Chibueze N. Oguejiofor, Ph.D (In View).

oguejiofor.n.chibueze@gmail.com linkedin.com/chibueze-oguejiofor
https://chibueze-oguejiofor.github.io/

Education

2020 - Present — **Ph.D., University of Notre Dame, United States.**
Civil & Environmental Engineering and Earth Sciences (Fluid Dynamics).
Dissertation: The Role of Submesoscale and Turbulent Processes in Tropical Cyclone Intensity Changes.

2019 - 2020 — **Postgrad., International Center for Theoretical Physics (ICTP), Italy.**
Physics (Earth Systems).
Thesis: Local and Non-Local PBL schemes in WRF model - Impact on the Intensification of Tropical cyclone Idai.

2018 - 2019 — **M.Sc., African Inst. for Mathematical Sciences (AIMS), Rwanda.**
Mathematical Sciences.
Thesis: Simulating the influence of sea-surface-temperature on tropical cyclones over South-West Indian ocean, using the UEMS-WRF regional climate model.

2012 - 2017 — **B.Sc., University of Lagos, Nigeria.**
Geophysics.
Award: Overall Best Graduating Student in Geosciences (GPA: 4.74/5.0; Top 1%).

Professional Experience

2020 - Present — **University of Notre Dame** – Office of Naval Research (ONR) funded
†Graduate Research Assistant.
-Investigating the physics of hurricane rapid intensity changes.

Jan 2024 - Feb 2024 — **National Center for Atmospheric Research (NCAR), Boulder**
†Graduate Research Visitor *(Incoming)*
-On the Dynamics of Conditional Eddies in the Hurricane Eyewall.

Aug 2022 - Jan 2023 — **National Center for Atmospheric Research (NCAR), Boulder**
†Advanced Graduate Visiting Fellow, ASP-GVP
-Investigated the role of turbulence in the inner eyewall of intense hurricanes.
-Collaborators: Dr. George Bryan, Dr. Richard Rotunno and Dr. Peter Sullivan.

Sept 2018 - Sept 2019 — **Indicina Inc.** - †Data Engineer
-Built and optimized credit risk machine learning (ML) models.

Feb 2018 - Aug 2018 — **KPMG** - †Datascience Intern
- Built and deployed a machine learning (ML) churn model as an API.

Nov 2017 - Jan 2018 — **Carbon Inc.** - †Datascience Intern
-Adapted Adapted machine learning models on AWS platforms.

Research Publications

Peer-Reviewed Journal Publications

[1] **C. N. Oguejiofor***, G. Bryan, and D. Richter, *"On the Dynamics of Conditional Eddies in the Hurricane Eyewall: Coherent Reynolds Stresses.," (In Prep.)*, 2024.

[2] **C. N. Oguejiofor***, G. Bryan, R. Rotunno, P. Sullivan, and D. Richter, *"The Role Of Turbulence In An Intense Tropical Cyclone: Momentum Diffusion.," Journal of the Atmospheric Sciences (Under Review)*, 2023.

[3] **C. N. Oguejiofor***, C. Wainwright, J. Rudzin, and D. Richter, *"Onset of Tropical Cyclone Rapid Intensification: Evaluating the response to Length Scales of Sea Surface Temperature Anomalies," Journal of the Atmospheric Sciences*, vol. 80, 2023. DOI: 10.1175/JAS-D-22-0158.1.

Thesis

[1] **C. N. Oguejiofor*** and G. Guiliani, *Local and Non-Local PBL schemes in WRF model - Impact on the Intensification of Tropical cyclone Idai*. 2020. URL: https://drive.google.com/file/d/1F6uRMYqRKw06MXhs9J69rbkEwE8w-_F3/view.

[2] **C. N. Oguejiofor*** and B. J. Abiodun, *Simulating the influence of sea-surface-temperature on tropical cyclones over South-West Indian ocean, using the UEMS-WRF regional climate model*. 2019. DOI: 10.48550/arXiv.1906.08298.

Conference Proceedings

[1] C. N. Oguejiofor*, G. Bryan, R. Rotunno, P. Sullivan, and D. Richter, "The diffusive role of turbulence in an intense tropical cyclone.," in *American Meteorological Society's (AMS) 36th Conference on Hurricanes and Tropical Meteorology*, Long Beach, California, 2024 *(Upcoming)*.

[2] C. N. Oguejiofor*, C. Wainwright, J. Rudzin, and D. Richter, "Tropical cyclone rapid intensification: Evaluating the response to length scales of sea surface temperature anomalies.," in *American Meteorological Society's (AMS) 23rd Conference on Air-Sea Interaction - The 103rd AMS Annual Meeting*, Denver, Colorado, 2023.

[3] C. N. Oguejiofor*, C. Wainwright, and D. Richter, "Investigating the dependence of hurricane intensity on varying sst patterns using idealized model simulations," in *Ocean Sciences Meeting (OSM)*, Held Virtually, 2022.

[4] C. N. Oguejiofor*, C. Wainwright, and D. Richter, "Investigating the sensitivity of hurricane intensification to length scales of sea surface temperature (sst) heterogeneities.," in *35th Conference on Hurricanes and Tropical Meteorology (AMS)*, New Orleans, Louisiana, 2022.

[5] C. N. Oguejiofor*, C. Wainwright, J. Rudzin, and D. Richter, "Tropical cyclone rapid intensification: Influence of multiscale anomalies in sea surface temperature (sst).," in *Front Range Tropical Cyclone Workshop*, Fort Collins, Colorado, 2022.

[6] C. N. Oguejiofor*, C. Wainwright, and D. Richter, "Investigating the dependence of hurricane intensity on varying sst patterns using idealized model simulations.," in *American Geophysical Union (AGU)*, New Orleans, Louisiana, 2021.

[7] C. N. Oguejiofor*, C. Wainwright, and D. Richter, "Investigating the dependence of hurricane intensity on varying sst patterns using idealized model simulations.," in *Midwest Student Conference on Atmospheric Research (MSCAR)*, Held Virtually, 2021.

Skills

Coding	Python, FORTRAN, Shell Scripting, MATLAB, SQL, R, LaTeX.
Packages	Numpy/Scipy, Tensorflow/Keras, xarray, Matplotlib, CDO, NCL/NCO, GRADS.
Models	Weather research and forecast (WRF), Cloud model (CM1), HYSPLIT, TouchStone®.
Computing	High performance computing (MPI), Cloud Computing (AWS), Version control (Git).

Awards and Certifications

Grants & Awards

2024 **NCAR Graduate Visitor Fund** - Mesoscale & Microscale Met. (MMM) Lab. **$2,000**

2023 **Computational Sciences and Visualization Award** - Center for Research Computing, Notre Dame. **$1,000**

2023 **3rd place oral presentation Award** - AMS 23rd Conference on Air-Sea interaction.

2022 - 2023 **NCAR Fellowship Award** - Advanced Study Program (ASP) graduate visitor. **$15,750**

2019 **UNESCO/IAEA Study Grant** - International Centre for Theoretical Physics. **€9,600**

2017 **AAPG - L. Austin Weeks**, Undergraduate Research Grant Program. **$500**

2012 - 2017 **MTN Foundation Scholarship**, for outstanding academic performance. **$450/year**

Professional Certifications

May 2023 **Machine Learning in Weather and Climate (Tier 1)** - by ECMWF.

Sept 2022 **Certified AWS Cloud Practioner** - by Udemy.

Teaching

Fall 2022 **CE 30125**: Statics (Prof. David. H. Richter).

2020; 2021 **CE 30125**: Computational Methods (Prof. David. H. Richter).

2021 **CE 40450**: Hydraulics (Prof. Andew Kennedy).

Services & Professional Appointments

2023 - 2024 **Altius Small Unmanned Aerial System (sUAS)** – data quality control and analysis team (led by Dr. Joseph J. Cione, NOAA).

2022 - 2024 **American Meteorological Society (AMS)**, air-sea interaction committee.

Summer 2021 **Tropical Cyclone Rapid Intensification (TCRI) Campaign**– aircraft planning team (with Dr. Pete Finocchio) funded by Office of Naval Research (ONR).

References

†Dr. George H. Bryan
Section head,
Mesoscale and Microscale Meteorology (MMM),
National Center for Atmospheric Research (NCAR),
gbryan@ucar.edu

†Dr. Richard Rotunno
Senior scientist (MMM),
National Center for Atmospheric Research (NCAR),
Member – National Academy of Sciences,
rotunno@ucar.edu

†Prof. Joseph H. Fernando
Wayne and Diana Murdy Endowed Prof. of Engr.,
Civil and Environmental Engineering,
University of Notre Dame,
Harindra.J.Fernando.10@nd.edu

†Prof. David H. Richter (PhD. Advisor)
Associate Professor,
Civil and Environmental Engineering,
University of Notre Dame,
David.Richter.26@nd.edu