

Rebecca M. Rice

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OBJECTIVE: I am a highly driven and detail-oriented GIScientist, aiming to apply my cartographic knowledge and technical skills to produce geospatial solutions through spatial analysis and data visualization.

EDUCATION

Master of Science in Geographic and Cartographic Sciences, 2014-2015, GPA: 3.91

George Mason University, Fairfax, VA

Thesis: "Validating VGI Data Quality in Local Crowdsourced Accessibility Mapping Applications"

Bachelor of Arts in Geography, Minor in GIS, 2012-2014, GPA: 3.89

George Mason University, Fairfax, VA

SKILLS, CERTIFICATIONS, AND QUALIFICATIONS

- Highly proficient with GIS software, including ArcGIS and QGIS, Adobe Illustrator, Adobe Photoshop, HTML/CSS, Bootstrap, Statistical Analysis Software (SPSS), CartoDB, Leaflet, ArcGIS Online, ArcSDE, Microsoft Office (Excel, Powerpoint, Word).
- Proficient with SQL, PostgreSQL, PostGIS, R, Javascript, Matlab, Python, ArcPy, R, ERDAS.

WORK & RESEARCH EXPERIENCE

Graduate Research and Teaching Assistant, Department of Geography and Geoinformation Science, George Mason University; 2013 – Present

- Developed and moderated an interactive campus accessibility system using volunteered geographic information (VGI) of GMU's Fairfax campus and surrounding neighborhoods, which uses geocrowdsourcing as a means of obtaining the most current information about accessibility issues and transient obstacles geared toward the mobility- and visually-impaired
- Authored six peer-reviewed publications and technical reports (available at <https://goo.gl/Wd2kuc>)
- Presented research at several local, national, and international conferences
- Trained and supervised a team of moderators responsible for quality assurance of incoming data
- Created and implemented training tools for the team of moderators, to ensure the best possible quality control methods
- Extensively researched best quality control practices for VGI, spatial data quality standards, mapping for the disabled, and GPS accuracy
- Created several visualization tools and graphics using Adobe Illustrator, Photoshop, and ArcGIS (available at rmrice.com/portfolio.html)
- Edited and distributed training materials for outreach presentations to enhance participation to GMU's geocrowdsourcing project
- Used ArcGIS to digitize and create a routing network and geodatabase containing fixed obstacles to aid pedestrian routing throughout the George Mason University campus and Fairfax County.
- Created the ontologies for several project tasks and directives to be administered to project staff, the project funding committee, and for several peer-reviewed publications and technical reports
- Explored and validated large datasets of various types (vector, raster, KML, CSV) from various sources (including authoritative, user-contributed, digitized, geotagged photographs, and OpenStreetMap)
- Utilized ModelBuilder in ArcGIS to run automated geoprocessing queries for large datasets
- Organized studies to examine how individuals make geographic decisions in teams using smartphones

Head Swim Coach and Pool Operator, Greenbriar Pool Club; 2008 – 2015

- Responsible for leading Greenbriar Swim Team, a Northern Virginia Swim League (NVSL) team of 130 swimmers, ages 4 to 18, while also instructing and supervising 9 assistant coaches

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- Duties include designing and executing three practices daily, providing weekly one-on-one feedback for swimmers as well as for parents, and designing and strategizing weekly meet line-ups to maximize winning potential, while creating a team-oriented atmosphere that is encouraging for young athletes
- In 2013, lead Greenbriar to win NVSL Division 7's Sportsmanship Award.

Research Assistant, Department of Geography and Geoinformation Science, George Mason University; January 2013 – May 2013

- Developed the curriculum for an online GIS course (GGS 311, Spring 2013), utilizing open source software and ArcGIS Online
- Responsible for creating labs for the professor to distribute to the class

Substitute Teacher, Fairfax County Public Schools; 2012 – 2014

Assistant Lead Swim Coach, Herndon Aquatic Club, USA Swimming; 2011-2013

- Designed workouts for young athletes, ages 6-13, emphasizing on stroke technique and speed, and provided swimmer and parent feedback on swimmer progress.

Instructional Assistant, Fairfax County Public Schools; 2011-2012

- Served as a teacher's assistant at Sleepy Hollow Elementary School, assisting students with learning disabilities and autism, monitoring students in the classroom setting and collecting observational data, and utilizing applied behavioral techniques (ABA).

Athletics Building Manager, Franklin & Marshall College; 2009-2011

- Served in the athletics department, responsible for clerical work, maintaining athletic facilities, and supervising other student workers in the athletic buildings.

Assistant Swim Coach, Fox Mill Estates Swim Team; (2008 – 2010)

- Assisted in leading Fox Mill Estates, a Northern Virginia Swim League (NVSL) team of 120 swimmers, ages 4 to 18
- Aided in leading team to win NVSL Division 10 in 2010

Lifeguard, Splash Aquatic; 2006-2008

HONORS & AWARDS

Stipend (\$3163.50) – six-credit tuition stipend as a Graduate Research Assistant, George Mason University Department of Geography and Geoinformation Science (Fall 2015)

Travel Grant (\$1800) – to attend and present research at the International Cartographic Conference in Rio de Janeiro, Brazil, funded by the U.S. National Committee, National Science Foundation (August 2015)

Stipend (\$3163.50) – six-credit tuition stipend as a Graduate Research Assistant, George Mason University Department of Geography and Geoinformation Science (Summer 2015)

Science Slam Second Place Finisher (\$150) – George Mason University (April 2015)

Best Graduate Map (\$250) – GIS day mapping competition to create a shuttle map for George Mason University (November 2014)

Stipend (\$8058.75) – fifteen-credit tuition stipend as a Graduate Research Assistant, George Mason University Department of Geography and Geoinformation Science (2014-2015)

Alice C. Andrews Award: Outstanding Senior in Geography (\$500) – Department of Geography and Geoinformation Science, George Mason University (May 2014)

College of Science Deans Award – George Mason University (April 2014)

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Research Poster Competition Winner (\$500) – George Mason University (November 2013)

Deans List – George Mason University (Fall 2012, Spring 2013, Fall 2013, Spring 2014)

PEER REVIEWED PUBLICATIONS & TECHNICAL REPORTS

Rice, Rebecca M., Aburizaiza, Ahmad O., Rice, Matthew T., Qin, Han. (2015) "Position Validation in Crowdsourced Accessibility Mapping", *Cartographica* (in press)

Rice, Rebecca M. (2015) "Ensuring the Quality of Volunteered Geographic Information: A Social Approach", *Kartographische Nachrichten*

Qin, Han, Ahmad O. Aburizaiza, **Rebecca M. Rice**, Fabiana Paez, Matthew T. Rice (2015) "Obstacle Characterization in a Geocrowdsourced Accessibility System", *ISPRS Annals* (in press).

Qin, Han, **Rebecca M. Rice**, Sven Fuhrmann, Matthew T. Rice, Kevin M. Curtin, Eric Ong (2015) "Geocrowdsourcing and Accessibility for Dynamic Environments", *GeoJournal*, Editor-in-Chief: Daniel Sui (accepted, in press) DOI:10.1007/s10708-015-9659-x

Fayne, Jessica V., Sven Fuhrmann, Matthew T. Rice, **Rebecca M. Rice**. (2015) "Exploring Alternative Map Products to Enhance Transportation Option Awareness", *Cartography and Geographic Information Science*, ed. Nicholas Chrisman., 42:4 (in press). DOI: 10.1080/15230406.2015.1053826

Rice, Matthew T., Paez, Fabiana I., **Rice, Rebecca M.**, Ong, Eric W., Qin, Han, Seitz, Christopher R., Fayne, Jessica V., Curtin, Kevin M., Fuhrmann, Sven, Pfoser, Dieter, Medina, Richard M. (2014) "Quality Assessment and Accessibility Applications of Crowdsourced Geospatial Data: A report on the development and extension of the George Mason University (GMU) Geocrowdsourcing Testbed", pp. 1-91. BAA: #AA10-4733, Contract: # W9132V-11-P-0011, "Assessing the Value of Neo-Geographic Information". September 2014 <http://www.dtic.mil/dtic/tr/fulltext/u2/a615952.pdf>

ACTIVITIES & SOCIETIES

George Mason University (2012 – Present)

- American Society of Photogrammetry and Remote Sensing
- Phi Beta Kappa
- Gamma Theta Upsilon Geographic Honor Society
- Tau Sigma Honor Society
- Sigma Xi Honor Society
- Bloomsbury Honor Society

Franklin & Marshall College (2009 – 2011)

- Women's Intercollegiate Swim Team
- National Society for Leadership and Success: Alpha Sigma Pi Chapter
 - Community Service Chair
- WFNM Radio DJ
- Putting it Together in the Community
- F&M Cares

PROFESSIONAL AFFILIATIONS

Association of American Geographers (AAG)

- Since November, 2014

Cartography and Geoinformation Science (CaGIS)

- Since November, 2014

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INVITED LECTURES, PRESENTATIONS, & TRAININGS

“Position Validation in Crowdsourced Accessibility Mapping,” accepted paper presented at the International Cartographic Conference (ICC) in Rio de Janeiro, Brazil (August 27, 2015).

“Validating VGI Data Quality in Local Crowdsourced Accessibility Mapping Applications: a George Mason University Case Study,” presented in defense of masters thesis to committee (Matthew T. Rice, Kevin M. Curtin, and Dieter Pfoser) at George Mason University, Fairfax, VA (June 19, 2015).

“Validating the Position of Geocrowdsourced Information,” invited presentation of research for Provost-sponsored Round Table Discussion focusing on Smart Cities, at George Mason University, Fairfax, VA (June 8, 2015).

“Every Day I’m Crowdsourcin’ (Geographic Knowledge),” selected to present as a finalist at George Mason University’s Science Slam Grand Slam, Fairfax, VA (May 1, 2015).

“Evaluating the Social Approach to VGI Quality Assessment,” presented at the Association for American Geographers (AAG) Meeting in Chicago, IL (April 22, 2015).

“Every Day I’m Crowdsourcin’ (Geographic Knowledge),” selected to present at George Mason University’s Science Slam competition, Fairfax, VA (April 3, 2015). Awarded second place.

“Assessing the Value of Neo-Geographic Information / Crowdsourced Geospatial Data: Phase 4 Planning Meeting,” with Matthew T. Rice, Douglas R. Caldwell, Sven Fuhrmann, Dieter Pfoser, Han Qin, and Eric Ong, GMU-ERDC Phase 4 Planning and Technical Meeting at George Mason University, Fairfax, VA (March 27, 2015).

“Moderator Training for Evaluating Geocrowdsourced Data Quality,” training presentation for incoming project staff at George Mason University, Fairfax, VA (February 27, 2015).

“Geocrowdsourcing to Support Pedestrian Routing,” outreach presentation to spread project awareness at George Mason University, Fairfax, VA (February 27, 2015).

“Validating VGI Data Quality in Crowdsourced Accessibility Map Applications: A George Mason University Case Study,” presented to propose thesis topic to committee, with Matthew T. Rice (committee director), Kevin M. Curtin, and Dieter Pfoser, at George Mason University, Fairfax, VA (February 12, 2015).

“Geocrowdsourcing to Enhance Pedestrian Accessibility,” outreach presentation at George Mason University’s American Society for Photogrammetry and Remote Sensing (ASPRS) meeting, Fairfax, VA (November 12, 2014).

“Geocrowdsourcing to Enhance Pedestrian Accessibility,” outreach presentation at George Mason University’s American Society for Photogrammetry and Remote Sensing (ASPRS) meeting, Fairfax, VA (October 29, 2014).

“Assessing the Value of Neo-Geographic Information / Crowdsourced Geospatial Data: Phase 4 Planning Meeting,” with Matthew T. Rice, Douglas R. Caldwell, Sven Fuhrmann, Dieter Pfoser, Han Qin, and Eric Ong, GMU-ERDC Phase 4 Planning and Technical Meeting at George Mason University, Fairfax, VA (October 27, 2014).

“Assessing the Value of Neo-Geographic Information / Crowdsourced Geospatial Data: Phase 3,” with Matthew T. Rice, Douglas R. Caldwell, Richard Medina, and Han Qin, GMU-ERDC Quarterly Interim Progress Review at George Mason University, Fairfax, VA (June 30, 2014).

“Geocrowdsourcing to Enhance Pedestrian Accessibility,” poster presented at George Mason University’s College of Science Undergraduate Research Colloquium, Fairfax, VA (April 24, 2014). Won College of Science Dean’s Award.

“Assessing the Value of Neo-Geographic Information / Crowdsourced Geospatial Data: Project Technical Meeting for Phase 3,” with Matthew T. Rice, Douglas R. Caldwell, Richard Medina, Fabiana Paez, Han Qin, and Eric Ong, GMU-ERDC Quarterly Interim Progress Review at George Mason University, Fairfax, VA (March 20, 2014).

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“The 2004 Indian Ocean Tsunami and its Ecological Impacts,” poster presented at George Mason University’s GIS Day, Fairfax, VA (November 21, 2013). Awarded “Overall Best Poster & Presentation.”

TEACHING ASSISTANT EXPERIENCE

GGIS 415 – Seminar in Geography (Spring 2015)

GGIS 311 – Intro to GIS (Fall 2014, Spring 2015, Summer 2015)

VOLUNTEER EXPERIENCE

- GMU Mapathon (March 2015)
- Swim for Health (July 2014)
- Putting it Together in the Community at Franklin & Marshall College (2009-2010)
- Special Olympics Swim Meet Volunteer (2008-2009)