MADELEINE (MADS) O'BRIEN

maobrien@methanesat.org| linkedin.com/in/obrienma | madsobrien.com *(portfolio)*

RELEVANT EXPERIENCE

MethaneSAT, LLC Remote / San Francisco, CA
Senior Geospatial Analyst August 2021 – Present

David Rumsey Map Center at Stanford University Palo Alto, CA
Reference Assistant Feb 2018 – June 2018

- Introduced patrons to historical and modern map exhibits and answered their cartography-related questions
- Authored 3-part workshop series teaching novices how to georeference maps from the Rumsey collection and incorporate the results in interactive ArcGIS Online webmaps

Stanford Geospatial Center at Stanford University Palo Alto, CA
GIS Assistant October 2017 – June 2018

- Consulted 1-on-1 with Stanford affiliates to resolve technical problems, find suitable data, or develop analysis workflows for geospatial projects
- Authored a 3-hour "Geologic Mapping with ArcGIS" tutorial for future earth science students
- Created 32 digital index maps displaying the geographic extents of paper maps held by Stanford's library, making the materials and metadata more accessible to scholars
- Supported research in diverse departments such as geophysics, anthropology, and civil engineering

United States Geological Survey, Volcano Science Center Menlo Park, CA
Field Assistant / Research Assistant June 2016 – October 2017

- Quantified vegetation coverage in historic aerial photos using max. likelihood supervised image classification
- Wrote a Python workflow to classify land cover 1000x per photograph, generate tabular data summarizing the quality of classification results, and calculate zonal statistics using the output
- Synthesized GIS analyses, field-based flux measurements, and published literature to describe the relationship between volcanic gas flux, seismicity, and deforestation on Mammoth Mountain, CA, over 50 years
- Collected water and gas samples in Yellowstone NP, Lassen Volcanic NP, and Long Valley caldera

EDUCATION

Yale University, School of the Environment (formerly Sch. of Forestry & Environmental Studies) New Haven, CT
Master of Environmental Science, 2020

- ***Master's Thesis:*** "UAV deployment for fine-scale CO_2 estimation in a mid-size city"
- ***Course Highlights:*** Observing Earth from Space, Geospatial Software Design, Multivariate Statistics, Photogrammetry with Drones, Humanitarian Aid

Wesleyan University Middletown, CT
Bachelor of Arts, Earth and Environmental Science + Science in Society, 2016

PUBLICATIONS & PRESENTATIONS

McCann, B. T., Davis, J., Osborne, D., Durham, C., **O'Brien, M.**, and Raymond, N. A. (2021). "Quantifying climate change relevant humanitarian programming and spending across five highly disaster vulnerable countries." *Disasters.* doi.org/10.1111/disa.12453

Poster presentations (2016 and 2019), American Geophysical Union Fall Meeting, San Francisco, CA

SKILLS

Software: ArcGIS 10.x + Spatial Analyst + Network Analyst | ArcGIS Online | ENVI 5.4 | Python + arcpy | R | Minitab 18 | exposure to SPSS and Stata | Novice in: Google Earth Engine and QGIS
Geospatial: Image interpretation & classification (supervised & unsupervised) | Navigation & field data collection with GPS (Trimble, Garmin), ArcGIS Collector, Avenza, & paper maps | Data management & analysis
Certifications: Remote Pilot Certificate, small UAS (FAA, exp. 6/2021). Prior Wilderness First Aid cert.