Luel Emishaw, Ph.D, PG

luel.emishaw@okstate.edu
469-321-2948

Education

Doctor of Philosophy in Geology *December 2020*
Oklahoma State University, Stillwater, OK

Master of Science in Geology *December 2015*
Oklahoma State University, Stillwater, OK

Bachelor of Science in Geology *June 2012*
Addis Ababa University, Ethiopia
with honors

Licensure & Post Graduate Certifications

Professional Geologist PG (Texas) *November 2024 - November 2025*

Artificial intelligence & Machine Learning: Business Applications *April 2023*
University of Texas at Austin, Austin, Tx

Graduate Colored Stones *In Progress*
Gemological Institute of America, Carlsbad, Ca

Work Experience

Associate Professor *Starting Fall 2025*
Midwestern State University, Wichita Falls, Tx
Geophysics, structural geology, and tectonics

Project Geologist & Geophysicist *September 2021 - Present*
Kleinfelder, Irving, Tx
- Log cores for shallow and deep foundations
- Acquire, process, and interpret electrical resistivity tomography and seismic refraction tomography data
- Prepare reports and presentations of geological and geophysical data
- Work as subject matter expert (SME) for geophysical projects
- Use ArcMap and gINT to prepare maps and logs

Post-Doctoral Student *February 2021 - May 2021*
Oklahoma State University, Stillwater, Ok
- Improved potential field inversion method for Moho imaging
- Mentored graduate students

Exploration Geologist *June 2020 - February 2021*
Map Exploration Inc., Tulsa, Ok
- Mapped the oil and gas producing formations of the Hugoton Embayment, southwestern Kansas
- Delineated oil and gas prospects with stratigraphic and structural traps
- Made regional maps and cross sections of the Ardmore and Arkoma basins

Exploration Geologist *November 2012 - October 2013*
Thani Maqsam Ltd., Addis Ababa, Ethiopia (Subsidiary of Anglo Gold Ashanti and Thani Dubai Mining)
- Interpreted satellite imageries and aeromagnetic data to discriminate gold fertile habitats
- Conducted detailed geological mapping of gold bearing veins
- Interpreted whole rock analysis results to study the spatial distribution of gold
- Prepared geologic maps using ArcMap

Work Project Portfolio

- Characterized subsurface of reservoirs using ERT and IP techniques
- Delineated faults and mapped bedrock of solar farms using aerogravity and aeromagnetic data
- Conducted seismic refraction tomography surveys to analyze rippability and provided recommendations
- Assessed geological and geophysical aspects of bedrock for underground pipe installation
- Analyzed petrophysical data to investigate how deep seismic imaging targeting hydrocarbons impacted geoengineering foundations
- Constructed isopach and structure maps of the southwestern Kansas Mississippian sub-crop to generate hydrocarbon prospects
- Interpreted and modeled aeromagnetic data for assessing metallic mineral resources
- Surveyed pedological and geological soils for preliminary pavement design
- Oversaw and conducted QA/QC on thermal resistivity results for multiple energy providers
- Reviewed and provided expertise on various geophysical reports delivered by subcontractors

Research Experience

Oklahoma State University, *Stillwater, OK* *January 2014 - December 2020*
- Characterized the lithospheric structure of Precambrian tectonic blocks in Africa
- Studied the initiation and evolution of the Broadly Rifted Zone in southern Ethiopia
- Studied the crustal and geo-morphotectonic evolution of the Mesozoic and Cenozoic rifts in Turkana Depression
- Processed and interpreted aeromagnetic data of Chilwa Alkaline Province, Southern Malawi
- Characterized the subsurface geology of the Arkoma Basin and evaluated its uplift history using PetroMod
- Seismic Interpretation of TeapotDom 3D data

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Teaching Experience

Adjunct Instructor — *January 2021 - May 2021*

Northern Oklahoma College, Stillwater, Ok

Instructed over 13 geology, oceanography, and astronomy labs

Oklahoma State University, Stillwater, OK — *January 2014 - December 2020*

Head graduate teaching associate for Physical Geology and Exploring Earth
Lab instructor for Historical Geology and Geomorphology
Guest instructor (1 lecture), OSU, Gravity and Magnetics

Software Skills

OasisMontaj |ArcGIS | ENVI | Petrel | SeisSpace | Kingdom | PetroMod | R | SAS | SPSS | PyGMI | MATLAB | GMTSAR
ISCE | Lithoflex | Grav3D | Adobe Illustrator | gINT | EarthImager 2D

Training

Ground Penetrating Radar	*August 2023*
Seismic Refraction & Seismic Refraction Tomography, AFA	*December 2022*
Resistivity Imaging Seminar, Advanced Geosciences, Inc.	*April 2022*
Colored Stones Essentials, Gemological Institute of America (GIA)	*September 2021*
InSAR Processing and Theory with GMTSAR	*July 2021*
The Generic Mapping Tools (GMT) for Geodesy	*July 2021*
Petrel Structural Modeling: Corner Point Gridding, NExT Schlumberger	*June 2021*
Mountains 101, University of Alberta	*June 2021*
Critical Evaluation of 3-D Geological Models, Center for Exploration Targeting	*May 2021*
Environmental Protection and Sustainability, IsraelX	*April 2021*
Basin-Hosted Base Metal Mineral System, Center for Exploration Targeting	*March 2021*
Petrel Geophysical Interpretation - RILS (Remote Instructor Led Series), NExT Schlumberger	*December 2020*
Remote Sensing techniques to study surface deformation, RWTH Aachen University	*June 2020*
Target mapping for diamond drilling programs at Anglo Gold Ashanti	*June 2013*

Awards

Kleinfelder Employee Awards Plan for outstanding performance (3 times winner)	*December 2022 - December 2023*
Gemological Institute of America Student Scholarship ($1950)	*December 2022*
Gemological Institute of America Student Scholarship ($1500)	*December 2021*
GeoPRISM TEI RIE (Travel Grant)	*February 2017, February 2019*
Summer School on computational methods for partial differential equations (PDEs) - Travel Grant	*August 2019*
5th Biennial Structural Geology and Tectonics Forum (Travel Grant)	*January 2018*
Graduate College Robberson Summer Fellowship ($4000)	*May 2017*
Society of Exploration Geophysics ExxonMobil SEP (Travel Grant)	*October 2016*
2016 Geophysics Tech Fest at OSU -- Second Place	*March 2016*
John Shelton Graduate Fellowship ($2500)	*2014, 2016*

Service

Co-chair of GSA South Central Session	*March 2023*
First Vice President of Dallas Geological Society	*July 2021 - Present*
President of Society of Exploration Geophysics (SEG) at OSU	*January 2017 - January 2018*
President of Ethiopian Student Association at OSU	*January 2016 - January 2017*

Selected Peer Reviewed Articles

1. **Emishaw, L.**, Katumwehe, A., Leseane, K., Demissie, Z., Mickus, K. & Abdelsalam, M. G. (2025) The legacy of East African Rift System in understanding continental rifts worldwide from gravity and magnetic studies. Journal of African Earth Sciences, 105589.

2. Mily, F., **Emishaw, L.**, Katumwehe, A., Mickus, K., & Abdelsalam, M. (2025). The Connection Between Okavango (Botswana) and Kafue (Zambia) Rift Zone from Satellite Gravity and Aeromagnetic Data: Implication for the Evolution of the Southwestern Branch of the East African Rift System. Pure and Applied Geophysics, 1-23.

3. **EMISHAW, L.**, & Abdelsalam, M. G. (2023). Satellite Gravity Data for Mapping Lithospheric Structure of Precambrian Tectonic Blocks in Africa: The Advantages and Limitations. *Journal of African Earth Sciences, 197* , 104775.

4 **EMISHAW, L.**, Mickus, K. & Abdelsalam, M. G. (2022). Spectral Analysis of Gravity Data Using Spectral Analysis with

5. **EMISHAW, L.**, & Abdelsalam, M. G. (2019). Development of late Jurassic–early Paleogene and Neogene-Quaternary rifts within the Turkana Depression, East Africa from Satellite Gravity Data. *Tectonics, 38(7)* , 2358-2377.

6. FLETCHER, A. W., ABDELSALAM, M. G., **EMISHAW, L**., ATEKWANA, E.A., L LAÓ DÁVILA, D. A., & Ismail, A. (2018). Lithospheric Controls on the Rifting of the Tanzanian Craton at the Eyasi Basin, Eastern Branch of the East African Rift System. Tectonics, 37(9), 2818-2832.

7. **EMISHAW, Luelseged**, LAÓ DÁVILA, Daniel A., ABDELSALAM, Mohamed, ATEKWANA, Estella, and Stephen S Gao. (2017) Evolution of the Broadly Rifted Zone in southern Ethiopia through gravitational collapse of dynamic topography. Tectonophysics 699 (2017): 213-226.