**Damani A. Driver, MSc.**
Nashville, Tennessee
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## EDUCATION

*University of North Carolina Wilmington, Wilmington, North Carolina, 2015 – 2018*
Master of Science, 2018
**Major**: Geoscience
**Specialty**: Geophysics

*University of Tennessee, Knoxville, Tennessee, 2013 – 2015*
Bachelor of Science, 2015
**Major**: Geology

*Nashville State Community College, Nashville, Tennessee, 2010 – 2013*
Associate of Science, 2013
**Major**: Biology

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## FUNCTIONAL SKILLS

Scripting Languages
**MATLAB** – *Simulink MathWorks*
**Python** – *Python Software Foundation*
**R** – *R Development Core Team*
**Seismic Analysis Code (SAC)** – *Incorporated Research Institutes for Seismology*

Relational Database Management Systems
**MySQL** – *Oracle Corporation*

Software
**Adobe Illustrator** – *Adobe Systems Incorporated*
**ArcGIS** – *Environmental Systems Research Institute*
**ENVI** – *Harris Geospatial*
**Microsoft Excel** – *Microsoft Corporation*
**QGIS** – *QGIS Development Team*
**Sentinel-2 Toolbox (S2TBX)** – *European Space Agency*

Markup Languages
**CSS** – *World Wide Web Consortium*
**HTML** – *W3C & WHATWG*

Scientific Instruments
**Taurus Digital Seismograph** – *Nanometrics Seismological Instruments*
**Topcon Total Station** – *Topcon Positioning Systems Incorporated*
**Trillium Seismometer** - *Nanometrics Seismological Instruments*

## PROFESSIONAL & RESEARCH EXPERIENCE

Graduate Student Researcher – Seismology, August 2015 – May 2018

*University of North Carolina Wilmington*

Supervisor: Scott Nooner, Ph.D., Associate Professor

**Dissertation**: tinyurl.com/y7dxeplr

- Independently designed and executed a large scale scientific investigation through acquisition and synthesis of existing geophysical and geospatial data, construction of bespoke field equipment for the deployment of scientific instruments, acquisition of large amounts of unique geophysical data, and subsequent generation of robust spectral analyses through the development of algorithms in MATLAB
- Object oriented programing in MATLAB (tinyurl.com/ya5kcaxz)
- Algorithm development for batch processing, data transformation, and visualization
- Quantitative study of daily teleseismic signal central tendency
- Data transformation and subsequent signal to noise optimization
- Elucidation of the dominant signal frequencies in the region of interest
- Development of unique media for scientific communications including project and budget proposals, informational posters for technical sessions, and cartographic products

Graduate Teaching Assistant – Earth & Ocean Sciences, January 2016 – May 2017

*University of North Carolina Wilmington*

Supervisor: Roger Shew, Ph.D., Lecturer

- Regularly assisted departmental faculty in the education and assessment of collegiate students from diverse backgrounds through weekly lectures and laboratory exercises in fundamental geologic and geographic principles
- Encouraged students to apply critical thinking skills to geologic studies and express their knowledge in writing
- Fostered a collaborative environment among students through demonstrations and group exercises
- Effectively communicated the principles of geology to students from various academic principles

Intern - Research Hydrologist, Hydrologic Technician, July 2013 – August 2014

*United States Geological Survey Tennessee Water Science Center*

Supervisor: William Wolfe, Ph.D., Deputy Director

- Assisted federal scientists in investigations of evapotranspiration and hydrologic geomorphology through the validation of hydrologic models, data acquisition and cleansing, geospatial analysis, and the production of cartographic products using GPS and bathymetric data acquired during field expeditions
- Regular field surveying and data capture of streams and rivers in middle and northeastern Tennessee
- Populated databases with precipitation records, soil survey data, and drainage basin outflow locations, leading to the computation of volumetric water studies using a Penman-Monteith geophysical model

- Supported the large scale investigation of annual water use by thermoelectric power plants across the United States
- Utilized USGS, and USDA data services for the retrieval of geographic datasets for use in geospatial modeling in ArcGIS

Undergraduate Researcher – Microbial Ecology & Environmental Engineering, October 2013 – May 2015

*Hazen Lab - University of Tennessee, Department of Earth and Planetary Sciences*

Supervisor: Terry Hazen, Ph.D., Governor's Chair in Microbiology

**Abstract:** tinyurl.com/ydx9upux

- Independently designed and executed an experiment implementing numerous techniques in microbiology, organic chemistry, geochemistry, and statistical analysis, culminating in the development of several predictive ecological models
- Intensive training in the use of scientific laboratory equipment, investigative biological methods, and laboratory safety protocols
- Initiated the collaboration between professional scientists from diverse disciplines in multiple departments
- Acquired a large unique set of time series data comprising measurements of soil microbial respiration in response to simulated moisture regimes
- Delegation of tasks and monitoring of experiment progress while working remotely over multiple months

Undergraduate Researcher – Quaternary Paleoclimatology, January 2014 – May 2014

*University of Tennessee Knoxville, Department of Geography*

Supervisor: Sally Horn, Ph.D., Chancellor's Chair in Geography

- Assisted graduate researchers and principal investigators in laboratory tasks contributing to the application of organic geochemical techniques to investigations in stable isotope paleoclimatologic studies of human migratory patterns in the conterminous United States and Costa Rica
- Retrieved and prepared soil cores retrieved from lacustrine basins for interval sampling
- Prepared soil samples for loss on ignition testing and subsequent gas chromatography and mass spectrometry tests to elucidate a range of ratios of organic and inorganic isotopes

## PROFESSIONAL WORKSHOPS

Incorporated Research Institutes for Seismology (IRIS) Data Processing Short Course

*Northwestern University, Chicago, Illinois, August 1 – 5, 2016*

- Intensive introduction to contemporary methodologies for processing and analyzing large sets of real world time series data
- Diligent application of programming and logistical skills for the development of batch processing techniques and the selection of appropriate analyses using Python, MATLAB, Seismic Analysis Code, UNIX shell scripting, and FORTRAN during individual and collaborative exercises using geophysical data

Ball State University Geological Field Course

*Northern Rocky Mountains, Multiple Locations, May – June 2015*

- Daily application of classical and modern methods in geology and geography to field and laboratory based exercises in structural geology, sedimentology, cartography, and geospatial analysis
- Developed numerous scientific and thematic cartographic products in conjunction with verbal and written technical deliverables for deadlines on a highly varying schedule
- Maintained steady workflows through frequently changing work environments for the duration of the exercise

## SPECIAL AWARDS AND HONORS

Gordon Award for Professional Promise, April 2015

*University of Tennessee, Department of Earth and Planetary Sciences*

- Student awarded recognition and support of one student who has demonstrated aptitude for geologic knowledge and for their anticipated success as a future professional in the geologic sciences

William McNutt Johnson Award, April 2015

*Knoxville Gem and Mineral Society*

- Donor awarded recognition and support of promising students in the geological sciences

Bill Ross Award, April 2015

*University of Tennessee, Department of Earth and Planetary Sciences*

- Faculty and alumni awarded recognition and support of students pursuing a Bachelor of Science in Geology and completing a six-week, field-based geoscience exercise

## INTERNATIONAL EXPERIENCE

Gap Semester, 14 January 2018 – 11 June 2018

*England, United Kingdom*

- Five months of travel in northwestern England visiting Preston, Liverpool, Manchester, Blackpool, Lancaster, London, Birmingham, and the Lakes District
- Activities included independent studies in software and algorithm development, statistical analysis, machine learning, and web development
- Demonstrated self-reliance and independence through independent navigation, diligent budgeting and planning, and adaptation to unforeseen circumstances

## PROFESSIONAL SOCIETIES AND JOURNALS

- The American Geophysical Union, 2014 – Present
- The Geological Society of America, 2013 – Present
- The American Association of Petroleum Geologists, 2013 – Present

## FOREIGN LANGUAGES

- French, Intermediate, University of Tennessee, Lipscomb Academy, 2 Years
- Portuguese, Elementary, University of Tennessee, < 1 Year
- Spanish, Elementary, University of Tennessee, < 1 Year

## DISSERTATIONS

1. **Damani A. Driver**, Advisor - Scott L. Nooner (2017). "Teleseismic Data Acquisition in the Coastal Plain of North Carolina." *A Final Project Report submitted to the University of North Carolina Wilmington in Partial Fulfillment of the Requirements for the Degree of Master of Science in Geology, Fall 2017*. University of North Carolina Wilmington, Department of Earth and Ocean Sciences, Wilmington, North Carolina

## RESEARCH ARTICLES

1. Paradis, C.J., Mahmoudi, N., Jagadamma, S., **Driver, D.A.**, O'Dell, K.B., Schaeffer, S.M., Hazen, T.C. (2017) *Soil respiration and microbial community structure in response to simulated heavy precipitation and drought: implications for rapidly changing soil moisture regimes in humid sub-tropical climate zones*. Applied Soil Ecology, *forthcoming*

## PRESENTATIONS

1. **Driver, Damani A.** (2016). "Teleseismic Data Acquisition in the Coastal Plain of North Carolina." *Annual Meeting of the Geological Society of America (GSA), Septermber 25—28, 2016.* Denver, Colorado
2. **Damani A. Driver**, Kaela O'Dell, Charles J. Paradis, Nagissa Mahmoudi, Julian L. Fortney, Sean M. Schaeffer, and Terry C. Hazen (2014). "Severe Weather Events and Terrestrial Ecosystem Response: Soil Microbial Respiration and Biomass Changes as a Function of Soil Moisture Content in a Lexington Silt Loam from West Tennessee." *Annual Meeting of the Geological Society of America (GSA), October 19–22, 2014*. Vancouver, BC Canada
3. **Driver, Damani A.** (2014). "Changes in Soil Microbial Activity and Cell Density in Response to Drought and Heavy Precipitation Events." *Exhibition of Undergraduate Research and Creative Achievement* (*EUReCA).* University of Tennessee, Knoxville, Tennessee