Dewayne A. Dixon, PhD

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Professional Profile

Mathematician and college educator with a PhD in Mathematics and a record of teaching, mentoring, and curriculum development across mathematics, computer science, and artificial intelligence. Experienced in teaching undergraduate mathematics from algebra through calculus and differential equations, and in designing courses that connect mathematical foundations to computation, modeling, and emerging technologies. Committed to strong advising, student support, and service that strengthens departments, curricula, and interdisciplinary learning environments.

Education

Howard University — Washington, DC August 2020 – July 2024
Doctor of Philosophy, Mathematics
Specialty: Machine Learning, Bioinformatics, and Genetics

Virginia State University — Petersburg, VA December 2018
Master of Science, Mathematics
Specialty: Deep Learning, Computer Vision, and Deep Neural Networks

Morehouse College — Atlanta, GA May 2014
Bachelor of Science, Mathematics

Academic Appointments

Morehouse College — Visiting Assistant Professor in Computer Science; *Atlanta, GA* August 2025 – Present

- Teach foundational computer science courses including Discrete Structures and Introduction to Theory of Computation.
- Mentor undergraduate researchers across Morehouse College and Spelman College, as well as graduate trainees at Morehouse School of Medicine, on interdisciplinary projects involving artificial intelligence, bioinformatics, genetics, and mathematical modeling.
- Contribute to curriculum development and collaborative academic initiatives.

The AUC Data Science Initiative — Faculty Fellow; *Atlanta, GA* August 2025 – Present

- Develop a research and curriculum agenda in data science education across HBCUs.
- Co-lead faculty curriculum initiatives and contribute to seminars, guest lectures, and programming that strengthen data science teaching and collaboration.
- Mentor undergraduate and graduate student researchers in interdisciplinary quantitative work.

Hampton University — Assistant Professor of Mathematics; *Hampton, VA* August 2024 – May 2025

- Taught Intermediate Algebra, College Mathematics II, Calculus, and Differential Equations.
- Supported student learning through clear instruction, course coordination, and engagement with diverse student populations.
- Contributed to grant development and interdisciplinary academic efforts related to artificial intelligence and data-driven research.

Howard University — Instructor in Mathematics; *Washington, DC* August 2020 – May 2024

- Taught Algebra, Calculus I, and Calculus II in both in-person and virtual learning environments.
- Designed and delivered instruction that strengthened student understanding across a wide range of mathematical backgrounds.
- Developed and piloted courses in machine learning and deep learning to expand computational offerings in mathematics.

Morehouse College — Adjunct Faculty in Mathematics; *Atlanta, GA* August 2019 – June 2020

- Taught College Algebra and supported students with varied levels of mathematical preparation.

Richmond Public Schools — Mathematics Teacher; *Richmond, VA* February 2015 – March 2018

- Delivered mathematics instruction aligned with the Virginia Standards of Learning.
- Monitored student progress through assessment and instructional adjustment.

Teaching

Mathematics Courses Taught

- College Algebra I and II; Intermediate Algebra; College Mathematics II
- Calculus I; Calculus II; Differential Equations

Computer Science and Quantitative Computing Courses Taught

- Discrete Structures
- Introduction to Theory of Computation
- Undergraduate Research in Artificial Intelligence

Seminars and Instruction in Machine Learning

- Howard University, Biology Department — Seminar talks on Machine Learning and Image Processing using CNN (Python)
- Howard University School of Medicine — Introduction to Machine Learning and Image Processing using CNN (Python)

Course Development and Curriculum Innovation

- *Howard University:* Symmetric Groups and AI (Image Processing); Mathematics for Machine Learning I
- *Morehouse College (proposed courses awaiting approval):* Computational Symmetry, Image Processing, and AI; AI, Evidence, and Critical Thinking; Introduction to Artificial Intelligence; Artificial Intelligence

Student Mentorship and Advising

- **Graduate School Advising:** Cheyene Henry (Howard University, Mathematics); Josh Kyei (Howard University, Mathematics)
- Mentor undergraduate researchers from Morehouse College and Spelman College
- Mentor graduate trainees at Morehouse School of Medicine
- Active research team includes members from Morehouse College, Spelman College, and Morehouse School of Medicine

Research and Scholarship

Doctoral Dissertation: Core Epigenetic Module Biomarkers among Various PTSD Subtypes July 2024
Under the direction of Dr. Yeona Kang and Dr. Ruoting Yang.

Master's Thesis: Neural Networks and its Application to an Image Binary Classification Problem December 2018
Under the direction of Dr. Yongjin Lu, Dr. Wei-Bang Chen, and Dr. Tariq Qazi.

Undergraduate Project: Enhanced Principal Rank Characteristic Sequence May 2014
Under the direction of Dr. Ulrica Wilson.

Research Areas

- Mathematics and computation for biological data
- Explainable machine learning and deep learning
- Bioinformatics, genetics, and neuroscience
- Mathematical foundations for artificial intelligence

Selected Talks and Workshops

Contributed Talks

- Society for Mathematical Biology Annual Meeting, *Core Epigenetic Module Biomarkers among Various PTSD Subtypes*, Columbus, OH, July 2023.
- Military Health System Research Symposium, *Core Epigenetic Module Biomarkers among Various PTSD Subtypes*, Kissimmee, FL, August 2024.
- Joint Mathematics Meetings, *Core Epigenetic Module Biomarkers among Various PTSD Subtypes*, Washington, DC, January 2026.

Workshops and Invited Talks

- AUC Data Science Initiative, *AI Isn't Coming—It's Here: Faculty and Large Language Models* (Parts 1 & 2), Atlanta, GA, 2025.
- ADMI Symposium, *Vibe Coding from Classroom to Industry*, Orangeburg, SC, March 2026.
- Bronner Business Institute NxLeveL Course, *Use of Generative AI to Help Summarize Research Findings*, Austell, GA, March 2026.

Service

University and Interdisciplinary Service

- Howard University — Task Force Member, "Emerging Technologies, AI/ML and the Teaching of Mathematics"
- Hampton University — University Artificial Intelligence Task Force: Student Implementation Chair; Consultant to the Office of the Provost for Faculty Implementation and Development
- Morehouse College — Mentor, President's Hackathon; guided student teams in developing AI-driven minimum viable products; mentored teams whose projects earned first and second place

Departmental Service

- Howard University — Reorganized and served as Graduate President of Howard's SIAM Student Chapter
- Howard University — Founder, Bridging Education and Mathematics (BEAM) Tutoring Initiative
- Hampton University — Course Coordinator for Intermediate Algebra and Differential Equations

Selected Grants and Proposals

- National Science Foundation, Co-Principal Investigator, *Implementation Project: Advancing Data Science at HBCUs: A Sustainable Model for Faculty, Research, and Student Success*, pending, $1,243,754

requested.
- American Parkinson Disease Association, Principal Investigator, Letter of Intent submitted for biomarker discovery projects in Parkinson's disease.

Awards and Recognition

- MGB-SIAM Early Career (MSEC) Fellowship, 2025–2027 cohort
- Mathematically Gifted and Black Rising Star, February 2024