

# Caitlin Haedrich

caitlin.haedrich@gmail.com

• 802-299-7082

• Raleigh, NC

## EDUCATION

**North Carolina State University:** PhD Student in Geospatial Analytics 2020 - Present

**Dartmouth College:** Non-degree seeking coursework in Physics 2019 - 2020

**Middlebury College:** B.A. in Mathematics and Geology 2013 - 2017

Geology Thesis: "LiDAR Ground Surface Classification in the Middlebury River Watershed" Advisor: Will Amidon.

Math Thesis: "Rational Points on Elliptic Curves and Mordell's Theorem" Advisor: David Dorman.

**Middlebury School of the Environment** Summer 2015

**University of Otago, New Zealand** Spring 2015

## EXPERIENCE

**Research Physical Scientist, USACE Cold Regions Research and Engineering Laboratory, February 2018 – July 2020**

Worked with Dr. Daniel Breton on radio frequency propagation in urban and mountainous environments. Conducted research on urban radio-frequency noise.

### Related Publications:

Breton, D.J., Haedrich, C.E., Kamrath, M.J., Wilson, D.K. (2019). "Street-scale Mapping of Urban Radiofrequency Noise at VHF and UHF." *AGU Radio Science Journal*.

Breton, D.J., Haedrich, C.E., Hoch, G.R., Streeter, S.S., Maxson, M.L. (2020). "The Urban Ground-to-Ground Radio-Frequency Channel: Measurement and Modeling in the Ultrahigh Frequency Band." *ERDC/CRREL Technical Report 20-8*.

Haedrich, C. E., Breton, D. J. (2019). "Measuring Very High Frequency and Ultrahigh Frequency Radio Noise in Urban Environments: A Mobile Measurement System for Radio-Frequency Noise." *ERDC/CRREL Technical Report 19-8*.

### Related Conference Papers:

Breton, D.J., Haedrich, C.E. (2020). "Occluded Scatterers and the Urban Ground-to-ground Channel at Low UHF." *North American Radio Science Meeting and IEEE International Symposium on Antennas and Propagation*.

Haedrich, C.E., Breton, D.J. (2020). "Modeling RF Noise in Urban Environments with Spatially Distributed Point Sources." *North American Radio Science Meeting and IEEE International Symposium on Antennas and Propagation*.

Haedrich, C.E., Breton, D.J., Wilson, D.K. (2019). "Isarithmic mapping of radio-frequency noise in urban environments." *Proceedings of the Military Sensing Symposia on Battlespace Acoustic, Seismic, Magnetic and Electric-Field Sensing and Signatures*. San Diego, CA.

Haedrich, C.E., Breton, D.J., Wilson, D.K. (2018). "Preliminary measurements on the geography of urban VHF radio-frequency noise." *Proceedings of the Military Sensing Symposia on Battlespace Acoustic, Seismic, Magnetic and Electric-Field Sensing and Signatures*. Gaithersburg, MD.

Kamrath, M.J., Wilson, D.K., Hart, C.R., Breton, D.J., Haedrich, C.E. (2019). "Evaluating parametric probability density function for urban acoustic noise." *INTER-NOISE and NOISE-CON Congress and Conference Proceedings*.

**AWARDS AND HONORS**

2019 CRREL Excellence Award

Lang, R., Suer, C., Breton, D.J., Haedrich, C.E. (2019). "UHF Mountain Propagation: Measurements and Modeling." *USNC-URSI Radio Science Meeting*. Atlanta, GA.

Suer, C., Lang, R., Breton, D.J., Haedrich, C.E. (2020). "P and L Band Coherent Wave Propagation through a Tree Covered Mountainside." *North American Radio Science Meeting and IEEE International Symposium on Antennas and Propagation*.

### **Environmental Geophysics Intern, DoE Lawrence Berkeley National Laboratory, June 2017 – December 2017**

Processed and analyzed multispectral and RGB (Truecolor) imagery collected by drone as part of the Watershed Function Scientific Focus Area (SFA) and Next Generation Ecosystem Experiments (NGEE-Arctic). Managed large datasets and worked with a team of scientists to parameterize hydrogeochemical processes in the critical zone.

#### **Related Conference Papers:**

Falco, N., Dafflon, B., Wainwright, H., Leger, E., Haedrich, C., Peterson, J., Hubbard, S. (2018). "Integrated imaging of above and below ground properties and their interactions: A case study in East River Watershed, Colorado." *In SEG Technical Program Expanded Abstracts 2018*.

### **Teton Science School AmeriCorps Field Education Intern, Summer 2016**

Taught all ages the ecology, geology and history of conservation in the Greater Yellowstone Ecosystem.

### **Undergraduate Research Assistant, Middlebury College, August 2015**

Worked for Professor Will Amidon extracting river profiles and watershed information from the LiDAR data of the Middlebury and New Haven Rivers.