

# Matthew M. Haffner

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

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Academic interests: GIScience, Urban Geography, Big Data

## Education

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### 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

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### PEER-REVIEWED JOURNAL ARTICLES (UNDER REVIEW)

- **Haffner, M.**, A. Mathews., E. Fekete, G. A. Finchum. *Location-based social media behavior and perception: Views of university students.* **Under review.**
- Mathews, A., E. Ellis, **M. Haffner.** *GIS-based modeling of tornado siren sound propagation: Refining spatial extent and coverage estimations.* **Under review.**

### 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.

## Professional Conference Presentations

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

\* Notes presenting author

## Experience

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### Oklahoma State University

Stillwater, Oklahoma

#### GRADUATE RESEARCH ASSISTANT - DEPARTMENT OF GEOGRAPHY

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 kriging library for use in MATLAB

### 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

### MATHEMATICS TUTOR - MATHEMATICS DEPARTMENT

Pittsburg, Kansas

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

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- *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	<b>Norris Conference Travel Scholarship</b>	Dept. of Geography, OSU
2017	<b>Jerry Croft Award in Geography Education</b>	Dept. of Geography, OSU
2016	<b>Norris Conference Travel Scholarship</b>	Dept. of Geography, OSU
2016	<b>Featured Researcher (Spring)</b>	High Performance Computing Center, OSU
2015	<b>Research Materials Grant (\$200)</b>	GPSGA, OSU
2015	<b>Most Outstanding First Year PhD Student</b>	Dept. of Geography, OSU
2015	<b>Susan Shaull Medal for Excellence in Teaching</b>	Dept. of Geography, OSU
2015	<b>Top Tier Graduate Fellowship</b>	Grad. College, OSU
2014	<b>SCAUG Regional Scholarship</b>	South Central Arc User Group
2014	<b>Norris Conference Travel Scholarship</b>	Dept. of Geography, OSU
2013	<b>OKSCAUG Scholarship</b>	Oklahoma South Central Arc User Group
2015	<b>Competition Finalist</b>	Three Minute Thesis Competition, OSU

## Professional Memberships

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<b>President</b> , Forum of Geography Graduate Students	Aug. 2016 - Present
<b>Member</b> , Association of American Geographers	Nov. 2014 - Present
<b>Member</b> , Gamma Theta Upsilon (Geography Honor Society)	May 2013 - Present
<b>Treasurer</b> , Forum of Geography Graduate Students	Aug. 2012 - July 2013
<b>Member</b> , Forum of Geography Graduate Students	Aug. 2012 - Present
<b>Member &amp; President</b> , Fellowship of Christian Graduate Students	Aug. 2013 - May 2015

## Professional/University Service

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- **Co-organizer**. *Open Source Software in Geography: Theories, Developments, and Pathways Toward Openness*. AAG Annual Meeting. Boston, Massachusetts. Paper Session. April **2017** (forthcoming).
- **Co-organizer**. *Open Source Software in Geography: Theories, Developments, and Pathways Toward Openness*. AAG Annual Meeting. Boston, Massachusetts. Panel Session. April **2017** (forthcoming).
- **Chair and Organizer**. *AAG Practice Session*. Forum of Geography Graduates. Stillwater, Oklahoma. Three Part Lecture Series. January **2017**.

- **Co-organizer.** *Securing positions in Academia.* Forum of Geography Graduates. Stillwater, Oklahoma. Three Part Lecture Series. January **2017**.
- **Co-organizer.** *Forum of Geography Graduates Invited Colloquium Presentations.* Department of Geography Colloquia. Stillwater, Oklahoma. **2016-2017**.

## Technical Skills

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