

UZOMA JOHNPAUL AJUGWE

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EDUCATION

The University of Texas at Austin (UT) | Austin, Texas

Expected May 2029

Doctor of Philosophy, Petroleum Engineering

GPA: 3.7

Relevant Courses: *Subsurface Energy Storage, Petrophysics, Transport Phenomena, Energy Finance*

Supervisors: *Dr. David DiCarlo; Dr. Hailun Ni*

Research Focus: *Sand tank experimentation and Numerical Simulations of Geothermal Systems*

University of South Florida (USF) | Austin, Texas

August 2025

Master of Science, Environmental Engineering

Thesis Advisor: Dr. Jeffrey Cunningham

Thesis: *Quantifying Wellbore Effects During CO₂ Sequestration in a Saline Aquifer*

Federal University of Technology Owerri (FUTO) | Owerri, Nigeria

Jan 2020

Bachelor of Engineering, Petroleum Engineering

Thesis: *Development of an Environmentally Friendly Oil-Based Mud*

INDUSTRY EXPERIENCE

McKim and Creed

Clearwater, FL

Engineering Intern

Jun 2024 – Aug 2024

- Supported municipal utility operations through field inspections, data validation and technical documentation
- Conducted on site assessments to verify infrastructure materials and system conditions.
- Refining GIS based asset Inventories, reducing uncertainty by 50%.

Nigerian Federal Ministry of Petroleum Resources | Engineer

Jan 2022 – May 2023

- Inspected rigs in host communities as well as oversight on various national subsidiaries like NNPC, NPDC, NLNG.
- Researched and reviewed the Nigeria's Petroleum Industry Act, which was eventually passed by congress
- Assisted in technical reporting and documentation of field observations and operational data, ensuring accuracy of records relevant to reserves and asset evaluation.

Saipem Oil Contracting Nigeria Limited | Engineer

Oct 2020 – Dec 2021

- Assisted in field operations, supporting offshore energy projects and surface facilities
- Performed reservoir characterization using porosity and permeability clustering, optimizing flow predictions
- Collaborated with engineers to support pipeline and infrastructure projects, aligning field operations with design requirements
- Ensured full compliance with HSE regulations, including offshore safety protocols.

ACADEMIC EXPERIENCE

University of Texas at Austin Graduate Research Assistant

**Gulf Coast Carbon Center, Bureau of Economic Geology
May 2026 – Present**

- Design of sand tanks, porous media configuration, image acquisition and processing.
- Conducted Intermediate Scale Testing experiments to better understand fluid flow and heat transfer in geothermal systems: the first research to visualize temperature as a function of space in these systems.
- Numerical modeling and simulation of fluid and heat flow, fracture propagation, and history matching in geothermal systems.

USF and UT | Graduate Teaching Assistant

Fall 2025, Spring 2025 and 2026

- Courses include Reservoir Engineering, Facilities Engineering, Mechanics and Engineering Communication
- Proctored exams; Organized lectures and TA office hours to ensure that no student was left behind

University of South Florida | Graduate Research Assistant

May 2023 –May 2025

- Accessed the feasibility of a proposed CO₂ sequestration project for Tampa Electric Company (TECO), that led to an approved federal grant to the tune of over \$200 million
- Visualized and predicted underground chemical reactions occur during injection and post-injection because of CO₂ interaction with the formation, leading to dissolution or precipitation of various minerals.
- Developed various numerical models of geological formations into which electric utility companies can inject produced CO₂. The models account for various properties like permeability and porosity, hydrostatic pressure, temperature, salinity, pH, etc.
- Supported integrated subsurface analysis by linking geological properties with reservoir simulation outputs to inform development and optimization decisions.

LEADERSHIP, AWARDS, AND ACTIVITIES

John and Kelli Weinzierl Endowed Presidential Fellowship in Petroleum and Geosystems Engineering **2026**

American Water Works Association, USF Chapter | Treasurer **Nov 2023 – Jan 2025**

SPE FUTO Chapter | Captain, Petro Bowl Team **2018**

Florida High Tech Corridor Award **2024**

Nigerian Government Scholarship Award for undergraduate indigenes **2014-2019**

Society of Petroleum Engineers (SPE): *Member*

American Chemical Society (ACS): *Member*

Institute for Sustainable Infrastructure: *Envision Sustainability Professional (ENV SP)*

American Geophysical Union: *Member*

SKILLS

Proficient: TOUGHREACT, Python, MATLAB, ArcGIS, Advanced Microsoft Excel, CMG (GEMS and STARS), Enverse, T-navigator, subsurface modeling, underground hydrogen storage, PhDWin, TOUGH2