Matthew **Haffner**

Assistant Professor · Department of Geography and Anthropology · University of Wisconsin - Eau Claire

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Academic interests: Spatial Data Science, Quantitative Methods, Digital Geographies, Urban Geography

Professional Employment

Assistant Professor, Dept. of Geography and Anthropology, University of Wisconsin - Eau Claire   2018+
Graduate Research Assistant, Dept. of Geography, Oklahoma State University   2016-2018
Programmer, Dept. of Plant and Soil Sciences, Oklahoma State University   2015
Graduate Teaching Assistant, Dept. of Geography, Oklahoma State University   2012-2016
Transportation Intern, Association of Central Oklahoma Governments   2013

Education

Oklahoma State University   *Stillwater, Oklahoma*
Doctor of Philosophy in Geography   *Aug. 2014 - May 2018*

- Dissertation: Assessing the validity of location-based social media in the study of spatial processes
- Comprehensive exam areas: GIScience, Urban Geography, the GeoWeb
- Co-advisors: G. Allen Finchum, Adam J. Mathews

Oklahoma State University   *Stillwater, Oklahoma*
Master of Science in Geography   *Aug. 2012 - July 2014*

- Thesis: Measuring social interaction potential in Oklahoma City and Tulsa
- Advisor: Hongbo Yu

Pittsburg State University   *Pittsburg, Kansas*
Bachelor of Science in Secondary Education   *Aug. 2007 - May 2012*

- Majors: Geography and Mathematics

Publications

Peer-reviewed Journal Articles

- **Haffner, M.** and J. C. Comer. An interactive point pattern analysis web application and teaching exercise. *Journal of Geography in Higher Education.* Accepted **2019**.

- Ochsner, T., E. Linde, and **M. Haffner**. Mesoscale soil moisture patterns revealed using a sparse in situ network and regression kriging. *Water Resources Research*. Accepted **2019**.

- Fekete, E. and **M. Haffner**. Twitter and academic geography: A look at #AAG2018. *Professional Geographer*. Accepted **2019**.

- **Haffner, M.** A place-based analysis of #BlackLivesMatter and counter-protest content on Twitter. *GeoJournal*: 1-24. **2018**.

- **Haffner, M.** A spatial analysis of non-English Twitter activity in Houston, TX. *Transactions in GIS* 22(4): 913-929. https://onlinelibrary.wiley.com/doi/abs/10.1111/tgis.12335. **2018**.

- **Haffner, M.**, A. J. Mathews., E. Fekete, and G. A. Finchum. Location-based social media behavior and perception: Views of university students. *Geographical Review* 108(2):203-224. doi:10.1111/gere.12250. **2017**.

- Mathews, A. J., **M. Haffner**, and E. Ellis. GIS-based modeling of tornado siren sound propagation: Refining spatial extent and coverage estimations. *International Journal of Disaster Risk Reduction* 23:36-44. doi:10.1016/j.ijdrr.2017.04.004. **2017**.

Book chapters

- **Haffner, M.** Twitter. In *Handbook on Geographies of the Internet*, B. Warf (ed.). Cheltenahm, UK: Edward Elgar Publishing Limited. **2019.**

Maps

- **Haffner, M.** Location of Greenwood Historic District within Tulsa's contemporary food desert. In *Resilience, Environmental Justice, and the City.* Eds. B. H. Caniglia, M. Vallee, and B. Frank. pp. 84. **2017.**

Professional Conference Presentations

- **Haffner, M.*** A place-based analysis of #BlackLivesMatter and counter-protest content on Twitter. *American Association of Geographers Annual Meeting.* Washington, D.C. Paper presentation. April **2019**.

- **Haffner, M.*** and J. C. Comer. An interactive point pattern analysis web application and teaching exercise. *West Lakes Division of the American Association of Geographers Annual Meeting.* La Crosse, Wisconsin. Poster presentation. November **2018**.

- Comer, J. C.* and **M. Haffner** An interactive point pattern analysis web application and teaching exercise. *Southwest American Association of Geographers Annual Meeting.* Manhattan, Kansas. Paper presentation. October **2018**.

- **Haffner, M.*** A spatial analysis of non-English Twitter activity in Houston, Texas. *American Association of Geographers Annual Meeting.* New Orleans, Louisiana. Paper presentation. April **2018**.

- Finchum, G. A.* and **M. Haffner** How good is Twitter data: Comparing phone usage patterns using social media vs. calculated home location. *American Association of Geographers Annual Meeting.* New Orleans, Louisiana. Poster presentation. April **2018**.

- **Haffner, M.***, A. J. Mathews, E. Fekete, and G. A. Finchum. Location-based social media behavior and perception: Views of university students. *Southwest American Association of Geographers Annual Meeting*. Huntsville, Texas. Paper presentation. November **2017**.

- **Haffner, M.*** The development of shp2nosql: Command line tools for spatial data and NoSQL databases. *American Association of Geographers Annual Meeting.* Boston, Massachusetts. Paper presentation. April **2017**.

- **Haffner, M.***, A. J. Mathews., and E. Ellis. GIS-based modeling of tornado siren sound propagation in Stillwater, Oklahoma. *Southwest American Association of Geographers Annual Meeting. Denton, Texas.* Poster presentation. November **2016**.

- **Haffner, M.*** and A. J. Mathews. A multi-dimensional topology for crowd-sourced geographic information. *NSF Workshop on Geospatial Data Science in the Era of Big Data and CyberGIS.* Urbana, Illinois. Paper presentation. July **2016**.

- G. A. Finchum*, **M. Haffner**, A. J. Mathews, and E. Fekete. Analyzing smartphone usage patterns at colleges with strong gender differences using social media. *Association of American Geographers Annual Meeting.* San Francisco, California. Poster presentation. April **2016**.

- **Haffner, M.*** Conquering big spatial data: Towards a new philosophy in geographic information science. *Oklahoma State University Research Symposium.* Poster presentation. February **2016**.

- Ochsner, T. E.*, J. Dong, **M. Haffner**, A. Patrignani, J. C. Patton. Developing an operational system for daily 800-m resolution soil moisture estimates across Oklahoma. *American Geophysical Union Fall Meeting.* San Francisco, California. Paper presentation. December **2015**.

- Patton, J. C.*, T. E. Ochsner, A. Patrignani, J. Dong, **M. Haffner**. Towards a high resolution soil moisture map of Oklahoma. *American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America Annual Meeting.* Minneapolis, Minnesota. Poster presentation. November **2015**.

- **Haffner, M.***, H. Yu. Measuring social interaction potential in Oklahoma City and Tulsa. *Association of American Geographers Annual Meeting.* Chicago, Illinois. Paper presentation. April **2015.**

- Finchum, G. A.*, **M. Haffner**. Using Twitter data to analyze mobile device usage patterns in urban areas. *Association of American Geographers Annual Meeting.* Chicago, Illinois. Poster presentation. April **2015**.

- **Haffner, M.*** Using ArcGIS, Python, and R to measure social interaction potential in Tulsa and Oklahoma City. *Oklahoma South Central Arc User Group Meeting.* Moore, Oklahoma. Technical presentation. September **2014**.

- **Haffner, M.*** Measuring social interaction potential in Tulsa and Oklahoma City: A case study. *Oklahoma State University Research Symposium.* Stillwater, Oklahoma. Paper presentation. April **2014**.

    * Presenting author

Teaching Experience

<small>COURSES TAUGHT AS INSTRUCTOR OF RECORD</small>

University of Wisconsin - Eau Claire

Eau Claire, Wisconsin
June 2018 - present

- **GEOG-435** *Geographic Information Systems III*
- **GEOG-370** *Quantitative Methods in Geography*
- **GEOG-337** *Geographic Information Systems II*
- **GEOG-335** *Geographic Information Systems I* (online)
- **GEOG-111** *Human Geography*

Oklahoma State University   *Stillwater, Oklahoma*
                                                              Aug. 2012 - Dec. 2015

- **GEOG-1113** *Introduction to Cultural Geography* (lecture)
- **GEOG-1114** *Introduction to Physical Geography* (lecture)
- **GEOG-1114** *Introduction to Physical Geography* (laboratory)

Neosho County Community College   *Pittsburg, Kansas*
                                                              Aug. 2011 - Dec. 2011

- **MATH-112** *Intermediate Algebra*

Courses taught as temporary instructor

Oklahoma State University   *Stillwater, Oklahoma*
                                                                  Multiple dates

- **GEOG-4383** *Introduction to GIS Programming*
- **GEOG-3333** *Spatial Analysis*
- **GEOG-3123** *Urban Geography*
- **GEOG-2344** *Digital Tools for Environmental Exploration*
- **GEOG-5343** *Advanced GIS: Resource Management Applications*

St. Mary's Colgan High School   *Pittsburg, Kansas*
                                                              Jan. 2011 - May. 2011

- *Algebra II (as student teacher)*
- *Geometry (as student teacher)*
- *Algebra III (as substitute)*
- *Calculus (as substitute)*

Invited Lectures & Workshops

- GIS Programming with R (half-day workshop). *Wisconsin Land Information Association Annual Conference.* Appleton, Wisconsin. February **2019**.

- GIS Programming with R (half-day workshop). *Minnesota GIS/LIS Consortium Annual Conference*. St. Cloud, Minnesota. Forthcoming October **2019**.

- Maintaining graduate student life. In *GEOG-5001 - Professional Development in Geography.* Oklahoma State University. November **2017**, November **2016**.

- Big data, spatial data science, and volunteered geographic information. In *GEOG-2344 - Digital Tools for Environmental Exploration.* Oklahoma State University. September **2017**.

- High performance computing in the social sciences. In *MATH-2910 - High Performance Computing.* Oklahoma State University. March **2016**.

- The emergence of urban segregation in the United States. In *GEOG-1113 - Introduction to Cultural Geography.* Oklahoma State University. March **2016**.

- GIS programming with PostgreSQL and PostGIS. In *GEOG-4383 - Introduction to GIS Programming.* Oklahoma State University. March **2016**.

- Volunteered geographic information, Twitter, and big data. In *GEOG-2344 - Digital Tools for Environmental Exploration.* Oklahoma State University. January **2016**, November **2015**.

Honors & Awards

2019	**Summer Research Experiences for Undergraduates Grant ($4600)**	*Office of Research and Sponsored Programs, UWEC*
2017	**Norris Conference Travel Scholarship ($550)**	*Department of Geography, OSU*
2017	**Jerry Croft Award in Geography Education ($1500)**	*Department of Geography, OSU*
2016	**Norris Conference Travel Scholarship ($350)**	*Department of Geography, OSU*
2016	**Spring Featured Researcher**	*High Performance Computing Center, OSU*
2015	**Research Materials Grant ($200)**	*GPSGA, OSU*
2015	**Most Outstanding First Year PhD Student ($2000)**	*Department of Geography, OSU*
2015	**Susan Shaull Medal for Excellence in Teaching ($500)**	*Department of Geography, OSU*
2015	**Top Tier Graduate Fellowship ($7500)**	*Graduate College, OSU*
2014	**SCAUG Regional Scholarship ($1500)**	*South Central Arc User Group*
2014	**Norris Conference Travel Scholarship ($500)**	*Department of Geography, OSU*
2013	**OKSCAUG Scholarship ($500)**	*Oklahoma South Central Arc User Group*
2013	**Three Minute Thesis Competition Finalist**	*Graduate College, OSU*
2013	**Most Outstanding First Year Master's Student ($1000)**	*Department of Geography, OSU*

Professional Memberships

American Geographical Society	*Apr. 2017 - Present*
American Association of Geographers	*Nov. 2014 - Present*
Gamma Theta Upsilon (Geography Honor Society)	*May 2013 - Present*
OSU Forum of Geography Graduate Students	*Aug. 2012 - May 2018*
Fellowship of Christian Graduate Students	*Aug. 2013 - May 2015*

Professional & University Service

- **Manuscript reviewer**. *Professional Geographer (2018, 2019), Geographical Review (2018), International Journal of Applied Geospatial Research (2018)*.

- **Search committee member**. *Critical nature - society geographer position*. University of Wisconsin - Eau Claire. September - December **2018**.

- **Alternate Member**. *OSU Student University Technology Services Fee Committee (UTSF)*. Oklahoma State University. November **2017** - present.

- **Secretary**. *Gamma Theta Upsilon (Geography Honor Society)*. Oklahoma State University. August **2017** - present.

- **President**. *Forum of Geography Graduate Students*. Oklahoma State University. August **2016** - February **2018**.

- **Co-organizer**. *Forum of Geography Graduate Students invited colloquium presentations*. Stillwater, Oklahoma. Department of Geography Colloquia. August **2016** - present.

- **Co-organizer**. *Open source software in geography: Theories, developments, and pathways toward openness*. AAG Annual Meeting. Boston, Massachusetts. Paper Session. April **2017**.

- **Co-organizer**. *Open source software in geography: Theories, developments, and pathways toward openness*. AAG Annual Meeting. Boston, Massachusetts. Panel Session. April **2017**.

- **Co-organizer**. *Securing positions in academia*. Forum of Geography Graduate Students Special Sessions. Stillwater, Oklahoma. Three Part Lecture Series. January **2017**.

- **President**. *OSU Fellowship of Christian Graduate Students*. Oklahoma State University. August **2013** - May **2015**.

- **Treasurer**. *Forum of Geography Graduate Students*. Oklahoma State University. August **2012** - July **2013**.

Technical Skills

GIS	R (various libraries), PostGIS, QGIS, MATLAB Mapping Toolbox, ArcGIS
Web GIS	OpenLayers, Leaflet, GeoServer
Databases/NoSQL systems	ElasticSearch, PostgreSQL, MongoDB, MS SQL Server
Languages	R, Python, Bash, Emacs Lisp, LaTeX, MATLAB, SQL, C#, HTML, CSS, SAS
Shells	Fish, Zsh, Bash, Eshell
Operating systems	Manjaro, Debian, CentOS, Raspbian, Ubuntu, OS X, Windows
Web Frameworks	Shiny, Hugo, Jekyll, Microsoft .NET
Tools	Emacs (Spacemacs), Vim, Git, Docker, RStudio, Microsoft Visual Studio
Presentation software	remark.js, reveal.js, LibreOffice Impress, MS PowerPoint
Certifications	Base SAS Programming for SAS 9
Graphics editing	Inkscape, Adobe Illustrator
Miscellaneous	RStudio Server, Amazon Web Services, Linode, High Performance Computing

Software Projects & Consulting

SOFTWARE

Lead developer	*Webmap Toolkit: Reproducible tools for geographic teaching and research*, Independent project	https://gitlab.com/mhaffner/webmap-toolkit
Sole developer	*ispat: Interactive spatial analysis tool*, Independent project	https://geohaff.com/ispat
Sole developer	*shp2nosql: Command line tools for spatial data and NoSQL systems*, Independent project	https://github.com/mhaffner/shp2nosql
Lead developer	*Database maintenance and enhancement project*, State Historic Preservation Office of Oklahoma	http://nr2_shpo.okstate.edu
Programmer	*Soil Moisture Mapping Project*, Department of Plant and Soil Sciences, Oklahoma State University	http://soilmoisture.okstate.edu

CONSULTING CLIENTS

State Historic Preservation Office of Oklahoma City	*2018 - present*
Ministry of Natural Resources, Kurdistan Regional Government	*2017*