Chibueze N. Oguejiofor

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Education

- **University of Notre Dame** — Indiana, United States
  Doctorate (PhD.) - Civil & Environmental Engineering and Earth Sciences. — *2020 - Present*
  - ***Thesis**: Rapid Intensification of Tropical Cyclones - Modelling the influence of multiscale - boundary layer dynamics.*
  - ***Advisor**: Prof. David H. Richter.*
- **International Center for Theoretical Physics (ICTP)** — Trieste, Italy
  Postgraduate (Pre-PhD.) in Earth Systems Physics. — *2019 - 2020*
- **African Institute for Mathematical Sciences** — Kigali, Rwanda
  Masters (MSc.) in Mathematical Sciences — *2018 - 2019*
- **University of Lagos** — Lagos, Nigeria
  Bachelor's (BSc.) in Geophysics; GPA: 4.74/5.0; Top 1% — *2012 - 2017*

Skills Summary

- **Proficient:** Python, FORTRAN, Shell Scripting, MATLAB, SQL, R.
- **Experienced:** Numpy/Scipy stack, Pangeo, Tensorflow/Keras, xarray, Matplotlib, CDO, NCL/NCO, GRADS, Ferret.
- **Familiar:** High performance computing (MPI), Cloud Computing (AWS), Git, Satellite Intelligence.
- **Climate Models:** Weather research and forecast (WRF), Cloud model (CM1), HYSPLIT.

Research Focus

Hurricane modeling & air-sea interaction, Large Eddy Simulation (LES), Numerical weather prediction (NWP), Satellite data analysis, ARGO/ALAMO float data analysis, Machine Learning, Geostatistics and spatio-temporal modelling.

Professional Experience

- **National Center for Atmospheric Research (NCAR)** — Boulder, Colorado
  Graduate Visiting Scientist, ASP (Host: Dr. George Bryan, MMM lab.) — *Aug 2022 - Jan 2023*
  - Coherent turbulent boundary layer structures in tropical cyclone (TC) eye-eyewall interface.
- **Indicina Inc.** — Remote
  Data Engineer (Part-time, Contractual) — *Sept 2018 - Sept 2019*
  - Building and optimizing machine learning models for large fintech dataset.
- **KPMG Inc.** — Lagos, Nigeria
  Datascience Intern — *Feb 2018 - Aug 2018*
  - Built and deployed a machine learning churn model as REST API for default forecast.
- **Carbon Inc.** — Lagos, Nigeria
  Datascience Intern — *Nov 2017 - Jan 2018*
  - Adapted machine learning models on AWS services.

Grants and Fellowships

- NCAR Fellowship ($15,750) - Advanced Study Program (ASP) graduate visitor. — *2022*
- American Meteorological Society (AMS) air-sea interaction committee. — *2022 - 2024*
- UNESCO/IAEA Study Grant - International Centre for Theoretical Physics. — *2019*
- AAPG - L. Austin Weeks foundation scholarship grant. — *2017*
- MTN Foundation Scholarship for outstanding academic performance. — *2012 - 2017*

Peer-reviewed Journal Publications

- **Oguejiofor, C.*, Wainwright, C., Rudzin, J., Richter, D., 2022:** Onset of Tropical Cyclone Rapid Intensification: Evaluating the response to Length Scales of Sea Surface Temperature Anomalies, *J. Atmos. Sci.,* (*Under review*)

Theses

- **Chibueze N. Oguejiofor* and Graziano Guiliani, 2020** Local and Non-Local planetary boundary layer (PBL) schemes in WRF model - Impact on the Intensification of Tropical cyclone Idai (preprint)
- **Chibueze N. Oguejiofor* and Babatunde J. Abiodun, 2019** Simulating the influence of sea-surface-temperature (SST) on tropical cyclones over South-West Indian ocean, using the UEMS-WRF regional climate model (preprint - arXiv)

Conference Presentations

- **Chibueze, N. Oguejiofor*, D. Richter, C. Wainwright and J. Rudzin, 2023,:** Tropical Cyclone Rapid Intensification: Evaluating the response to Length Scales of Sea Surface Temperature Anomalies. **American Meteorological Society's (AMS) 23rd Conference on Air-Sea Interaction - The 103rd AMS Annual Meeting**. Denver, Colorado.
- **Chibueze, N. Oguejiofor*, D. Richter, C. Wainwright and J. Rudzin, 2022,:** Tropical Cyclone Rapid Intensification: Influence of multiscale anomalies in Sea Surface Temperature (SST). **Front Range Tropical Cyclone Workshop**. Fort-Collins, Colorado.
- **Chibueze, N. Oguejiofor*, D. Richter, and C. Wainwright, 2022,:** Investigating the sensitivity of hurricane intensification to length scales of sea surface temperature (SST) heterogeneities. **35th Conference on Hurricanes and Tropical Meteorology (AMS)**. New Orleans, Louisiana.
- **Chibueze, N. Oguejiofor*, D. Richter, and C. Wainwright, 2022:** Investigating the dependence of hurricane intensity on varying SST patterns using idealized model simulations. **Ocean Sciences Meeting (OSM)**. Held virtually.
- **Chibueze, N. Oguejiofor*, D. Richter, and C. Wainwright, 2021:** Investigating the dependence of hurricane intensity on varying SST patterns using idealized model simulations. **American Geophysical Union (AGU)**, Fall meeting. New Orleans, Louisiana.
- **Chibueze, N. Oguejiofor*, D. Richter, and C. Wainwright, 2021** Investigating the dependence of hurricane intensity on varying SST patterns using idealized model simulations. **Midwest Student Conference on Atmospheric Research (MSCAR)**. Held virtually.

Teaching

- **CE 30125: Statics (Prof. David. H. Richter)** *Fall 2022*
  - Graded homework assignments for approximately 70 students per semester.
- **CE 30125: Computational Methods (Prof. David. H. Richter)** *Fall 2020; Fall 2021*
  - Graded homework assignments for approximately 70 students per semester.
- **CE 40450: Hydraulics (Prof. Andew Kennedy)** *Spring 2020; Spring 2021*
  - Graded homework assignments for approximately 60 students per semester.

Professional Organizations

- American Meteorological Society (AMS): Air- sea interaction committee, student member.
- American Geophysical Union (AGU): Student member.