Elizabeth **Menezes**

Grad Student, Geophysics · Dept. of Geological Sciences | CIRES

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Education

University of Colorado Boulder
Boulder, Colorado

Master of Science in Geophysics (In progress) — *Aug 2020 - Present*

- Specializing in Seismology and Geodesy
- **Researching** remote sensing applications to induced seismicity

The University of Texas at Austin
Austin, Texas

Bachelor of Science in Geophysics — *Aug 2014 - May 2018*

- Program through the Jackson School of Geosciences

Skills

- **Adobe Illustrator, Photoshop and InDesign** — for **graphic design** and **scientific illustrations** such as original vector designs, production layouts, infographics, and other visual designs across a variety of print and digital platforms
- **Hypertext Markup Language (HTML), Cascading Style Sheets (CSS) and JavaScript** — for utilizing markup, styling and programming languages to produce visually interesting web products for my **portfolio**
- **ArcGIS/ArcMap, QGIS/GDAL, GMTSAR** — for geoprocessing, spatial analysis and making high quality map layouts
- **Python/Jupyter Notebooks** — for numerical modelling, data visualizations and animations
- **MATLAB and R** — for graphing data and statistical analysis
- **LaTex and Markdown** — for formatting report layouts, documents and presentations
- **Tableau and D3** — for creating various types of digital communication and motion graphics

Work Experience

U.S. Bureau of Reclamation
Denver, Colorado

Seismic Hazard Intern — *May 2021 - July 2021*

- Worked on an induced seismcity project associated with salinity control injection wells in Paradox Valley, CO
- Explored different proxy methods to estimate the time-averaged shear-wave velocity through 30 m below the ground surface
- Improved Vs30 models by incorporating geologic information using ARCMAP and R scripting skills
- Contributed to Probabilistic Seismic Hazard Analysis (PSHA) source inputs

Inspiring Girls Expeditions, Girls on Rock
Boulder, Colorado

Science and Art Instructor — *Dec 2021 - Present*

- **Girls on Rock** - a wilderness science education program for high school girls from minority and disadvantaged backgrounds
- Educated the students during a two week program on how to conduct scientific research and integrate art as a communication tool for their findings

NEST Studio for the Arts
Boulder, Colorado

Children's Book Writer — *May 2021 - Present*

- Granted funding by the Nature, Environment, Science & Technology Studio to further efforts in combing artistic practice and scientific research
- Currently using this funding award to write and illustrate a coloring book for middle and high school aged students that teaches techniques on how art can be a useful tool in the geosciences

Halliburton Energy Services Inc.
USA/Norway

Field Engineer/Geosteering Geoscientist — *Sep 2018 - Sep 2020*

- Tested and manually assembled tool strings for downhole data acquisition
- Provided file information from surveys such as measured depth, true vertical depth, azimuth, inclination to directional drilling team
- Handled real-time drilling operations in order to execute all field engineering technical duties for jobs in the North Sea
- Delivered pre-well modelling, real-time interpretations, and post-well analyses to client

Denali National Park
Denali, Alaska

Science Communication Intern for U.S. Department of the Interior — *May 2018 - Aug 2018*

- Educated children in the field on topics such as geoscience, biology, ecology and leave no trace ethics
- Created eight life sized **museum exhibits** for the winter visitor center using Adobe Illustrator
- Edited and designed a children's outdoor educational book: **Denali for Families: A Visitor's Guide to Denali National Park and Preserve**

Research Experience

University of Colorado Boulder, Department of Geological Sciences
Boulder, Colorado

Graduate Research Assistant for Anne Sheehan and Kristy Tiampo — *Aug 2020 - Present*

- Gathered earthquake catalogs located in the Raton Basin for preparation to perform statistical analysis
- Processed Interferometric Synthetic Aperture Radar (InSAR) data to measure and create a surface deformation time-series

Gulf Basin Depositional Synthesis Research Group
Austin, Texas

UT Institute for Geophysics Undergraduate Research Assistant — *Aug 2017 - Jan 2018*

- Edited, geo-referenced, digitized and constructed map products in ArcGIS
- Located, accessed and scanned geologic data (well, paleontology, literature and seismic)
- Digitized raster well logs to digital LAS format using Neuralog software
- Loaded seismic and well data into seismic interpretation software (Landmark)

Research with UT professor Dr. Charles Kerans
Austin, Texas

Undergraduate Research Assistant — *Jan 2016 - Jan 2017*

- Characterized the geomorphology and sequence stratigraphy of Pedernales Falls in search for Smithwick Shale to provide evidence and explanation of the waterfall's location
- Traversed and outlined the research site at Pedernales Falls State Park, Texas
- Classified and categorized using the Folk classification scheme for observations and measured rock hardness with a Schmidt Hammer

Writing & Presentations

Geodetic Techniques Applied Towards Understanding Induced Earthquakes in Raton Basin, Colorado & New Mexico
New Orleans, Louisiana

Author — *2021*

- **Technical poster** to share my research findings from Sentinel-1 satellite data at the American Geophysical Union (AGU) 2021 conference
- I utilized Adobe InDesign to create the poster and python to create the figures

Geomapping: A solution for Discovering Potential Reservoirs with Ultra Deep Azimuthal Resistivity
Stavanger, Norway

Author — *2020*

- Technical paper with Halliburton written for publication, but discontinued due to leave from company
- Focused on mapping the subsurface of a field in the North Sea

Ultra Deep Dive into the Benefits of using Ultra Deep Azimuthal Resistivity and Geosignal Images
Houston, Texas

Author — *2019*

- Technical poster for internal distribution within Halliburton
- Highlighted the use of an ultra deep azimuthal resistivity tool to overcome the potential challenges that arise with low resistivity contrasts, gradational boundaries, and seismic uncertainty

Geosteering Pre-well Report on Modelling Low Resistivity Contrasts with Gradational Boundaries.
Stavanger, Norway

Author — *2019*

- Internal Halliburton presentation for a global webinar with attendees from Saudi Arabia, Europe, and the Americas
- Presented findings from a geological model using inverted deep resistivity measurements

Denali for Families: A Visitor's Guide to Denali National Park and Preserve
Denali, Alaska

Editor and Illustrator — *2018*

- **Children's book** about nature and geology for kids and families
- Guide was produced by the National Park Service and Alaska Geographic working in partnership through the Murie Science and Learning Center and published in 2020