

Jenna Abrahamson

Located in Raleigh, NC

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Research Interests Satellite Remote Sensing, Machine Learning, Change Detection, Hydrologic and Biogeochemical Modeling, Data Assimilation, Computer Vision, Bayesian Statistics

Education **North Carolina State University** Raleigh, North Carolina
Ph.D. in Geospatial Analytics Aug. 2021 – Present
Advisor: Dr. Josh Gray, Spatial Ecosystems Analytics Lab

Stanford University Online
Professional Certificate in Data Science Foundations Oct. 2020 – Jan. 2021
Courses: Python Programming, R Programming, Statistics

University of St. Thomas St. Paul, Minnesota
B.S. in Environmental Science and Geology Sept. 2015 – May 2019
Minor in Sustainability/GIS
GPA: 3.82, Graduated Magna Cum Laude

Technical Skills **Proficient in:** R, Python, MatLab, Git, Bash, Tableau
Familiar with: Docker, SQL, AWS

Research Experience **Graduate Research Assistant (NC State University)**
IARPA SMART Project - PI Dr. Josh Gray Aug. 2021 – Present

- Helped develop and implement *roboBayes*, a Bayesian-based remote sensing change detection algorithm used to flag areas of change over huge spatial scales using multi-source and multi-temporal data in an online monitoring mode.
- Used high performance computing to run algorithms on big data sets through NC State's cluster computing facility.

Undergraduate Research Assistant (University of St. Thomas)
Biology Department - PI Dr. Gaston Small May 2018 – June 2019

- Helped develop statistical process-based models of urban garden systems using STELLA Architect to predict daily nutrient/water runoff.
- Presented at the EPA P3 Sustainable Design Competition in Boston, MA where our team was awarded the P3 grant.

Undergraduate Research Assistant (University of St. Thomas)
Geology Department - PI Dr. Jeni McDermott Feb. 2016 – May 2018

- Analyzed stream longitudinal profiles in slope-area space using chi-plot statistical analysis to determine areas of change in fluvial systems.
- Helped develop a novel method to predict areas of river capture in complex drainages based on statistical power-law relationships using 1-m digital elevation models and MatLab.
- Participated and helped lead international fieldwork in Norway.

Grants and Awards	NCSU Geospatial Analytics Collaboration and Innovation Award	2022
	UST PEPSI Environmental Science Scholarship (\$5,000)	2018
	UST Geology Brownstein Scholarship - (\$6,000)	2017
	UST Collaborative Inquiry Grant (\$1,500)	2017
	Geological Society of America (GSA) Travel Grant (\$80)	2017
	UST Young Scholars Grant (\$4,000)	2017
	UST Collaborative Inquiry Grant (\$1,500)	2016
Publications	Efficacy of Spent Lime as a Soil Amendment for Nutrient Retention in Bioretention Green Stormwater Infrastructure	
	Shrestha, P.; Salzl, M.T.; Jimenez, I.J.; Pradhan, N.; Hay, M.; Wallace, H.R.; Abrahamson, J.N. ; Small, G.E. <i>Water</i> , 2019.	
Presentations	Shrestha, P., Salzl, M.T., Jimenez, I.J., Pradhan, N., Hay, M., Wallace, H.R., Abrahamson, J.N. , Small, G.E. (June 2019). Water treatment residuals and coir as soil amendments for nutrient retention in bioretention stormwater infrastructure. <i>EPA P3 TechConnect World Innovation Expo</i> , Boston, MA.	
	Abrahamson, J.N. , Shrestha, P, Small, G.E. (May 2019). Evaluating leachate nutrient flux losses from various compost treatments in urban agriculture. <i>Urban Food Systems Symposium</i> , Minneapolis, MN.	
	McDermott, J., Redfield, T. F., Abrahamson, J. N. , Allen, E. (Dec. 2018). Neotectonic Fault Reactivation and Landscape Rejuvenation on Norway's Post-glacial Rifted Margin. <i>AGU Fall Meeting Abstracts (Vol. 2018, EP54A-03)</i> .	
	Abrahamson, J. N. , McDermott, J. A., Allen, E. F., Redfield, T. F. (Oct. 2017). Using Drainage Area Power-Law Relationships as a Method to Test for Points of River Capture. GSA Annual Meeting in Seattle, Washington, USA.	
	McDermott, J. A., Redfield, T. F., Abrahamson, J. N. , Allen, E. F. (Oct. 2017). Exploring the Tectonic and Climatic Drivers of Asymmetric Topography and Fluvial Incision in a Rifted Margin, Surna Valley, Southwestern Norway. GSA Annual Meeting in Seattle, Washington, USA.	
Industry Experience	GIS Specialist	St. Paul, MN
	Pointmap Inc.	Oct. 2019 – June 2021
	Maintained spatial databases and applications, assisted in environmental consulting mapping and spatial analysis projects.	
	Environmental Field Technician	Minneapolis, MN
	Braun Intertec Corporation	May 2019 – Oct. 2019
	Collected field samples for soil, groundwater, air, and soil vapor data analysis and aided in drafting Phase I and II Environmental Site Assessments.	
Professional Service	Invited Talks	
	Accenture Federal Services Computer Vision: COI Seminar Series	June 2022
	Member of	
	American Geophysical Union	Aug. 2022 – Present