

# Mercy Achang: CV

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Department of Earth Science  
University of Delaware  
255 Academy St.  
Newark, DE 19716

(+1) 234 702 0008  
mercya@udel.edu

## Education

- Ph.D. 2018, Boone Pickens School of Geology, Oklahoma State University, Geology  
*Ph.D. Dissertation:* The influence of particle size, microfractures, and moisture content on the determination of permeability in crushed shale.  
Dissertation Adviser: Dr. Jack Pashin.
- M.Sc. 2008, The University of Yaoundé I, Cameroon, Geophysics.  
*M.Sc. Thesis:* Gravity data filtering using the vertical derivative at the Bongor region, Chad.  
Thesis Adviser: Dr. Tabod Charles.
- M.Sc. 2006, The Advanced Teachers Training College Yaoundé Cameroon, Science Education/Physics.  
*M.Ed Thesis:* Why many female students shy away from Physics in North West Region Cameroon.  
Thesis Adviser: Dr. Ndougsa Mbarga Theophile.
- B.Sc. 2002, The University of Dschang, Cameroon, Physics.
- B.Sc. 1998, The Higher Teachers Training College, Bambili, Cameroon, Science Education/Physics.

## Professional Licensure

1. Oct 2003-2006 Certificate in Teaching High School Physics, The Advanced Teachers' Training College Yaoundé, Cameroon
2. Oct 1995-1998 Certificate in Teaching Secondary School Physics, The Higher Teachers Training College, Bambili, Cameroon

## Professional Teaching Experience

### Visiting Assistant Professor

**2021-present:** Department of Earth Sciences at The University of Delaware

- Instructor; Geologic Hazards and their Human Impact (Geol105), Evolving Earth Systems (Geol110), Geologic Hazard Laboratory (Geol115), Earth Science (Geol113), and Sedimentology and Stratigraphy (Geol304)
- Prepare lessons, teach and grade exercises, quizzes, projects, and exams

- Redesign the course Geol105, Geol110 and Geol115 with the help of the designated designer for Earth Sciences
- Supervises seven TAs and assisted in setting the labs
- Organized and supervised field work for Geol304 (sedimentology and stratigraphy) in collaboration with the Delaware geological Survey

### **Postdoctoral Research Scholar**

**2019-2020:** School of Chemical Engineering at Oklahoma State University

- Main Instructor; Petroleum Rocks and Fluids (PETE 4303) Fall 2020
- Co-Instructor; Petroleum Rocks and Fluids (PETE 4303) Fall 2019
- Prepared lessons, taught and graded exercises, quizzes, and exams
- Coordinated and taught labs for PETE4303 to enhance experiential learning
- Taught students poster designing and project writing that led to the end-of-semester poster and project presentation in PETE 4304 enhancing communication and teams skills

### **Graduate Teaching Assistant (TA), Head and Mentor**

**2012-2018:** Boone Pickens School of Geology, Oklahoma State University

- Supervised 32 lab sections and 16 TAs as head TA
- Ensure proper setup of lab materials for each week's lab experiments
- Arranged the rocks in the labs for easy identification
- Coordinated with the main instructor of the introductory-level geology classes to run the labs
- Restructured the labs to include learning objectives for each lab exercise
- Planned, prepared, and taught three labs and graded quizzes and exams

### **Graduate Teaching Assistant (TA) Mentor in geology**

**2016-2017:** Boone Pickens School of Geology, Oklahoma State University

- Helped Mentees identify challenges in the classroom and we brainstorm for applicable solutions
- Organized group mentoring sessions where we discussed the teaching and learning styles of students
- Planned and scheduled professional development meetings between GTAs and the Institute for Teaching and Learning Excellence.
- Motivate the first-time TA by having them observe my class and intern observe their classes and provide feedback

### **Graduate Teaching Assistant**

**2012-2016:** Boone Pickens School of Geology, Oklahoma State University

- Instructor for two laboratory sections of Geology and Human Affairs
- Provide general support and one-to-one assistance to students during laboratory sessions
- Produce accurate and up-to-date records and reports
- Monitor the progress of students throughout the semester and schedule meetings with those facing difficulties
- Managed sixteen TAs and organized weekly meetings to assess and plan the week's activities
- Collaborated with other TAs and instructors to develop labs and quizzes
- Corresponded with students on Desire to Learn (D2L) and proctored exams
- Assembled TAs' complaints from Labs and together with faculties sought lasting solutions

- Adapted the labs to meet the needs of the students and the duration of the sessions
- Modified all the lab exercises and included learning objectives to facilitate learning

### **Part-Time Lecturer**

#### **2010-2012: National Advanced School of Engineering Yaoundé, Cameroon**

- Prepared and taught physics practicals to undergraduates (freshmen and sophomores)
- Invigilated undergraduate exams and practical exams
- Planned, administered, and Graded lab exams
- Participated in collecting inventory for the labs and assisted in purchasing equipment
- Graded the entrance Exams into the Advance School of Engineering Cameroon ( An Elite institution of engineering)
- Developed physics practical exercises and tested instruments before labs
- Simplified instructions to facilitate experimental setup, data collection, and analysis
- Evaluated introductory physics practical lessons and recorded grades
- Instilled confidence and creativity in the students by making the class a safe space to try and fail
- Translated content from English to French to facilitate the learning of students with exclusively French backgrounds.

### **High School Physics Teacher and Head of Department**

#### **2003-2012: Government Bilingual Practicing High School Yaoundé, Cameroon**

- Head of the Physics Department, overseeing eight other physics teachers and pedagogy
- Organized professional development seminars for new and old teacher
- Supervised and trained 10 student teachers during their practicum (6 months traineeship)
- Chaired department meetings and reported to the principal
- Mediated between student-teacher and the inspectorate of education to assign tasks to student teachers
- Supervised Advanced Level General Education Examination for physics in Yaoundé Center.
- Facilitated the process of building up a new curriculum for middle school physics teaching.
- Planned prepared and taught physics lessons to 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grade students
- Mentored and coached high school students about careers in the sciences and engineering and how to overcome academic failure and social challenges
- Made local equipment and use different electronic circuits boards, measuring instruments, motion circuits, etc., to explain different concepts and theories of physics
- Coordinated student experiments and asked questions to help develop their views
- Transformed the department from the last three in the school to the second position in terms of student success in National examinations and STEM career choices.
- Form mistress for the 11<sup>th</sup> and 12<sup>th</sup> grade students

### **Physics and Chemistry Teacher and Head of Department**

#### **1998-2003: Comprehensive High School Bambui (CHS) and Government Bilingual High School (GBHS) Mbatu, Cameroon**

- Planned and taught Physics and Chemistry for 6 -12 grade Students

- Organized mock summative evaluations for 10<sup>th</sup> and 12<sup>th</sup> grade students preparing for national examinations in high school and the university
- Planned, prepared, and taught physics and chemistry to 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grade students
- Served as a form mistress for 6 and 7 graders at CHS Bambui and GBHS Mbatu
- Served as a boarding house mistress and teacher at CHS Bambui
- Facilitated the process of building up a new curriculum for middle school chemistry teaching.
- Supervised and monitored students' laboratory work and graded
- Prepared supplementary lessons for gifted students and slow learners
- Planned, prepared, and taught physics and chemistry in the 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, and 12<sup>th</sup> grades.

### **Course Description of classes taught**

#### **The University of Delaware: Department of Earth Sciences**

**2021-Present:** Instructor on S-contract summer 2022 for Geol 105 (Geologic Hazards and their Human Impact), Geol113 (Earth Science), and supervised Geol115(Geologic Hazard Laboratory)

- Main Instructor Fall and Spring 2022 for Geol110 (Evolving Earth Systems or historical geology), Geol 105 (Geologic Hazards and their Human Impact), Geol 115 (Geologic Hazard Laboratory), and Geol304 (Sedimentology and Stratigraphy).

#### **GEOL 105 - Geologic Hazards and their Human Impact (3 credit hours)**

- Geological processes and events that adversely affect humans and civilization. Methods for predicting and dealing with geological hazards. It May be taken with a 1 credit lab, GEOL115

#### **GEOL 115 - Geologic Hazards Laboratory (1 credit hour)**

- Laboratory investigation of environmental geological processes and their impact on society: earthquakes, tsunamis, volcanoes, coastal hazards, rivers and streams, groundwater. Identification of earth materials and study of earth processes using topographical, geological, and tectonic maps. COREQ: GEOL105

#### **GEOL 110 - GEOL110 Earth's Evolving Systems (1 credit hour)**

- History of the earth and its biota. Origins, evolution, and mass extinctions of major groups of organisms as demonstrated by the earth's fossil record. Laboratory covers the identification of basic fossil groups and exercises in interpreting Earth's history

#### **GEOL 304 - Geologic Hazards Laboratory (4 credit hours)**

- Study of sediment focusing on how it is transported and deposited including fluid flow and sediment transport, sedimentary structures, and textures. Environments of deposition with modern/ancient analogs. Description and correlation of stratigraphic units including facies analysis, basin analysis, and concepts of time and methods of absolute dating.

#### **GEOL 304 - GEOL113 Earth Science (4 credit hours)**

- Earth materials, structure, and the geologic phenomena that produce them. Physical and temporal aspects of earth's history. Laboratory examination of rocks, minerals, and fossils. Experiments in geological processes and interpretation of geologic maps.

### **Oklahoma State University**

**2019-2020: Chemical Engineering Department and Petroleum Engineering Minor,**

#### **PETE 4303 - Petroleum Rocks, and Fluids**

- Topics include rock properties, flow through porous media, principles of organic chemistry; properties of hydrocarbon liquids and gases; multicomponent mixtures; phase behavior; and gas-liquid equilibrium concepts. Previously offered as ENGR 4303.

#### **GEOL 1114 - Physical Geology**

- Composition and structure of the earth and the modification of its surface by internal and external processes. Mineral resources, sources of energy, and environmental aspects of geology. Recommended introductory course for science majors. Field trip required. 4 credit hours, 2 lectures, and 2 labs
- Prerequisite(s): MATH 1513 or higher with a grade of "C" or better; or an acceptable math placement score (see <http://placement.okstate.edu>)

#### **GEOL 1014 - Geology and Human Affairs**

The influence of geology and related earth sciences on the human environment. Energy and material resources, beneficial and hazardous natural processes, and the planetary and biological evolution of the earth. Lab investigations are environmentally oriented. Lab fees are required for the online section. 4 credit hours, 3 lectures, and 2 labs.

#### **Substitute Teaching Assistant: GEOL 6303 Electrical and Electromagnetic Methods**

Prerequisite: GEOL 4103. Principles of the different geoelectrical methods, including electrical resistivity, induced polarization, self-potential, electromagnetic, and ground-penetrating radar will be emphasized. Geophysical instrumentation, laboratory measurements of physical properties, field procedures, and basic interpretation and near-surface geophysical applications. Recent advances in geoelectrical methods and case studies by reviewing the current literature. Field trip required Lab, Lecture 3 hrs.

### **Advanced School of Engineering, Yaoundé, Cameroon**

**2010-2012: Physics Practicals for Freshmen and Sophomores**

#### **UE PHY 116: Physics Practical for Level I**

PHY 116 is a first-semester physics practical course made up of 10 experimental stations that emphasize the understanding of topics such as electricity, magnetism, electromagnetism, light, and optics. Each station is made up of different equipment and the student is expected to participate in all stations before the end of the semester. These stations are: Oscilloscopes I & II, Thin Lenses, Simple Pendulum, Torsional Pendulum, Measurement of Alternating current, Resonance Studies, Construction of a Voltmeter and an Ammeter, Wheatstone bridge, and Helmholtz Coils.

## **UE PHY 215: Physics Practical for Level II**

PHY 215 is a second-semester physics practical course for level II students. It is made up of 5 experimental stations that emphasize the understanding of electronics. Each station is made up of equipment tailored to test different aspects of electronics. The stations are: Filters and the Notion of Band Pass, Quadrupoles, Smoothing, Operational Amplifiers, and Bipolar Transistors

### **Government Bilingual Practicing High School, Yaounde Comprehensive High School Bambui and Government Bilingual High School Mbatu (Cameroon)**

Secondary and High School Curriculum (school programs) from the Ministry of Secondary Education (<https://www.minesec.gov.cm/>)

### **Continuing Education in Teaching**

- STEP (Small Teaching Enhancement Program) semester-long (on-going Fall 2023)
- Course Design Institute (CDI) at the University of Delaware on June 6-9, (2023).
- One-month workshop on Innovative Teaching Strategies: organized by KCTO at the University of Delaware Summer (2022)
- Earth Educator Rendezvous: Organized by NAGT at the University of Minnesota in July (2022)
- Summer Institute of Teaching Workshops: Organize by KCTO at the University of Delaware June (2022)
- Faculty Reads, Spring 2019: How Humans Learn: The Science and Stories Behind Effective College Teaching by Joshua R. Eyer
- Broadening participation and diversity in visualization (2019)
- Inclusive Teaching Practices, Institute for Teaching and Learning Excellence (ITLE), (2019)
- Faculty Reads Fall 2018: “Teaching College: The Ultimate Guide to Lecturing presenting and Engaging Students”.
- Teaching and Researching in a Liberal Arts College two days symposium (2018)
- Teaching with Technology Symposium (2018)
- Preparing Online Instructors (ITLE) (Fall 2017)
- ITLE Teaching with Technology Symposium (2017)
- Graduate Teaching Assistant Course Design Cohort (Spring 2016)
- Graduate Teaching Assistants Conference on Teaching (2016)
- Preparing for an Academic Career in the Geosciences, University of Pittsburgh (2014)
- National Association of Geoscience Teachers workshop (2014)

### **Mentoring**

As a Visiting Assistant Professor, I have been talking to undergraduates in my introductory-level geology classes due to my current workload and adjusting to the new environment, we do not yet have a mentoring schedule. I also do recognize the need to collaborate and recruit undergraduate students from other institutions and organizations serving women, minorities, and other under-represented groups as well and have that as a plan by the end of my second year as a visiting assistant professor. In the past, I have mentored four undergraduates at Oklahoma State University to complete the digitization of aeromagnetic maps from Cameroon using ArcGIS and six graduates three for their research proposals, three for their MSc completion all students at Oklahoma State University, and mentored a Ph.D. student in Dschang University, Cameroon, and two PhDs at Oklahoma State University. I have also mentored

more than 20 females and hundreds of males as a high school physics teacher and they have now taken on Careers in the STEM

## **Research Experience and Related Job Experience**

### **Postdoctoral Research Scholar**

**2019-2020:** School of Chemical Engineering at Oklahoma State University

- Assessment of seal thickness and petrography in mud logs and rocks
- Petrophysical analysis of cement integrity in CO<sub>2</sub> sequestration fields
- CT scan experiments to determine cement integrity
- Data preparation, analysis, and presentation at conferences
- Mentoring Ph.D. and master students to complete abstracts for conferences
- Raman microscopy data collection and analysis to determine cement chemistry

### **Research Experience**

**2018-2019:** Postdoctoral Research Scholar/ Temporary para-professor, Boone Pickens School of Geology, Oklahoma State University

- Site-specific petrophysical analysis of the seal rock for CO<sub>2</sub> sequestration at Kemper County.
- Assessment of seal thickness and petrography and mud logs
- Mentoring graduate students to complete abstracts for conferences
- Data management, analysis, and manuscript preparation

### **Oil and Gas Experience**

**2018-2019:** Well Site Geologist / Columbine logging

- Assist in well analysis
- Collect representative samples
- Perform detailed sample description
- Develop a percentage and interpretive logs
- Prepare lithology description and hydrocarbon show reports
- Picking tops of formations and distinguishing members
- Data analysis of gas curves, and formation changes
- Use appropriate log modified to the client's request, including sample pictures
- Discuss variation in lithology to enhance well placement
- Trained three workers on rock identification using core cuttings
- Prepare Mudlogs using Tlog software for Clients

**2012-2018:** Ph.D. Candidate; Boone Pickens School of Geology, Oklahoma State University

- Design and run moisture experiments on crushed shale to compensate for moisture loss during core withdrawal from the subsurface
- Conducted crushed shale experiments with shale matrix permeameter to estimate crushed rock matrix permeability
- Core description of lithology, identification of sedimentary features to interpret sequence stratigraphy and depositional environments

- Analyze SEM images of rock fabric and porosity characterization
- Conducted XRD experiments for mineralogical determination and mineral weight percent quantification with GSAS
- Compare porosity and pore size determination of plugs and crushed shale samples using Nuclear Magnetic Resonance (NMR) to assess the effects of crushing shale on pore structure
- Surface area estimation (BET) and pore size distribution and pore shape (BJH) by sorption analysis to account for the diffusion process in shale
- Performed induced polarization and complex resistivity measurements on sands coated with different minerals in the presence of microbes to detect geophysical signatures resulting from the production of biofilms for possibilities in bioremediation and the creation of biofilm as seals
- Evaluated gravity and magnetic data to identify basement structures, mineralized features, and emplacement of ring complexes in the Singo granite in Uganda

**2012-2018:** Laboratory Coordinator Experience, Oklahoma State University

- Supervised 32 lab sections and 16 TAs as head TA
- Managed the inventory for the petrophysics labs and ordering of materials
- Ensure proper setup of lab materials for each week's lab experiments
- Arranged the rocks in the labs for easy identification
- Managed maintenance and troubleshooting of the shale matrix permeameter
- Contact person during the supervision of the lab by environmental and safety personnel

**Publications**

1. Carpenter K.C., Dje L.B., **Achang M.**, Radonjic, M. (2023) Comparative Laboratory Study of the Geochemical Reactivity of the Marcellus Shale: Rock–Fluid Interaction of Drilled Core Samples vs. Outcrop Specimens
2. **Achang, M.**, & Radonjic, M. (2021) Adding olivine microparticles to Portland cement based wellbore cement slurry as a sacrificial material: A quest for the solution in mitigating corrosion of wellbore cement
3. Yulun Wang, Guofan Luo, **Achang, M.**, Julie Cains, Conn Wethington, Allan Katende, G Michael Grammer, Jim Puckette, Jack Pashin, Marc Castagna, Han Chan, George E King, Mileva Radonjic.(2021) Multiscale Characterization of the Caney Shale—An Emerging Play in Oklahoma
4. **Achang, M.**, Yanyao, L., & Radonjic, M. (2020). A Review of Past, Present, and Future Technologies for Permanent Plugging and Abandonment of Wellbores and Restoration of Subsurface Geologic Barriers. Environmental Engineering Science
5. **Achang, M.**, Pashin, J.C., Atekwana, E.A. (2019). The Influence of Moisture on the Permeability of Crushed Shale Samples. Accepted for publication in Petroleum Science by Springer.
6. **Achang, M.**, Pashin, J. C., & Cui, X. (2017). The influence of particle size, microfractures, and pressure decay on measuring the permeability of crushed shale samples. International Journal of Coal Geology, 183, 174-187
7. Abdelsalam, M. G., Katumwehe, A. B., Atekwana, E. A., Le Pera, A. K., & **Achang, M.** (2016). The Paleoproterozoic Singo granite in south-central Uganda revealed as a nested igneous ring complex using geophysical data. Journal of African Earth Sciences, 116, 198-212



### **Publications submitted and in preparation**

1. **Achang, M.**, Jun Fu, Esther K. James, Eliot A. Atekwana Estella A. Atekwana, Mileva Radonjic, Atanga M. Magdalene (2022). Pathways for Enhancing the learning of Emerging Learners
2. **Achang, M.**, Pashin J. C., Parameswar H. (2019). A comparative study of pore size distribution in crushed and plugged shale samples using Nuclear Magnetic Resonance (Collecting data to address reviewers' comments)
3. Seal analysis of geologic formations for carbon sequestration in Kemper County, Mississippi (In preparation)

### **Conference papers**

1. **Achang, M.**, Jun Fu, Eliot A. Atekwana Estella A. Atekwana, Mileva Radonjic, Atanga M. Magdalene (2022). Thriving Pathways and Elements for Emerging Learners and Researchers. NAGT Earth Educators' Rendezvous 2022
2. Mileva Radonjic, Guofan Luo, Yulun Wang, **Achang, M.**, Julie Cains, Allan, Katende, Jim Puckette, Mike Grammer, and George E. King (2020) Integrated Microstructural Characterisation of Caney Shale, OK (URTEC conference paper presentation July 20-22, 2020).
3. Massion, C., **Achang, M.** (2020) Daniel Bour, Paul Beasant, and Mileva Radonjic. Enhanced wellbore cement: a game changer for cement performance in geothermal wellbore construction GRC Annual

### **Abstract Presentations at National and International Meetings**

1. **Achang, M.**, Lauren Kelly. Mind maps as an integration and decision making tool in introductory level Geohazards course (Earth Educators' Rendezvous 2023)
2. **Achang, M.**, Jun Fu, Eliot A. Atekwana Estella A. Atekwana, Mileva Radonjic, Atanga M. Magdalene (2022). Thriving Pathways and Elements for Emerging Learners and Researchers. NAGT Earth Educators' Rendezvous 2022
3. Cody M., Sai V. K. Vissa, Yunxing Lu, Dustin Crandall, **Achang, M.**, Andrew Bunger, Mileva Radonjic (2022). Geomimicry Enhanced Wellbore Cements for Mitigation of Leaky Wellbores. SPE Cement Workshop
4. **Achang, M.** Massion, C. Ray, C. Beasant P., Bour D., Radonjic, M. (2020). Graphene Enhanced Wellbore Cement. **GRC/SPE**, March 30 – April 1, 2020, moved to September 2020.
5. **Achang, M.**, Pashin C.J., Radonjic M. (2020) Sealing Capacity Analysis of the Tuscaloosa Marine Shale at Kemper County Energy Facility in Mississippi for CO<sub>2</sub> Sequestration (AAPG).
6. **Achang, M.**, Pashin, J.C. (2019). Sealing capacity analysis of the Tuscaloosa Marine Shale at the integrated gasification combined cycle (IGCC) power plant in Kemper County Mississippi for CO<sub>2</sub> sequestration. National Association of Black Geoscientists (NABG).
7. **Achang, M.**, Pashin, J.C. (2019). Visualization of capillary pressure and column height for CO<sub>2</sub> sequestration Gordon Research Conferences (GRC).
8. **Achang, M.**, Pashin, J.C., Atekwana, E.A. (2019). Moisture equilibration and Permeability of Crushed Shale Samples. American Association of Petroleum Geologists Annual Convention and Exhibition (AAPG).

9. **Achang, M.**, Pashin, J.C., Atekwana, E.A. (2019). How Particle Size, Microfractures, and Moisture Content Influence the Permeability of Crushed Shale Samples Moisture equilibration and Permeability of Crushed Shale Samples. Geological Society of America South Central Meeting (March 24-27).
10. Pashin, J.C., **Achang, M.**, Chandra, A. Jingyao M., Urban, S., Wethington, C. Riestenberg, D., Koperna, G., Redden, M., Hills, D., Esposito, R.(2018). The Paluxy Formation in the Eastern-Central Gulf of Mexico Basin: Geology of a Giant Anthropogenic CO<sub>2</sub> Sink.
11. Pashin, J. C., **Achang, M.**, Chandra, A., Folaranmi, A., T., Martin, S., Jingyao, M., Wethington, C., Urban, S., Riestenberg, D., Koperna, G., Redden-McIntyre, M. R., Hills, D. H., and Esposito, R. A. (2017). The Paluxy Formation in the east-central Gulf of Mexico Basin: Geology of an ultra-giant anthropogenic CO<sub>2</sub> sink: American Association of Petroleum Geologists Annual Convention and Exposition Program, in press.
12. **Achang, M.**, Pashin, J. C., and Parameswar, H. (2017). A comparative study on pore size distribution in crushed and plug shale samples using Nuclear Magnetic Resonance. The University of Tulsa-petroleum engineering department (**Invited**).
13. **Achang, M.**, Pashin, J. C., and Parameswar, H. (2017). Comparison of Pore Size Distribution in Crushed and Core Plug Shale Samples using Nuclear Magnetic Resonance Response (NABG) Atlanta, (2017).
14. **Achang, M.**, and Pashin, J. C. (2017). Variation in moisture content and Particle Size on the Determination of Permeability in Crushed Shale Samples. The implication for Hydrocarbon Movement in Tight Rock Reservoirs. (AAPG) Houston, Texas, USA.
15. **Achang, M.**, and Pashin, J. C. (2016). Variation of Particle Size on the Determination of Permeability in Crushed shale Leicester UK.
16. Atekwana, E.A., LePera A., Abdelsalam, M., Katumwehe, A., and **Achang, M.** (2014), The Precambrian Singo Igneous Complex (SIC), Uganda Revealed As a Mineralized Nested Ring Complex Using High-Resolution Airborne Radiometric and Magnetic Data, Abstract NS42A-01 presented at 2014 Fall Meeting, AGU, San Francisco, Calif., 14-19 Dec. INVITED.
17. **Achang, M.**, Atekwana E.A., Abdelsalam, M.G, Katumwehe A. (2013). The Singo granite, mineral occurrences and ring complexes Uganda, Geological Society of America Abstracts with Programs, 45 (7) 536.
18. Brown, I., Atekwana, E., Sarkisova, S., and **Achang, M.** (2013). The Complex Conductivity Signature of Geobacter Species in Geological Media Abstract NS21B-1568 presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec.
19. Jun, F., **Achang, M.** (2019). Using Motivation and Bloom's taxonomy to facilitate student learning. Oklahoma State University Lasso center.

#### **Awards, Scholarships, and Travel Grants**

<b>Years</b>	<b>\$ Amount</b>	<b>Funding Entities</b>
2019	\$200	Second place oral presentation at NABG
2019	\$1100	Travel and lodging National Association of Black Geoscientists (NABG and NSF)
2019	\$1360	Travel and lodging Gordon Research Conferences (GRC)
2016-2018		Carbon Safe, Department of energy funds
2018	~\$1500	Research and Teaching in a liberal arts College by Williams College, Massachusetts

2018	\$1750	Grants-in-Aid, American Association of Petroleum Geologists
2017	\$1500	Grants-in-Aid, American Association of Petroleum Geologists
2017	\$320	National Association of Black Geoscientists NSF travel grant
2016 – 2017	\$50	Institute of Teaching and Learning Excellence (ITLE) Graduate Teaching Assistant mentor OSU
2016	\$1500	US Science Support Program Travel Grant to the UK
2016	\$3000	Society of Petrophysicists and Well Log Analysts (SPWLA) Scholarship
2016	\$5000	Davis, Kate and Takken fellowship awards, Oklahoma Geological Foundation
2015	\$550	National Association of Black Geoscientists NSF travel grant
2015	\$400	National Association of Black Geoscientists Scholarship
2016	\$5000	Devon Energy Grad Fellow Geology scholarship
2015	1500	Graduate Student Advisory Board scholarship
2015	\$395	Tulsa Geological Survey Field trip grant
2012 – 2014	\$9000	Alumni Graduate Fellowship & Boone Pickens School of Geology
2014 – 2015	\$10000	BP America scholarship, Geology, and Petroleum
2014	\$50	Preparing faculty for the future in geoscience (NSF travel grant)
2013	\$2000	Skinner scholarship
2013	\$200	National Association of Black Geoscientists travel grant
2012	\$3000	Boone Pickens School of Geology Graduate Fellowship
2009	\$100	Research Scholarship, Yaoundé University

### **Training and Workshops**

- Tlog software training for rock sample description (2019)
- Hydrogen Sulfide (H<sub>2</sub>S), heat stress, fall protection, pathogen, information security, defensive driving, and fall protection safety training (2019)
- PEC Safety - Basic Orientation (2018)
- Mapping 101 using ArcGIS (2018)
- Basin analysis and sequence stratigraphy, Exxon short course (2017)
- Petrophysical Log evaluation and Advanced Well log analysis OSU (2014 - 2015)
- Preparing faculty for the future in geoscience careers (2014)
- Gravity and magnetics & electrical & electromagnetic methods, OSU (2013 - 2014)
- Structural geology, sedimentology & stratigraphy (2012 – 2013)
- Petroleum geology, Petroleum geology & and mineralogy (2013)

### **Reviewer**

- The American Association of Petroleum Geologists
- Journal of African Earth Sciences
- Energies — Open Access Journal; One Manuscript reviewed in March 2020

### **Other Certifications and Skills**

- PEC Safety Card (2018)
- Certificate of completion in Online Teaching
- 3D Seismic and Reservoir Characterization
- Geologic and tectonic analysis of basement structures
- Simulate and construct 1D models for reservoir thermal history

- Leadership, interpersonal, intrapersonal, motivational, and organizational skills.
- Kingdom suite, Petra, Adobe Illustrator, Photoshop, Google Earth, Oasis Montaj Geosoft, Petromod, Excel, PowerPoint, Word, Basic
- Introduction to Matlab

### **Professional Organization Memberships**

- National Association of Geoscience Teachers (NAGT)
- American Association of Petroleum Geologists (AAPG)
- Society of Exploration Geophysics (SEG)
- Geological Society of America (GSA)
- Society of Petrophysical Well Log Analysts (SPWLA)
- National Association of Black Geoscientists (NABG)

### **Community Involvement and Service**

- Undergraduate Studies Committee for 2022 - 2023
- Participated as a principal investigator in writing the Lego grant for the Build a world of play challenge in May 2022 with the NGO (Rural Women center for Education and Development, Cameroon (RuWCED). (Never won the grant)
- Cleaned and organized the Rocks and Mineral storage room in Penny Hall 06
- Prepared and presented CEAT design project for July 28 to August 4, 2020, to recent high school graduates
- Coaching 3 graduate students
- Graded 20 student projects for Oklahoma State Science and Engineering Fair (OSSEF) in March 2020
- Presentation to help student tutors “**using motivation and bloom’s taxonomy to facilitate student learning**” 10/06/2019
- Participated in writing the carbon safe grant (DE-FOA 0001999) even though it was not funded
- Drove students to the AADE conference in Tulsa, 02/26/2020
- Volunteered setting up posters for the AAPG, ACE Sans Antonio (2019)
- Volunteered setting up posters for the AAPG/SEG TechFest, Oklahoma State University, Stillwater (2018)
- Volunteer at AAPG Annual Convention and Exhibition: Houston, TX, USA (2017)
- Volunteer at AAPG Annual Convention and Exhibition: Calgary, AB, Canada (2016)
- Volunteer GSA South-Central Section Meeting: OSU, Stillwater, OK, USA (2015)
- **Founding member**/ Department head of women's science education. Rural women center for education and development, Ndop, Bamenda, Cameroon. (<https://www.facebook.com/RuWCED/?fref=ts>)
- Mentor and Judge in the interschool education game competition “the brain box” aired weekly on the **Cameroon National Radio and Television** (national TV show) (2012)
- Founder of Conqueror in Yeshua Bilingual Education Complex in Bibong Bidoum Yaounde Cameroon (<https://www.facebook.com/cybec2012>)

### **Languages**

- English; native speaker
- French; Advanced in spoken and intermediate in writing
- Pidgin and Awing languages and dialects fluent