Caitlin M. McShane

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Spatial Data Analytics ■ Predictive Modelling ■ Urban Vulnerability

Python Programming	Complex Systems	Microsoft Office Suite
Spatial Statistics	SQLite	Highly Motivated
Geovisualization	QGIS	Team Player
Data Analysis	Cartography	Problem Solving

Education & Training

Master of Arts in Geography – University of Colorado Boulder, CO (2020)

Bachelor of Arts *cum laude* in Geography – University of Colorado Boulder, CO (2016)

Hydrology and Water Resources Certificate - University of Colorado Boulder, CO (2016)

Work Experience

University of Colorado Boulder **Aug. 2019 – 2020**
Teaching Assistant **Boulder, CO**

- **Facilitate lab sessions for students in the 1011 course Landscapes and Water.** Tasked with teaching the lab manual designed for the Landscapes and Water class which covers topics from introductory fluvial geomorphology and hydrology
- **Establish a learning environment that is conducive for students from multiple departments** and nationalities. Tasked with generating interest in geographic concepts for undergraduates, leading field trips, and teaching students to use topographic maps to answer geographic questions.

University of Colorado Boulder **Jan. 2019 – May 2019**
Research Assistant **Boulder, CO**

Create high fidelity datasets for the National Renewable Energy Lab. Tasked with building housing density, housing value, and parcel size datasets for the coterminous United States that will be used in to build predictive models for wind farms.

Be familiar with SQL database schemas and big data. Tasked with understanding the contents and structure of databases that are greater than 1TB. Competency in SQL/SQLite and the equivalent python interface.

University of Colorado Boulder **Aug. - Dec. 2018**
Teaching Assistant **Boulder, CO**

Plan lessons and instruction for Geographic Information Science I. Tasked with leading lab sessions that instruct students on using ESRI ArcGIS and applying didactic skills from lecture to real world problems.

Office of Emergency Management (OEM) **March - Dec. 2017**

Denver, CO

Tasked with the collection, organization, and creation of data that may pertain to managing large scale crisis.

Build an OEM specific dataset that evaluates social vulnerability and resource quantity within

dispersion zones for various chemicals under dynamic circumstances. Analyze data from different sources and populate dataset with estimations of capital loss per AEGL zone.

Projects

Scaling Complexity: A Theoretical Framework for Urban Vulnerability

Urbanized Land Use in the USA 1945-2015

The Creeping Disaster along the Coast: Built Environment, Coastal Communities and Population Vulnerability to Sea Level Rise

Publications

Uhl, J. H., Leyk, S., McShane, C. M., Braswell, A. E., Connor, D. S., and Balk, D.: Fine-grained, spatiotemporal datasets measuring 200 years of land development in the United States, Earth Syst. Sci. Data, 13, 119–153, https://doi.org/10.5194/essd-13-119-2021, 2021.

Presentations

American Geophysical Union (AGU) Fall Conference 2020: Poster presentation on "Understanding the Built Environment's Contribution to Vulnerability"

American Geophysical Union (AGU) Fall Conference 2015: Poster presentation on "The Spatial Characteristics of Extreme Precipitation in the Arctic"

Von Dreden Stacey Fellowship Presentation 2015: Power point presentation on research conducted using the award from the Von-Dreden Stacey fellowship

University of Colorado Boulder Donor Luncheon 2016: Spoke to University of Colorado Donors about research conducted using funds from the UROP and Von-Dreden fellowships

Honors and Awards

SigmaXi Honor Society Member

Von-Dreden Stacey Fellowship

Undergraduate Research Opportunity Fund Fellowship

Cum laude