair, Cary Institute Postdoc, Research Associate, and Data Analyst/Scientist Committee <ul style="list-style-type: none"> - Coordinated activities to facilitate community building and establish formal communication channels between the committee and individuals represented by the committee. - Led efforts to draft and distribute a handbook meant to guide new Postdoctoral Associates through the onboarding process and throughout their time at the Cary Institute. - Represented Postdoctoral Associate interests during committee meetings and additional events such as meetings with the Cary Institute Board of Trustees and President. - Wrote an annual report to the President detailing committee activities and progress.
2023	Visiting Scientist, Cary Institute Summer Camp <ul style="list-style-type: none"> - Planned ecology-related activities for students (2nd-4th grade) in science summer camp and led students through activities, encouraging them to think about the role of fire in forest ecosystems.
2023	Riverkeeper Sweep at Kaal Rock <ul style="list-style-type: none"> - Participated in a trash clean-up day near Poughkeepsie, NY.
2020	Outreach Outside of Columbia Working Group Volunteer, Department of Ecology, Evolution, and Environmental Biology, Columbia University <ul style="list-style-type: none"> - Established a summer urban field ecology program for high school students, in partnership with local majority-BIPOC schools and organizations. - Participated in drafting a letter to our faculty on necessary department diversity and inclusion goals and requirements.
2017, 2019	Section volunteer, Girls Science Day. Columbia University
2013	Biological Anthropology Volunteer. Excavation of human remains involved in a missing persons cold case. University of Wyoming Department of Anthropology
2013	Rimac Valley Bioarchaeological Project: Lima Peru
2013	Laboratory Assistant. University of Wyoming Department of Anthropology