Osita E. Onyejekwe

Assistant Teaching Professor: Department of Computer Science: University of Colorado Boulder

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Education

- **Florida Institute of Technology** — **Melbourne, FL**
  PH.D., Operations Research — *2012–2017*
- **Florida Institute of Technology** — **Melbourne, FL**
  M.Sc., Applied Mathematics — *2010–2012*
- **Northern Arizona University** — **Flagstaff, AZ**
  B.Sc., Environmental Engineering — *2006–2009*
- **New England College** — **Henniker, NH**
  B.A., Mathematics — *2004–2006*

Employment

- **University of Colorado Boulder** — **Boulder, CO**
  Assistant Teaching Professor, Department of Computer Science — *August 2022 – Present*
- **University of Colorado Boulder** — **Boulder, CO**
  Assistant Teaching Professor, Department of Applied Mathematics — *January 2020 – August 2022*
- **University of Colorado Denver** — **Denver, CO**
  Lecturer, Department of Mathematical and Statistical Sciences — *August 2019 – August 2020*
- **University of Colorado Boulder** — **Boulder, CO**
  Lecturer, Department of Mathematics — *August 2018 – December 2019*
- **Front Range Community College** — **Westminster, CO**
  Adjunct Instructor, Mathematics Department — *February 2018 – August 2018*
- **Burgio Enterprises, Ltd** — **Palm Bay, FL**
  Research Associate (burgiomedicalresearch.com) — *May 2017 – August 2017*

Refereed Journal Publications

- Kachouie, N.N.; **Onyejekwe, O.E.** (2020). Climate Change Study via the Centennial Trend of Climate Factors. Hydrology 2020, 7, 25. https://doi.org/10.3390/hydrology7020025

- Burgio M, **Onyejekwe OE** (2018). Diagnoses of Young Trauma Victims with Disc Desiccation a Quadruple-Blind Methodology. J Bioequiv Availab 10: 011-013. Doi: 10.4172/jbb.1000368

- Burgio M, **Onyejekwe OE** (2017). Degenerative Disc Disease in the Active Military Special Forces and the Financial Benefits of Early Detection Using a Quadruple Blind-Study. J Bioequiv Availab 10: 004-006. Doi: 10.4172/jbb.1000366

- **Onyejekwe, Osita** Holman, Bryan Kachouie, Nezamoddin. (2017). Multivariate models for predicting glacier termini. Environmental Earth Sciences. 76. 10.1007/s12665-017-7135-2.

Teaching Experience

- Hundreds of credit hours of post secondary teaching experience. Courses include:

- **Modeling and Predicting Climate Anomalies** (Coursera x Univ. Colo. Boulder)
- **Statistical Learning for Data Science Specialization** (Coursera x Univ. Colo. Boulder)
- **Probability for Computer Science** (Univ. Colo. Boulder)
- **Reading and Research in Statistics** (Univ. Colo. Boulder)
- **Linear Algebra with Computer Science Applications** (Univ. Colo. Boulder)
- **Intro to Data Science with Probability and Statistics** (Univ. Colo. Boulder)
- **Numerical Computation** (Univ. Colo. Boulder)
- **Data Mining** (Univ. Colo. Boulder)
- **Machine Learning** (Univ. Colo. Boulder)
- **Statistical Programming in R** (in Data. Sci. Department, Univ. Colo. Boulder)
- **Statistical Methods and Applications II** (in Data. Sci. Department, Univ. Colo. Boulder)
- **Methods in Statistical Learning** (in Data. Sci. Department, Univ. Colo. Boulder)
- **Introduction to Data Science** (in Applied Math. Department, Univ. Colo. Boulder)
- **Applied Regression** (in Applied Math. Department, Univ. Colo. Boulder)
- **Calculus 2 for Engineers** (in Applied Math. Department, Univ. Colo. Boulder)
- **Introduction to Differential Equations with Linear Algebra** (Univ. Colo. Boulder)
- **Quantitative Reasoning and Mathematical Skills** (Univ. Colo. Boulder)
- **Calculus 2** (in Math. Department, Univ. Colo. Boulder)
- **Introduction to Statistics** (Univ. Colo. Boulder)
- **Linear Algebra/Differential Equations** (in Applied Math. Department, Univ. Colo. Boulder)
- **Ordinary Differential Equations** (in Math. Department, Univ. Colo. Boulder)
- **Reading and Research in Applied Mathematics**(Univ. Colo. Boulder)
- **Introduction to Statistics** (Front Range Community College)
- **Calculus 2** (Front Range Community College)

- Experience with:

• Diverse student populations, including applied science and engineering students, and community college students.
• Evidence-based teaching methods, including active learning techniques, and partially flipped classes.
• Asynchronous and synchronous online teaching, learning environments, including Coursera, Canvas, and WebAssign.
• Technology in the classroom (e.g., iPad notes, Jupyter Notebook demos).

Graduate Students Supervised

- **Margaret Hegwood, (PhD Environmental Studies: UCB)** Dissertation: *Quantitative insights for sustainable food systems transformations* 3rd Year

- **Dominick Fiscalini, (MS Mathematics: UCB)** Masters Degree Comprehensive Examination Committee. Project: *An Introduction to Persistent Homology* Spring 2023.

- **Zack Jensen, (MS Applied Mathematics: UCB)** Graduate Research study pertaining to the use of the Southern Oscillation Index (SOI) as a way of predicting extreme weather patterns in Mauna loa, Hawaii using R Programming. Fall 2021

- **Ziyu Li, (MS Applied Mathematics: UCB)** Graduate Research study pertaining to ocean circulation patterns and the Coriolis effect due to Greenhouse Gas Variables. Fall 2021, Spring 2022.

- **Laurette Hamlin, (MS Applied Mathematics: UCB)** Graduate Research study pertaining to machine learning algorithms to optimize and verify predictive climate models using multivariate linear regression with interaction. Fall 2020, Spring 2021, Fall 2021, Spring 2022.

Undergraduate Students Supervised

- **Abigal Moonam, Undergraduate Research Opportunities Program (UROP): UCB** - Mentor and advisor for Abigail Moonan's 2022 Summer UROP pertaining to the application of the Fresnel Water Treatment System (FWTS) to Low-Income Rural Communities. I advised her during the design phase of the water filtration system. Summer 2022

- **Abigail Moonan, Undergraduate Independent Study: UCB**. "Prediction of Extreme Precipitation Events in Mauna Loa, Hawaii using Multivariate Models. Summer 2020, Fall 2020.

- **Adam Hoerger, Research Project: UCB**. "Prediction of Extreme Precipitation Events in Mauna Loa, Hawaii using Multivariate Models. Spring 2020.

- **Armen Davis, Research Project: UCB**. "Prediction of Extreme Precipitation Events in Mauna Loa, Hawaii . Spring 2020

- **Srihari Srinivasan, Luna Kostic, Cole Campagnolo, Undergraduate Research Opportunities Program (UROP): UCB**. "Predicting the price of Bitcoin through tweets via Image Sentiment Analysis", Fall 2022 - Present.

Dissertation Committees

- **Margaret Hegwood, Sustainability** (CU Boulder), exp 2025

Doctoral Committees

- **Leah Zuckerman, Astrophysics** (CU Boulder), Fall 2024

- **Cornelius Adejoro, Computer Science** (CU Boulder), Fall 2024

Masters Thesis Committees

- **Dominick Fiscalini, Mathematics** (CU Boulder), 2023

Service and Activities

- **Hiring Committee member for the Teaching Assistant Professor/Teaching Associate Professor in Data Science – Applied Math (APPM) Program for potential faculty** Spring 2024. UCB.

- **Spring 2024 Follow-up Peer Mentoring program** - I invested time and effort to (i) apply the research-based instructional strategies and course design principles learned in the previous Learning by Design program to teach two STEM class sessions and (ii) apply a research-informed teaching evaluation framework in observing a peer teach two of their STEM class sessions, to learn from one another. The Follow-up Peer Mentoring program consisted of two in-person 1.5-hour meetings, to kick off and wrap up the program as a cohort; four classroom observations; and several meetings with your peer mentor to plan and debrief those classroom observations.

- **NSF-funded Active Learning Academy (ALA)** - Completed the 2023 Learning by Design Workshop. This workshop a) introduced participants to research-based instructional strategies and course design principles that facilitate active learning in an undergraduate STEM course being taught and (b) cultivated a faculty learning community that together explored ways to apply active learning to their chosen courses.

- **Hiring Committee member of the Masters of Science in Data Science (MSDS) Program for potential faculty**. Spring 2023-Present. UCB.

- **Admissions Committee member of the Masters of Science in Data Science (MSDS) Program**. Spring 2023-Present. UCB.

- **Faculty Evaluation Subcommittee of the APPM (Applied Mathematics) Undergraduate Committee: Spring 2022.** Work in this committee includes but is not limited to re-structuring the manner in which instructors under the teaching track are evaluated. Goal of this committee is to tailor instructor evaluations to reflect a teaching philosophy based on self reflection and goal orientation. UCB.

- **Admissions Committee member of the Applied Mathematics Masters Degree Program**. Spring 2020-Spring 2022. UCB.

- **SIAM Chapter Coordinator for Data Science (Applied Mathematics)**. Began assembling speakers to present their industry experience to undergraduate (and/or graduate) students focusing in engineering or the mathematical sciences. Program was left in hiatus due to COVID-19 pandemic. UCB.

- **Undergraduate Student Mentor: Summer 2020/Fall 2020**. Mentored undergraduate aerospace engineering student Abigail Moonan in APPM 4840 for two semesters. She also took two more courses under me, namely, MATH 2510 and APPM 2360. We are currently collaborating on a paper I will release for peer review this year focusing on extreme climate weather patterns in Mauna Loa Hawaii. UCB.

- **Course Coordinator: APPM 1360/Calculus 2: UCB: Summer 2021, Summer 2022**.
  - Duties included posting on Canvas for all sections with news feedback, gradebook, and contents. Has integrated MyMathlab online homeworks with Canvas, writing exams and quizzes with solutions using LATEX. Installing common CANVAS page for all course sections. UCB.
  - Weekly meetings with undergraduate learning assistants and graduate teaching assistants. Also held separate meetings with the other course instructor. UCB.

- **Admitted Students Day: Spring 2022.** My colleague and Associate Department Chair Anne Dougherty and I attended admitted students' day to represent information about our Statistics and Data Science BA degree to interested and admitted students. UCB.

- **Admitted Students Day: Spring 2021**. My colleagues Brian Zaharatos, Eric Vance and I attended admitted students' day to represent information about our Statistics and Data Science BA degree to interested and admitted students. UCB.

- **New Course Development: STAT 5005**. Introduction to Data Science course. Students would then choose either STAT 5000 or STAT 5005 as a first course for the Masters in Applied Mathematics/Statistics Data Science core redesign program (both followed by STAT 5010). UCB.

- **College of Arts and Sciences Welcome Fair: Fall 2021**. My colleague Brian Zaharatos and I represented the BA in Statistics and Data Science at the welcome fair on Friday 08/20/2021. UCB.

Conferences

- **UC Berkely: 2020 National Workshop on Data Science Education**. I was selected and partook in the 2020 National Workshop on Data Science Education at UC Berkley. This conference was organized by UC Berkeley's Division of Computing, Data Science, and Society with support from Microsoft and the West Big Data Innovation Hub and covered materials pertaining to Jupyter infrastructure, Data 8 teaching guides, Data 100, and Data Science Modules and Connectors.

- **Washington DC: 2022 R studio conference**. I was selected and partook in the 2022 National Workshop on R studio. This conference was organized by R-studio and contained an array of coding workshops and presentations pertaining to data science/machine learning algorithms, software improvements and employment opportunities.

Grant Proposals

- **Fall 2024: Undergraduate Research Opportunities Program (UROP)** - Mentor for Luna Kostic and Srihari Srinivasan UROP (current undergraduate students in the Statistics and Data Science program at CU Boulder) pertaining to modeling cryptocurrency price changes via machine learning algorithms. Successfully helped Luna and Srihahri compose the grant proposal in the amount of $3,000, which will be used to fund their research in the Fall of 2024 and Spring 2025.

- **Spring 2022: Undergraduate Research Opportunities Program (UROP)** - Mentor for Abigail Moonan's 2022 Summer UROP pertaining to the application of the Fresnel Water Treatment System (FWTS) to Low-Income Rural Communities. Successfully helped Abigail compose the grant proposal in the amount of $3,000, which will be used to fund her research.