Jathan W. Austin
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Education

Ph.D., 2012	Mathematics Education, University of Delaware, Newark, DE
M.S., 2007	Mathematics, University of Delaware, Newark, DE
B.S., 2005	Mathematics, Salisbury University, Salisbury, MD

Professional Experience

2018–present	Associate Professor Department of Mathematical Sciences Salisbury University
2012–2018	Assistant Professor Department of Mathematics and Computer Science Salisbury University
2008–2012	Course Instructor School of Education University of Delaware
2005–2008	Course Instructor & Teaching Assistant Department of Mathematical Sciences University of Delaware

Selected Courses Taught (MATH unless otherwise noted):

Salisbury University

105: The Mathematics of Games
130: Fundamental Concepts I
150: Data & Probability Connections
201: Calculus I
210: Intro. to Discrete Mathematics
230: Fundamental Concepts II
300: Intro. to Abstract Mathematics
390: Undergraduate Research Project
430: Math. Connections for Secondary Sch. Teachers
441: Abstract Algebra I
502: Applied Statistics
506: Number & Operation in the Common Core
507: Seminar in Algebra
590: Algebraic Reasoning in the Middle Grades
COSC 501: Methods of Teaching Computer Science

University of Delaware

113: Contemporary Mathematics
221: Calculus I
251: K-8 Mathematics: Numbers & Operations
253: K-8 Mathematics: Geometry, Algebra, & Measurement
EDUC 335: Elementary Mathematics Curriculum and Methods

Selected Conference Presentations

Austin, J. (2023). *Pythagorean triples and generalized Fibonacci numbers.* Fall Meeting of the MD-DC-VA Section of the Mathematical Association of America, Stevenson University, Owings Mills, MD.

Austin, J. & Curl, E. (2021). *Combinatorics and graph theory in Simple Blokus.* Spring Meeting of the MD-DC-VA Section of the Mathematical Association of America (virtual).

Austin, J., Kronenthal, B., Miller, S.M., & Miller, J. (2021). *Counting socially-distanced Catan configurations.* Joint American Mathematical Society and Mathematical Association of America National Meetings (virtual).

Austin, J. (2019). *NFL betting and expected value.* Summer Meeting of the Mathematical Association of America (MathFest), Cincinnati, OH.

Austin, J. (2019). *Teaching mathematics through games.* Joint American Mathematical Society and Mathematical Association of America National Meetings, Baltimore, MD.

Austin, J. (2018). *Using games as a context for mathematical modeling.* Summer Meeting of the Mathematical Association of America (MathFest), Denver, CO.

Austin, J. (2017). *Fibonacci numbers in PTPMs.* Joint American Mathematical Society and Mathematical Association of America National Meetings, Atlanta, GA.

Austin, J. (2016). *Resources for teaching tessellations and transformations.* International Conference on Technology in Collegiate Mathematics, Atlanta, GA.

Austin, J. (2016). *Exploring Hall's genealogy of Pythagorean triads.* Joint American Mathematical Society and Mathematical Association of America National Meetings, Seattle, WA.

Austin, J. & Miller, S.M. (2015). *Exploring probability using the Settlers of Catan.* Summer Meeting of the Mathematical Association of America (MathFest), Washington, D.C.

Austin, J. (2015). *Generating Pythagorean triples of a given height.* Joint American Mathematical Society and Mathematical Association of America National Meetings, San Antonio, TX.

Austin, J. (2014). *Using graphs to illustrate polynomial equations from the history of mathematics.* International Conference on Technology in Collegiate Mathematics, San Antonio, TX.

Austin, J. (2014). *Matrices, twin Pythagorean triples, and Pell numbers.* Joint American Mathematical Society and Mathematical Association of America National Meetings, Baltimore, MD.

Austin, J. (2013). *Pre-Service teachers' mathematical knowledge for teaching and conceptions of teaching effectiveness: Are they related?* 16th Annual Meeting of the Conference on RUME, Denver, CO.

Austin, J. (2013). *Explorations in counting and divisibility: An example for undergraduate mathematics.* Joint American Mathematical Society and Mathematical Association of America National Meetings, San Diego, CA.

Austin J. (2012). *Continuous improvement of mathematics teacher education.* Research Presession of the Annual Meeting of the National Council of Teachers of Mathematics, Philadelphia, PA.

Austin, J. (2011). *Examining personal teacher efficacy beliefs and specialized content knowledge of pre-service teachers in mathematical contexts.* 14th Annual Meeting of the Conference on RUME, Portland, OR.

Selected Presentations as Invited Speaker

Curl, E. & Austin, J. (2021). *Blokus: An introduction to graph theory and combinatorics.* Department of Mathematics DMC, Bryn Mawr College.

Austin, J., Kronenthal, B., Miller, S.M., & Miller, J. (2021). *Count on Catan: A sure cure for board-om.* Department of Mathematics and Computer Science Colloquium, Salisbury University.

Austin, J. (2018). Invited Address at the Phi Eta Sigma Induction Ceremony, Salisbury University, Salisbury, MD.

Austin, J. (2017). *Discovering sum ways of expressing 981.* Eastern Shore High School Mathematics Competition, Salisbury University, Salisbury, MD.

Austin, J. (2016). *Which page numbers are circled? Triangular numbers and arithmetic sequences.* Department of Mathematics and Computer Science ACM/MAA Lecture Series, Mount St. Mary's University, Emmitsburg, MD.

Austin, J. (2014). *Mathematics with triangular numbers.* High School Mathematics Seminar Series, Salisbury University, Salisbury, MD.

Austin, J. (2013). *Seven interesting facts about Pythagorean triples.* Invited Address at the James M. Bennett High School Mu Alpha Theta Induction Ceremony, Salisbury, MD.

Student Presentations

Bright D. & Davis, K. (2018). *Changes in student conceptions of fraction multiplication.* National Conference on Undergraduate Research, University of Central Oklahoma, Edmond, OK.

Bright, D. & Davis, K. (2017). *Developing fifth graders' understanding of fraction multiplication.* National Conference on Undergraduate Research, University of Memphis, Memphis, TN.

Swift, J. & Traube, K. (2016). *Developing students' understanding of fraction addition.* National Conference on Undergraduate Research, UNC Asheville, Asheville, NC.

Perno, A. & Widdowson, A. (2015). *Developing fraction proficiency in fourth grade mathematics.* National Conference on Undergraduate Research, Eastern Washington University, Cheney, WA.

Manuscripts

Peer-reviewed Publications

Austin, J. (2023). *On Pythagorean triple preserving matrices that contain Fibonacci numbers. The Fibonacci Quarterly, 61*(4), 321–326.

Austin, J., Kronenthal B. G., Miller, J., & Miller, S.M (2023). *Caught "red"-handed? The probability of randomly constructing a legal Catan board. The College Mathematics Journal, 54*(4), 355–366.

Austin, J. (2023). *A note on generating primitive Pythagorean triples using matrices. Notes on Number Theory and Discrete Mathematics, 29*(2), 402–406.

Austin, J. & Curl, E. (2022). *Exploring combinatorics and graph theory with simple Blokus. The College Mathematics Journal, 53*(4), 273–281.

Peperak, M. & Austin, J. (2021). *Developing understanding of fraction equivalence. Banneker Banner, 33*(1), 3–9.

Groth, R.E., Austin, J., Naumann, M., & Rickards, M. (2021). *Toward a theoretical structure to characterise early probabilistic thinking. Mathematics Education Research Journal, 33*, 241–261.

Austin J. & Schneider, L. (2020). *Generalized Fibonacci sequences in Pythagorean triple preserving matrices. The Fibonacci Quarterly, 58*(4), 340–350.

Groth, R.E., Bergner, J.A., Austin, J.W., Burgess, C.R., & Holdai, V. (2020). *Undergraduate research in mathematics education: Using qualitative data about children's learning to make teaching decisions. Mathematics Teacher Educator, 8*(3), 134–151.

Groth, R.E., Bergner, J.A., & Austin, J.W. (2020). *Dimensions of learning probability vocabulary. Journal for Research in Mathematics Education, 51*(1), 75–104.

Austin, J. (2019). *Generating Pythagorean triples of a given height. Missouri Journal of Mathematical Sciences, 31*(2), 136–145.

Austin, J., Kronenthal B. G., & Miller, S.M. (2019). *The settlers of "Catanbinatorics." Mathematics Magazine, 92*(3), 187–198.

Groth, R.E., Austin, J.W., Naumann, M., & Rickards, M. (2018). *Probability puppets. Teaching Statistics, 41*(2), 54–57.

Austin, J. (2016). *A curious result for GCDs and LCMs. Mathematics Magazine, 89*(3), 190.

Groth, R.E., Bergner, J.A., Burgess, C.R., Austin, J.W., & Holdai, V. (2016). *Re-imagining mathematics teacher education through undergraduate research. Council on Undergraduate Research Quarterly, 36*(3), 41–46.

Austin, J. & Miller, S.M. (2015). *The Settlers of Catan: Using settlement placement strategies in the probability classroom. The College Mathematics Journal, 46*(4), 275–282.

Austin, J. (2015). *Prospective teachers' personal mathematics teacher efficacy beliefs and mathematical knowledge for teaching. International Electronic Journal of Mathematics Education, 10*(1), 17–36.

Austin, J. (2013). *The role of contextual factors in understanding mathematics teacher efficacy beliefs. Journal of Mathematical Sciences and Mathematics Education, 8*(2), 46–60.

Austin, H.W. & Austin, J.W. (2012). *On a special set of symmetric Pythagorean triple preserving matrices. Advances and Applications in Mathematical Sciences, 12*(2), 97–104.

Austin, H.W. & Austin, J.W. (2011). *Binet formulas for recursive integer sequences. Journal of Mathematical Sciences and Mathematics Education, 4*(1), 1–8.

Other Publications

Austin, J., LaCurts, C., LaCurts, K., Ludwick, K., Short, L., & Stoner, M. (2024). *Benefits of regional high school mathematics competitions. MAA Focus, 44*(2), 28–30.

Austin, J., Kronenthal, B.G., & Miller, S. M. (2021). Off to a good start: Using mathematics to evaluate settlement locations in Catan. In M. Capaldi (Ed.) *Teaching mathematics through games* (pp. 137–143). MAA Press.

Austin, J. (2019). *Problem 1161. The College Mathematics Journal, 50*(5), 379.

Anderson, J., Austin, J., Jing, Y., Schneider, L., Shifler, R., & Wesolowski, S. (2018). *Faculty writing groups for mathematicians. MAA Focus, 38*(5), 36.

Austin, J. (2018). *Problem B-1225. The Fibonacci Quarterly, 56*(1), 82.

Grant Work and Fellowships

2014–2019	Faculty Mentor, Preparing Aspiring Teachers to Hypothesize Ways to Assist Young Students (PATHWAYS: REU funded by NSF) Salisbury University
2010	Research Assistant, A Longitudinal Study of the Effects of K-8 Mathematics Teacher Preparation on Teacher Knowledge, Teaching Practices, and Student Learning (funded by NSF). University of Delaware
2008–2012	Fellow, Mid-Atlantic Center for Mathematics Teaching and Learning (funded by NSF). University of Delaware

Selected Refereeing and Reviewing

2016–present	Journal Referee, The College Mathematics Journal
2016–present	Journal Referee, Mathematics Magazine
2015–present	Journal Referee, PRIMUS
2021–2023	Reviewer, Mathematical Reviews
2015–2019	Reviewer, Proceedings of NCUR
2014–2019	Journal Referee, Teaching Children Mathematics

Selected Service Activities

2021–present	Chair, Henson Student Research & Travel Grants Committee
2022–present	Member, East. Shore H.S. Comp. Program. Competition Committee
2020–2022	New Faculty Coordinator, MD-DC-VA Section of the MAA
2019–2022	Member, Worcester Technical H.S. Program Advisory Committee
2018–2021	Member, Institutional Review Board (Salisbury University)
2013–2015	Student Activities Coordinator, MD-DC-VA Section of the MAA
2013–2021	Paper/Poster Judge, multiple MAA conferences
2012–2022	Co-director, Eastern Shore High School Mathematics Competition

Professional Affiliations

Mathematical Association of America (SIGMAAs: Recreational Mathematics, Sports)