

## **NATALIE N. ROBBINS**

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## **RESEARCH INTERESTS**

My research focuses on utilizing geospatial and geophysical survey techniques to advance spatial inquiry across multi-faceted, interdisciplinary projects. I am particularly interested in the development of novel informatics techniques to analyze spatial data and interpret environmental phenomena.

## **EDUCATION**

2019 Tennessee Tech University, Cookeville, TN  
Professional Science Master's Degree, Environmental Informatics  
Remote Sensing and GIS Focus

2016 The University of Arizona, Tucson, AZ  
Bachelor of Science in Environmental Science  
Environmental Science & Policy Focus

## **ONGOING PROJECTS**

**The Development of Mobile Enabled Diagnostics for Schistosomiasis Control Analytics (MEDSCAN)**  
(2021- present)

Collaborators: Thomas Scherr, Carson P. Moore, Austin Hardcastle, David Wright

**Geophysical Investigation of Battle of Nashville Sites** (2021-present), Field Lead

Collaborators: Brandon Hulette, Stacy Curry-Johnson, James Zimmer-Dauphinee, Andrea Gutierrez, Steven A. Wernke

**Creation of Estimated Service Area Boundaries for Community Water Systems in TN** (2021-Present)

Collaborators: Yolanda McDonald, Brian Ham, Greg Baker

*Manuscript in Preparation*

**The Impact of cross-state mobility on HIV engagement in care in Tennessee** (2020-present)

Collaborators: Aimalohi Ahonkhai, Kate Clouse, Steven A. Wernke, Jessica Perkins

*Manuscript in Preparation*

**Geographic Variation in Cardiac Rehabilitation Access** (2019-present)

Collaborators: Meredith S. Duncan, Natalie N. Robbins, Steven A. Wernke, Robert S. Greevy, Sandra L.

Jackson, MPH, Alexis Beatty, Randal J. Thomas, Mary A. Whooley, Matthew S. Freiberg, Justin M. Bachmann.

## **PAST PROJECTS**

**Forgetting to Remember Project** ([forgettingtorememberproject.org](http://forgettingtorememberproject.org))

Collaborators: Meghan McGinley, David Rattray, Sag Harbor Cinema

**Mapping Self in Society** ([maselfs.org](http://maselfs.org))

Collaborators: Rogers Hall, Ben Rydall Shapiro, Steven A. Wernke

**Geologic Mapping of Martian Terraced Fan Features**, (June 2018-May 2019)

Collaborator: Jeannette Wolak

## SKILLS

**Computer & Analytical:** ESRI ArcGIS Desktop, ArcGIS Pro, and ArcGIS Online, QGIS, ENVI 5.3 with IDL, R, Google Earth, ALOHA, Python, MicroStation, Agisoft Metashape, Radan7, ArchaeoFusion, Adobe Illustrator and Microsoft Office (Word, Excel, PowerPoint).

**Field Skills:** Ground penetrating radar (GPR), magnetic gradiometer, GPS/RTK survey, map reading, mineral and rock identification, seine fishing, backpack electrofishing, collection and preservation of egg, larval and adult salamanders, and snorkeling.

## TEACHING EXPERIENCE

2020- present, Vanderbilt University, VU GIS Workshop Series (In-person and online)

- Co-lead workshops with Vanderbilt Libraries on ArcGIS Pro, ArcGIS Online, QGIS, and GIS fundamentals

2022 Mapping Self and Society Graduate Seminar, Vanderbilt University, EDUC 7500

- Co-instructor for education college seminar focusing on personal geography and critical spatial inquiry

2017 – 2019, Tennessee Tech University, Graduate Teaching Assistant

- Directed undergraduate laboratory courses for 35 students per section for Physical Geology & Introduction to Meteorology
- Provide homework and test preparation support for undergraduate Cultural Geography
- Coordinate Geology 1040 laboratory sections for graduate and undergraduate TA's

## WORK EXPERIENCE

Vanderbilt University

-Program Manager for Vanderbilt Institute for Spatial Research, 2022-present

-Research Analyst for Vanderbilt Initiative for Interdisciplinary Geospatial Research, 2019-2022

- Coordinate spatial research for multi-year, grant-funded projects
- Provide geospatial and geophysical survey consulting services for researchers at Vanderbilt, VUMC, and the greater Nashville and Tennessee area
- Leverage open-source and commercial GIS products to conduct geospatial modeling and analysis
- Utilize R, Python, and Java to extend geospatial functionality

2019 Oak Ridge Institute for Science and Education (ORISE), ASTRO Intern

- Supported Oak Ridge National Labs ESRI Enterprise deployment
- Published and maintained web maps and web applications for viewing and editing
- Created front-end ArcGIS Hub site for ORNL GIS
- Converted data from CAD/KML formats to ESRI formats

2017 – 2019, Tennessee Tech University, Graduate Assistant

- Publication of the School of Environmental Studies' bi-annual newsletter
- Assisted with recruiting for the School of Environmental Studies

2015- 2016 University of Arizona Pima Cooperative Extension, Student Worker & Extern

- Assisted with Supplemental Nutrition Assistance Program, formally known as food stamps, community education for recovering drug addicts and convicts

- Worked closely with the AZDHS to research and create preliminary standard operating procedures for aquaculture and vermicomposting within schools and informational devices for the school gardens program

## HONORS AND AFFILIATIONS

- [Tennessee Geographic Information Council \(TNGIC\)](#), Board Member, Chair of Education and Outreach Committee (2022-present)
- GIS Catalyst Award, Tennessee Geographic Information Council (2023)
- FOSS4G Nashville, Planning Co-Chair (2022)
- Alumna of the Year, TN Tech College of Interdisciplinary Studies (2021)
- [Tennessee View](#), Founding Partner (2021-present)
- Tennessee Tech University, Diversity Fellow (2017- 2019)

## PUBLICATIONS

Duncan, M. S., **Robbins, N. N.**, Wernke, S. A., Greevy, R. A., Jr, Jackson, S. L., Beatty, A. L., Thomas, R. J., Whooley, M. A., Freiberg, M. S., & Bachmann, J. M. (2023). *Geographic Variation in Access to Cardiac Rehabilitation*. *Journal of the American College of Cardiology*, 81(11), 1049–1060.

<https://doi.org/10.1016/j.jacc.2023.01.016>.

**Robbins, N.**, Bohanon, A. and Wolak, J.M. (2019, June). *Planetary Geologic Mapping using ArcGIS Pro: A Tutorial Series*. <https://tntechsedgeology.org/tutorials/>.

**Robbins, N.**, McDonald, D., & Rivadeneira, P. (2017). *Steps to Becoming a Certified School Garden*. University of Arizona College of Agriculture and Life Sciences, Cooperative Extension Publication, 10 p.

## CONFERENCE PRESENTATIONS

**Robbins, N.**, Johnson, S.C., Rattner, J.A., Kim, E. (2023, April). *Nashville Refuge Project*. Oral presentation for Tennessee Geographic Information Council. Memphis, TN.

Johnson, S.C., **Robbins, N.**, Wernke, S.A., (2022, November). *Spatial Data In the Age of COVID-19. Lessons learned in managing, serving, and teaching with public health data*. Oral presentation for AutoCarto 2022, Virtual.

Johnson, S.C., **Robbins, N.**, (2022, May). *Best Practices: Working with Spatial Data*. Oral presentation for Library Instruction Tennessee, Virtual.

**Robbins N.**, Johnson S.C., (2022, April). *Untold Stories: Geophysics and Mapping of the Battle of Nashville*. Oral Presentation for the Tennessee Geographic Information Council Annual Conference, Burns, TN.

**Robbins, N.**, Ore Menendez, G., Wernke, S.A. (2020, October). *Geospatial Happenings at Vanderbilt University*. Oral Presentation for the Tennessee Geographic Information Council, Virtual.

**Robbins, N.**, Bohanon, A., and Wolak, J. M. (2019, June). *Planetary Geologic Mapping Using ArcGIS Pro: A Tutorial Series for Students*. Oral presentation for the Planetary Geologic Mappers Annual Meeting, Flagstaff, AZ.

Wolak, J. M., **Robbins, N.**, Bohanon, A., and Blaylock, H. E. (2019, June). *High Resolution Geologic Mapping of Terraced Fans in Xanthe Terra, Mars*. Poster Presentation for the Planetary Geologic Mappers Annual Meeting, Flagstaff, AZ.

**Robbins, N.**, Bohanon, A., and Wolak, J. M. (2019, April). *Resolving Small Scale Features on Mars: Lessons from Coordinated High-Resolution Mapping, Xanthe Terra, Mars*. Oral Presentation for the Tennessee Geographic Information Council Annual Conference, Chattanooga, TN.

Bohanon, A., **Robbins, N.**, Smith, S. and Wolak, J. M. (2019, April). *Analysis of the Mineral Composition of a Terraced Fan in Camichel Crater*. Poster presentation for Tennessee Tech Student Research and Inquiry Day, Cookeville, TN.

**Robbins, N.**, Bohanon, A., Smith, S., Blaylock, H. E., Loggins, M., and Wolak, J.M. (2018, November). *Many worlds, many maps, many users: Coordinating simultaneous mapping efforts with integrated datasets, Xanthe Terra, Mars*. Oral presentation for The Geologic Society of America 130<sup>th</sup> Annual Meeting, Indianapolis, IN.

Wade, O., **Robbins, N.**, and Asante, J. (2018, November). *Detecting Galamsey Activities in Ghana, West Africa using Remote Sensing Techniques and Landsat Imagery*. Poster presentation for The Geologic Society of America 130<sup>th</sup> Annual Meeting, Indianapolis, IN.

Blaylock, H. E., **Robbins, N.**, Smith, S. and Wolak, J. M. (2018, November). *Geologic Mapping of a Terraced Fan Deposit in Dukhan Crater, Xanthe Terra, Mars*. Poster presentation for The Geologic Society of America 130<sup>th</sup> Annual Meeting, Indianapolis, IN.

Wolak, J.M., Patterson A.B., Smith, S.D., and **Robbins, N.N.** (2018, June). *High-Resolution Geologic Mapping of Martian Terraced Fan Deposits*. Poster presentation at the Planetary Geologic Mappers Annual Meeting, Knoxville, TN.

## **INVITED TALKS**

Using Spatial Data to Understand the COVID-19 Pandemic, Tennessee Tech University, 2020.

## **PROFESSIONAL DEVELOPMENT**

2021 ESRI Cartography MOOC

2019 TNGIC/STS-GIS Introduction to Tennessee LiDAR utilizing ArcGIS Pro and QGIS