# JACKSON BARNETT

## Environmental Studies Graduate Student | Water Quality Scientist | VCU

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## SUMMARY

Dedicated water quality scientist with 5 years of experience studying impairment, sediment, and light in freshwater ecosystems. Skilled in fieldwork, study design, and statistical analysis, with a track record of successful research projects under the mentorship of Drs. Robert Brent and Paul Bukaveckas. Experienced in environmental concepts and data analysis through coursework in data literacy and a teaching position in an upper level ecology lab.

## RESEARCH

### Masters Thesis Project

**Virginia Commonwealth University**

📅 2023 - Present   📍 Richmond, VA

Research Advisor: Dr. Paul Bukaveckas (VCU)

- Conducted analyses of spatial and temporal trends in reservoir water clarity using R. Findings presented at 2025 ASLO Conference (expected 2025 publication).
- Analyzed long term TSS, CHLa, and Secchi Depth trends for ~100 reservoirs monitored by VDEQ since 1970.
- Collected (alongside the 2024 VDEQ reservoir monitoring team) TSS, CHLa, Chromophoric Dissolved Organic Matter, light attenuation, and Secchi data at 7 Virginia Reservoirs.
- Characterized the relative importance of sediment, algae, and dissolved color on water clarity and established connections between light attenuation and Secchi depth to infer photic depths in VDEQ data.

### Research Assistant

**James Madison University**

📅 2021 - 2022   📍 Harrisonburg, VA

Research Advisor: Dr. Robert Brent (JMU)

- Worked under a TMDL Implementation Plan grant to design, install, and maintain a remote water quality monitoring station at Lake Merriweather, along the impaired Little Calfpasture River (Rockbridge, VA).
- Collected/analyzed water quality data to assess the causes, contributors, and stressors associated with the stream's impairment.
- Conducted lab and field tests to assess stream wide trends, determine on-site water quality, and draw correlations between lake conditions and suspended sediments (turbidity/TSS).
- Developed SOPs, training materials, and QA/QC procedures for project partners at JMU, Rockbridge County, and Lake Merriweather.

### Research Assistant

**James Madison University/Virginia Department of Environmental Quality**

📅 2022   📍 Harrisonburg, VA

Research Advisor: Dr. Robert Brent (JMU)

- Assisted in the formation of a stressor analysis report of three impaired streams for VDEQ to be used for TMDL development (Wolf Creek, Greendale Creek, and Rich Valley Unnamed Tributary).
- Evaluated historical nutrient, benthic, feeding group, ion, habitat, solids, and general field data to identify potential stressors.
- Utilized EPA's Causal Analysis Decision Diagnosis Information System (CADDIS) to classify potential stressors.

## EDUCATION

### Master of Science in Environmental Studies

**Virginia Commonwealth University**

📅 2023 - 2025   📍 Richmond, VA

GPA **4.0** / 4.0

### Bachelor of Science in Integrated Science and Technology

**James Madison University**

📅 2019 - 2022   📍 Harrisonburg, VA

GPA **3.89** / 4.0

## SKILLS

R/R Studio   ArcGIS Pro   ESRI Web

Water Quality   Teaching   Data Analysis

YSI EcoWatch   Python   Graphic Design

## AWARDS & RECOGNITIONS

🏆 **VWEA Poster Contest Winner**

Presentation of Masters thesis research earned first place in the 2024 Young Professional Poster Contest held by the Virginia Water Environment Association and WaterJAM Conference.

💧 **VLWA Scholarship Award**

Recipient of the 2024-25 Virginia Lakes and Watersheds Association Scholarship Award based on academic performance and contribution to the field of water resources.

✔️ **VWRRC Student Research Grant**

Secured a $10,000 grant from the Virginia Water Resources Research Center to support my Masters thesis work while at VCU.

## ADDITIONAL EXPERIENCE

### Graduate Research Assistant

📅 2024 - 2025   📍 Richmond, VA

VCU Wilder School of Gov. & Public Affairs

- Served as an aquatic environmental expert and contributed to the development of a network map addressing WaSH (Water, Sanitation, Hygiene) issues in Delhi, India.

### Graduate Teaching Assistant - Ecology

📅 2023 - 2025   📍 Richmond, VA

VCU Biology Department

- Served as instructor for an upper level Ecology Lab under VCU Biology (two sections per semester).
- Taught core forest and aquatic ecology concepts by leading field exercises in macroinvertebrate sampling, mark recapture studies, and more.

## COURSES

**Environmental Data Literacy**

Developed quantitative skills in visualizing, analyzing, and communicating large environmental data sets using RStudio (Markdown/Quarto) and GitHub. Focused on real-time water quality and atmospheric data analysis and interpretation.

**Introduction to Geographic Information Systems**

Utilized ArcGIS Pro & Esri Web to create and utilize geographically referenced databases for urban and environmental analysis. Covered spatial analysis, GPS, remote sensing, data standards, public domain software, and cartography design principles.