Arielle King, M.A.T.

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Education

Ph.D. Candidate, Applied Science & Technology - STEM Education
North Carolina A&T State University | Anticipated Summer 2026

M.A.T Mathematics Education
North Carolina A&T State University

B.S. Communication
East Carolina University

Research and Academic Employment:

Doctoral Research Fellow | STEM Undergraduate Success Research Center | Spring 2025 Current

- Lead a multidisciplinary research team conducting a mixed-methods study examining Black STEM undergraduates' experiences and perceptions at the intersection of policing, surveillance, and STEM education.

- Developed and submitted a PI-led proposal on data justice and epistemological frameworks integrating ecological development and critical quantitative methods.

- Designed instruments, managed IRB preparation, and conceptualized quantitative data analysis strategies emphasizing ethical and human-centered data use.

Graduate Research Assistant | *[Black epiSTEMologies](#)* | NC A&T State University |Aug 2023- Apr 2025

- Managed collaborative research analyzing racialized experiences in STEM higher education.

- Supervised undergraduate researchers to apply statistical and qualitative methods.

- Authored manuscripts and conference papers connecting STEM education, quantitative modeling, and racial equity.

Doctoral Dissertation Research | Applied Science & Technology | NC A&T State University
Fall 2021- Current

- Designed and led a 10-year modeling project using national publication data to examine institutional and disciplinary predictors of scientific impact.

- Deployed machine learning algorithms (SVM, XGBoost, Random Forest) in R with feature engineering and model validation pipelines.

- Applied text mining and time-series anomaly detection to identify disparities in institutional research productivity.

- Published findings in *Analytics* (2025), showcasing data-intensive methods for uncovering systemic inequities in higher education research output

Innovation Team Lead

College of Science & Technology | NC A&T State University |Spring 2024
- Managed a cross-disciplinary tech team to develop a graduate education management mobile app designed to reduce attrition and streamline degree progress.

- Oversaw UX design, project planning, and stakeholder engagement; led successful presentation of prototype to university and industry partners.

- Winner, *SciTech Week Innovation Challenge (1st Place, 2024)*.

Intern

National Science Foundation | Summer 2022
- Conducted program evaluation and longitudinal data analysis to assess national STEM education investments.

- Produced an impact report informing funding decisions and developed a community outreach strategy for NSF engineering programs.

STEM Education Consultant

QuSTEAM Initiative | NC A&T State University | Aug 2021–Oct 2022

- Collaborated with faculty to integrate data science and quantum computing frameworks into introductory STEM courses.

- Designed surveys and assessment instruments aligned with evidence-based teaching practices for interdisciplinary learners.

High School Math Teacher

Guilford County Schools |Greensboro, NC | 2013–2018; 2020–2021

- Delivered high school mathematics instruction (Math II/III) via in-person and online modalities, achieving >30% student growth over three consecutive years.

- Led professional learning communities and facilitated workshops on culturally responsive pedagogy in mathematics.

Publications and Presentations

King, A., & Mostafa, S. A. (2025). Uncovering patterns and trends in big data-driven research through text mining of NSF award synopses. *Analytics, 4*(1), 1. https://doi.org/10.3390/analytics4010001

Conference Presentations:

- *Symposium on Infusing and Integrating Data Science and AI in Research and STEM Education*

(2025)

- *Symposium on Data Science & Statistics*, Richmond, VA (2024)

- *NSF HBCU-UP ACE DSA Research Symposium on Advances in Text and Data Mining* (2023)

Selected Awards and Honors

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- *Chancellor's Distinguished Fellow*, North Carolina A&T State University (2023–Present)

- *1st Place Winner*, SciTech Week Innovation Challenge (2024)

- *IBM–HBCU Quantum Center Graduate Scholar* (2021–2022)

Relevant Coursework

Advanced Machine Learning • Statistical and Deep Learning (STAT 710) • Multivariate Statistical Analysis (MATH 721) • Statistical Data Analytics & Visualization (MATH 782) • Data Wrangling & Visualization (DAAN 703) • Qualitative Research (LEST 860) • Theories in STEM Thinking (AST 802) • History and Philosophy of STEM Education (AST 801)