Michael Byrd

✉ mbyrd6@clemson.edu 🔗 michael-byrd.github.io in michaelbyrd1 ⌨ michael-byrd

Education

Ph.D. Candidate	**Mathematics**, Clemson University, Clemson, SC	Aug. 2019 – Present

- Advisor: Dr. Michael Burr

M.S.	**Mathematics**, University of North Carolina Wilmington, Wilmington, NC	May 2019

- Thesis: Using Quantum Algorithms to Solve Linear Systems
- Advisor: Dr. Russell Herman

B.S. Honors	**Mathematics**, University of North Carolina Wilmington, Wilmington, NC	May 2018

- Minor in Computer Science
- Thesis: Inverse Problems in Algebra and Number Theory
- Advisor: Dr. Michael Freeze

Research Experience

Research Assistant, Stapleton Lab, University of North Carolina Wilmington — Wilmington, NC — Dec. 2016 – May 2019

- Advisor: Dr. Ann Stapleton
- Programmed simulations to detect genotype to phenotype association in plants
- Used high performance computing with Python and R to analyze phenotype and covariate data

Teaching Experience

Adjunct Faculty, University of North Carolina Wilmington — Wilmington, NC — Jan. 2025 – Present

- STT 210, Introduction to Statistics with Applications in the Health Sciences — S25

Graduate Teacher of Record, Clemson University — Clemson, SC — Aug. 2019 – Present

- MATH 1080, Calculus II — S24, S23, S21
- MATH 1060, Calculus I — F23, F22, S22, F21, F20
- MATH 1040, Long Calculus I, Part 1 — S20
- MATH 1020, Business Calculus I — F19

Graduate Teacher of Record, University of North Carolina Wilmington — Wilmington, NC — Jan. 2019 – May 2019

- MAT 111, College Algebra — S19

Graduate Teaching Assistant, University of North Carolina Wilmington — Wilmington, NC — Aug. 2018 – Dec. 2018

- MAT 111, College Algebra — F18

Publications

Burr, M., **Byrd, M.** "Certified simultaneous isotopic approximation of curves via subdivision", accepted to Journal of Symbolic Computation 2024.

Burr, M., **Byrd, M.** "Certified simultaneous isotopic approximation of pairs of curves via subdivision", in Proceedings of the 2023 International Symposium on Symbolic and Algebraic Computation, Tromsø, Norway, July 24 – 27, 2023.

Neill, N.M., **Byrd, M.C.R.**, Billman, T., Brandizzi, F., Stapleton, A. "Plant growth regulators interact with elevated temperature to alter heat stress signaling via the Unfolded Protein Response in maize", Sci Rep 9, 10392 (2019). https://doi.org/10.1038/s41598-019-46839-9 ↗

Presentations

Certified Algebraic Curve Projections by Path Tracking   July 2025
Invited Talk, Numerical and Certified Methods in Algebraic Geometry session, SIAM AG 2025
Mini-Symposium, University of Wisconsin–Madison

Certified Approximation Algorithms in Computational Algebraic Geometry   April 2025
Invited Talk, Meeting on Applied Algebraic Geometry, Auburn University

Certified Algebraic Curve Projections by Path Tracking   March 2025
Invited Talk, SIAM Southeastern Atlantic Sectional Meeting,
University of Tennessee Knoxville

Certified Algebraic Curve Projections by Path Tracking   March 2025
Invited Talk, AMS Spring Southeastern Sectional Meeting, Clemson University

Certified Simultaneous Isotopic Approximation of Several Curves via Subdivision   Jan. 2025
Invited Talk, Applications of Algebraic Geometry session, Joint Mathematics Meetings,
Seattle, WA

Certified Simultaneous Isotopic Approximation of Several Curves via Subdivision   April 2024
AMS Spring Central Sectional Presentation, University of Wisconsin–Milwaukee

Certified Simultaneous Isotopic Approximation of Pairs of Curves via Subdivision   Nov. 2024
SMSS Graduate Student Seminar Presentation, Clemson University

Certified Simultaneous Isotopic Approximation of Pairs of Curves via Subdivision   July 2023
International Symposium on Symbolic and Algebraic Computation, Tromsø, Norway

Simultaneous Isotopic Approximation of Pairs of Curves   April 2023
Meeting on Applied Algebraic Geometry Poster Presentation, Georgia Tech

Square Sum Problems with Variations   March 2018
MAA Sectional Presentation, Clemson University
  • Best Presentation Award

Professional Memberships

SIAM (AG)   2023 – Present
SIGSAM   2023 – Present
ACM   2022 – Present
Upsilon Pi Epsilon, Computer Science Honors Society, UNC Wilmington   2017 – Present
Pi Mu Epsilon, Mathematics Honors Society, UNC Wilmington   2017 – Present

Honors, Awards, and Grants

Graduate Student Travel Grant, Clemson University   2025
Doctoral Dissertation Completion Grant, Clemson University   2024 – 2025
Graduate Student Travel Grant, Clemson University   2024
ISSAC 2024 Travel Grant, North Carolina State University   2024
Spring Central Sectional Meeting Travel Grant, University of Wisconsin–Milwaukee   2024
Macaulay2 Workshop 2023 Travel Grant, University of Minnesota Twin Cities   2023

MAAG Travel Grant, Georgia Tech   2023
Walt & Susan Patterson Prize, MAA Sectional Best Presentation Award, Clemson University   2018
Adrian D. Hurst Scholarship, Mathematics Scholarship, UNC Wilmington   2018
Outstanding Service and Leadership Award, Mathematics Department, UNC Wilmington   2018
Gene T. & Elizabeth J. Fales Scholarship, Mathematics Scholarship, UNC Wilmington   2017
Dean's List, UNC Wilmington   2016 – 2018

Professional Development

Macaulay2 Mini-School, North Carolina State University   July 2024
Macaulay2 Mini-School, University of Minnesota Twin Cities   June 2023
Macaulay2 Workshop, University of Minnesota Twin Cities   June 2023

University and Public Service

Special Session Organizer, AMS Spring Southeastern Sectional Meeting   Mar. 2025
Special Session Organizer, AMS Fall Southeastern Sectional Meeting   Oct. 2024
Calculus Task Force Member, Clemson University   Aug. 2024
SMSS Graduate Student Advisory Council, Clemson University   Jan. 2024 – Present
Dean's Student Leadership Council, UNC Wilmington   Aug. 2017 – May 2019
President, Mathematics and Statistics Club, UNC Wilmington   Aug. 2017 – May 2018
Member, Mathematics and Statistics Club, UNC Wilmington   Jan. 2016 – May 2019