

Matthew M. Haffner

PH.D CANDIDATE · DEPARTMENT OF GEOGRAPHY · OKLAHOMA STATE UNIVERSITY

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Academic interests: GIScience, Urban Geography, Big Data

Education

Oklahoma State University

DOCTOR OF PHILOSOPHY IN GEOGRAPHY (EXPECTED MAY 2018)

Stillwater, Oklahoma

Aug. 2014 - Present

- Dissertation: Assessing the Validity of Location Based Social Media
- Advisors: G. Allen Finchum (Chair), Adam Mathews (Research Advisor)

Oklahoma State University

MASTER OF SCIENCE IN GEOGRAPHY

Stillwater, Oklahoma

Aug. 2012 - July 2014

- Thesis: Measuring Social Interaction Potential in Oklahoma City and Tulsa
- Advisor: Hongo Yu

Pittsburg State University

BACHELOR OF SCIENCE IN SECONDARY EDUCATION

Pittsburg, Kansas

Aug. 2007 - May 2012

- Majors: Geography and Mathematics
- GPA: 3.88

Publications

PEER-REVIEWED JOURNAL ARTICLES

- **Haffner, M.**, A. Mathews., E. Fekete, G. A. Finchum. *Location-based social media behavior and perception: Views of university students*. Geographical Review. **2017**.
- Mathews, A., **M. Haffner**, E. Ellis. *GIS-based modeling of tornado siren sound propagation: Refining spatial extent and coverage estimations*. International Journal of Disaster Risk Reduction. **2017**.

MANUSCRIPTS IN PROGRESS

- **Haffner, M.**. *The development of shp2nosql: Command line tools for spatial data and NoSQL databases*. In progress.
- **Haffner, M.**. *A spatial analysis of non-English Twitter activity in Houston, Texas*. In progress.

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.***. *The development of shp2nosql: Command line tools for spatial data and NoSQL databases*. AAG Annual Meeting. Boston, Massachusetts. Paper presentation. April **2017**.
- **Haffner, M.***, A. Mathews., E. Ellis. *GIS-based modeling of tornado siren sound propagation in Stillwater, Oklahoma*. Southwest AAG Annual Meeting. Denton, Texas. Poster presentation. November **2016**.
- **Haffner, M.***, A. 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**.
- A. Finchum*, **M. Haffner**, A. Mathews, 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**.
- **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. April **2015**.
- **Haffner, M.*** *Using ArcGIS, Python, and R to measure social interaction potential in Tulsa and Oklahoma City*. Technical presentation. Oklahoma South Central Arc User Group Meeting. Moore, Oklahoma. September **2014**.
- **Haffner, M.*** *Measuring social interaction potential in Tulsa and Oklahoma City: A case study*. Oklahoma State University Research Symposium. Paper presentation. Stillwater, Oklahoma. April **2014**.

* Presenting author

Experience

Oklahoma State University

GRADUATE RESEARCH ASSISTANT - DEPARTMENT OF GEOGRAPHY

Stillwater, Oklahoma

Jan. 2016 - Present

- Diagnosed and fixed issues in Microsoft SQL Server databases
- Improved the functionality, security, and aesthetics of Oklahoma's State Historic Preservation website
- Wrote programs in C#, designed web pages in the Microsoft .NET framework

GRADUATE TEACHING ASSISTANT - DEPARTMENT OF GEOGRAPHY

Aug. 2012 - Dec. 2015

- Taught Intro. to Cultural Geography (lecture) for three semesters
- Taught Intro. to Physical Geography (lecture) for one semester
- Taught Intro. to Physical Geography (laboratory) for five semesters

PROGRAMMER - DEPARTMENT OF PLANT AND SOIL SCIENCES

May 2015 - Aug. 2015

- Led a workshop session on soil moisture mapping using the MATLAB Mapping Toolbox
- Helped develop an automated soil moisture mapping system
- Aided in developing a MATLAB kriging library

Association of Central Oklahoma Governments

Oklahoma City, Oklahoma

TRANSPORTATION INTERN

May 2013 - Aug. 2013

- Conducted spatial analysis using ArcGIS
- Wrote vast formulas in Microsoft Excel to organize data for over 125,000 car crashes
- Updated land use shapefiles in a network geodatabase

Neosho County Community College

Pittsburg, Kansas

CAVE INSTRUCTOR

Aug. 2011 - Dec. 2011

- Taught *Intermediate Algebra* to incoming freshmen
- Was the sole instructor in a class of 22 students

St. Mary's Colgan High School

Pittsburg, Kansas

STUDENT TEACHER

Jan. 2011 - May. 2011

- Taught two sections of *Algebra II* and two sections of *Geometry*
- Substitute taught in *Calculus*, *Algebra III*, and *Junior High Physical Education*

Pittsburg State University

Pittsburg, Kansas

MATHEMATICS TUTOR - MATHEMATICS DEPARTMENT

Jan. 2009 - May 2011

- Tutored students in Calculus I, Calculus II, Calculus III, Discrete Mathematics, Abstract Algebra, Mathematical Modeling, Probability and Statistics, Elementary Statistics, and College Algebra

Invited Lectures

- *High Performance Computing in the Social Sciences*. MATH-2910 - High Performance Computing. Oklahoma State University. March **2016**.
- *The Emergence of Urban Segregation in the United States* GEOG-1113 - Introduction to Cultural Geography. Oklahoma State University. March **2016**.
- *GIS Programming with PostgreSQL and PostGIS*. GEOG-4383 - Introduction to GIS Programming. Oklahoma State University. March **2016**.
- *Volunteered Geographic Information, Twitter, and Big Data*. GEOG-2344 - Digital Tools for Environmental Exploration. Oklahoma State University. January **2016**, November **2015**.

Honors & Awards

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| 2017 | Norris Conference Travel Scholarship | Dept. of Geography, OSU |
| 2017 | Jerry Croft Award in Geography Education | Dept. of Geography, OSU |
| 2016 | Norris Conference Travel Scholarship | Dept. of Geography, OSU |
| 2016 | Featured Researcher (Spring) | High Performance Computing Center, OSU |
| 2015 | Research Materials Grant | GPSGA, OSU |
| 2015 | Most Outstanding First Year PhD Student | Dept. of Geography, OSU |
| 2015 | Susan Shaull Medal for Excellence in Teaching | Dept. of Geography, OSU |
| 2015 | Top Tier Graduate Fellowship | Grad. College, OSU |
| 2014 | SCAUG Regional Scholarship | South Central Arc User Group |
| 2014 | Norris Conference Travel Scholarship | Dept. of Geography, OSU |
| 2013 | OKSCAUG Scholarship | Oklahoma South Central Arc User Group |
| 2013 | Competition Finalist | Three Minute Thesis Competition, OSU |

Professional Memberships

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| President , OSU Forum of Geography Graduate Students | Aug. 2016 - Present |
| Member , American Geographical Society | Apr. 2017 - Present |
| Member , American Association of Geographers | Nov. 2014 - Present |
| Member , Gamma Theta Upsilon (Geography Honor Society) | May 2013 - Present |
| Treasurer , OSU Forum of Geography Graduate Students | Aug. 2012 - July 2013 |
| Member , OSU Forum of Geography Graduate Students | Aug. 2012 - Present |
| Member & President , OSU Fellowship of Christian Graduate Students | Aug. 2013 - May 2015 |

Professional/University Service

- **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. Stillwater, Oklahoma. Three Part Lecture Series. January **2017**.
- **Co-organizer.** *Forum of Geography Graduate Students Invited Colloquium Presentations.* Stillwater, Oklahoma. Department of Geography Colloquia. **2016-2017**.

Technical Skills

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| GIS | R, PostGIS, QGIS, MATLAB Mapping Toolbox, ArcGIS |
| Databases | ElasticSearch, PostgreSQL, MongoDB, MS SQL Server |
| Programming | Bash, R, Python, SQL, MATLAB, SAS |
| Shells | Zsh, Bash, Eshell |
| Operating systems | Arch Linux (Manjaro), Ubuntu, Fedora, OSX, Windows |
| Certifications | Base SAS Programming for SAS 9 |
| Graphics editing | Inkscape, Adobe Illustrator |
| Tools | Emacs (Spacemacs), Vim, Git, Microsoft Visual Studio |
| Miscellaneous | High Performance Computing |