Lindsey J. Heagy

Postdoctoral Researcher
Department of Statistics
University of California, Berkeley

Last updated: July, 2019
ORCID: 0000-0002-1551-5926
email: lindseyheagy@gmail.com
website: https://lindseyjh.ca

Education

2012 – 2018 **PhD** in Geophysics, University of British Columbia
Thesis: Electromagnetic imaging for subsurface injections
Advisor: Douglas Oldenburg
Select Awards: NSERC Vanier Scholarship, Alexander Graham Bell Canada Graduate Scholarship

2008 – 2012 **BSc** with First Class Honors in Geophysics, University of Alberta
Select Awards: Governor General's Silver Medal, Lieutenant-Governor's Gold Medal, APEGGA Past Presidents' Medal in Geophysics

Appointments

Nov. 2018 – present **Postdoctoral Researcher**, Department of Statistics, University of California, Berkeley
Advisor: Fernando Pérez

Professional Experience

Apr. 2016 – Sep. 2017 **Aranz Geo Canada Ltd** (Calgary, AB): Computational Geophysics Consultant (part-time)

Nov. 2015 – Apr. 2016 **3point Science Inc** (Calgary, AB): Computational Geophysicist (part-time)

Jun. 2014 – Aug. 2014 **Schlumberger Doll Research** (Boston, MA): Geophysics Intern

Jun. 2013 – Aug. 2013 **Schlumberger Electromagnetic Imaging** (Richmond, CA): Geophysics Intern

May 2012 – Aug. 2012 **ConocoPhillips Canada** (Calgary, AB): Geophysics Summer Student

May 2011 – Aug. 2011 **Alfred Wegener Institute of Polar and Marine Research** (Bremerhaven, Germany): Geophysics Summer Student

Grants

Awarded

2019 **Senior Personnel**: NSF - EarthCube Data Capabilities: Jupyter meets the Earth: Enabling discovery in geoscience through interactive computing at scale ($\sim$ \$1,960,000)

2019 **Senior Personnel**: Geoscientists Without Borders (\$50,000)
Improving Water Security in Mon State, Myanmar via Geophysical Capacity Building

Completed

2014 **Co-PI**: Science Center for Learning and Teaching - Development Grant (\$2,500)

Software and Open Science

2017 – present **Editor:** Journal of Open Source Software
Topics: Geoscience, geophysics (http://joss.theoj.org/about)

2014 – present **Project-lead: GeoSci.xyz**
Collaboratively developed online interactive textbooks for geophysics education, including: *Geophysics for Practicing Geoscientists*, *Electromagnetic Geophysics*, *GeoSci Labs*

2014 – present **Project-lead: SimPEG**
Open-source software project for geophysical simulations and inversions. Software repositories include: SimPEG, discretize, geoana

Teaching

Undergraduate

2013 – 2016 **Teaching Assistant:** EOSC 350: Environmental, Geotechnical, and Exploration Geophysics (University of British Columbia)

2015 **Teaching Assistant:** Directed Studies: Inversion in Applied Geophysics (University of British Columbia)

2012 **Teaching Assistant:** EOSC 354: Analysis of Time Series and Inverse Theory for Earth Scientists (University of British Columbia)

Workshops & Short Courses

2018 **Co-Instructor:** Best Practices for Modern Open-Source Research Codes (AGU)

2018 **Co-Instructor:** 3D EM Modelling and Inversion with Open Source Resources (AEM 2018: 7th International Workshop on Airborne Electromagnetics)

2017 **Co-Instructor:** Geophysical Electromagnetics: Fundamentals and Applications (Society of Exploration Geophysics Distinguished Instructor Short Course)

2016 **Organizer:** Geophysical Simulation and Inversion (Banff International Research Station)

Select Publications

2019 Fournier, D., **Heagy, L. J.** & Oldenburg, D. W., 2019. Sparse magnetic vector inversion in spherical coordinates: Application to the Kevitsa Ni-Cu-PGE magnetic anomaly, Finland. *Geophysics* **(in review)**

Heagy, L. J., Kang, S., Cockett, R. & Oldenburg, D. W., 2019. Open source software for simulations and inversions of airborne electromagnetic data. *Exploration Geophysics*. doi: 10.1080/08123985.2019.1583538. arXiv: 1902.08238

Heagy, L. J. & Oldenburg, D. W., 2019. Modeling electromagnetics on cylindrical meshes with applications to steel-cased wells. *Computers & Geosciences*. doi: 10.1016/j.cageo.2018.11.010. arXiv: 1804.07991

Heagy, L. J. & Oldenburg, D. W., 2019. Direct current resistivity with steel-cased wells. *Geophysical Journal International* doi: 10.1093/gji/ggz281. arXiv: 1810.12446

2018 Cockett, R., **Heagy, L. J.** & Haber, E., 2018. Efficient 3D inversions using the Richards equation. *Computers & Geosciences*. doi: 10.1016/j.cageo.2018.04.006

2017 **Heagy, L. J.**, Cockett, R., Kang, S., Rosenkjaer, G. K., & Oldenburg, D. W., 2017. A framework for simulation and inversion in electromagnetics. *Computers & Geosciences*. doi: 10.1016/j.cageo.2017.06.018

2016 Caudillo-Mata, L. A., Haber, E., **Heagy, L. J.** & Schwarzbach, C., 2016. A framework for the upscaling of the electrical conductivity in the quasi-static Maxwell's equations. *Journal of Computational and Applied Mathematics*. doi: 10.1016/j.cam.2016.11.051

2015 Cockett, R., Kang, S., **Heagy, L. J.**, Pidlisecky, A. & Oldenburg, D. W., 2015. SimPEG: An open source framework for simulation and gradient based parameter estimation in geophysical applications. *Computers & Geosciences*. doi: 10.1016/j.cageo.2015.09.015