R. ABRAHAM EDWARDS

919 East Shaw Lane ⋄ East Lansing, MI 48825

(517) 884-3931 ⋄ aedwards@msu.edu

EDUCATION

Michigan State University   2016
Ph.D. Mathematics Education
Cognate: Teaching Undergraduate Mathematics

Cleveland State University   2009
M.A. Mathematics
Thesis: Markov Chain Monte Carlo Methods, History, and Applications

Ashland University   2005
B.S. Mathematics

EMPLOYMENT

Michigan State University, East Lansing, MI   August 2016 to Present
Teaching Professor of Mathematics

Lorain County Community College, Elyria, OH   2010 to 2012, 2015 to 2016
Adjunct Instructor (Mathematics)

Cuyahoga Community College, Cleveland, OH   2009 to 2010
Adjunct Instructor (Mathematics)

RECENT TEACHING EXPERIENCE

Multivariable Calculus	Fa 21, Fa 19, Sp 19, Fa 18, Fa 17
Calculus I	Fa 21, Su 21, Fa 20, Fa 19, Fa 18, Fa 17, Sp 17, Fa 16
Quest for the Sublime: Mathematics, Poetry, and the Romantic Age	Su 21, Sp 20
Calculus II	Sp 21, Sp 18
Experimental Mathematics: Honors Research Seminar	Fa 20
College Algebra	Fa 20, Fa 17, Fa 16, Sp 15
Directed Studies in Mathematics	Su 20, Su 19
Scientific Practice: Arts and Humanities	Su 20
Science in a Global Context	Study Abroad Su 19
Mathematics in Cultural and Historical Contexts	Study Abroad Su 19
Statistics for Scientists	Sp 19
Introduction to Higher Mathematics	Sp 17
Mathematics for Elementary Teachers II	Sp 16
Mathematics for Elementary Teachers I	Sp 16
College Mathematics	Fa 15
Precalculus	Sp 15

AWARDS AND GRANTS

**Redesigning, Evaluating and Assessing Creativity Tasks
(REACT) Calculus Fellow** 2020
Creativity Research Group

Study Abroad Program Development Grant 2018
ACCENT International ($10,000)

University Distinguished Fellowship 2012-2016
Michigan State University ($100,000)

Lewis Educational Research and Educational Collaborative Grant 2010
National Aeronautics and Space Administration ($10,000)

RESEARCH PROJECTS

TRansforming Instruction in Undergraduate Mathematics via Primary Historical Sources
Kathleen Clark, Florida State University, P.I.
Curriculum designer and field tester (2017–Present)

Quantitative Literacy Project
Vince Melfi, Michigan State University, P.I.
Design and implementation of new undergraduate mathematics courses (2014–2015)

Connected Mathematics Project
G. Lappan E.D. Phillips, Michigan State University, Co-P.I.
Writing and revising middle school mathematics textbooks (2012–2014)

Preparing to Teach Algebra
Sharon Senk, Michigan State University, P.I.
Multi-institution assessment of algebra teacher preparation (2012–2013)

EDUCATION ABROAD/AWAY EXPERIENCE

Mathematics in Cultural and Historical Contexts
Italy, France, United Kingdom
Summer, 2019
Responsibilities: Program designer, director, and leader.

**Primary Designated School Official (P-DSO) for the Student Exchange and
Visitor Program (SEVP)**
Ohio, Washington, D.C.
2010–2012
Responsibilities: Established preservice teaching opportunities in U.S. high schools for graduate students from Germany.

PUBLICATIONS

Edwards, R.A. (2021). *Stained Glass, Windmills, and the Edge of the Universe: An Exploration of Green's Theorem.* TRansforming Insturction in Undergraduate Mathematics via Primary Historical Sources. Retrieved from `https://digitalcommons.ursinus.edu/triumphs_calculus/18/`

Edwards, R.A. and Komosinski, B. (In Press). Tetration: Iterated Enjoyment. *The College Mathematics Journal.*

Hirt, S., Foster, L., Saunders, J.D., and **Edwards, R.A.** (June 2020). *Calibration and Uncertainty of the NASA Glenn Research Center 12 in. and 10 in. Mass-Flow Plugs.* Agency Report. National Aeronautics and Space Administration, Glenn Research Center, Cleveland, OH.

Edwards, R.A. and Savoie, M. (January, 2020). A Mathematical History Tour: Reflections on a Study Abroad Program. *Convergence*, Retrieved from `https://www.maa.org/press/periodicals/convergence/a-mathematical-history-tour-reflections-on-a-study-abroad-program`.

Edwards, R.A. , Satyam, V., Melfi, V. (2019). *Yes, but is it rigorous?" Similarities Between a Quantitative Literacy Course and Transitions to Formal Mathematics* in Kiraali, G., Piercey, V., and Tunstall, L. (Eds.) Shifting Contexts, Stable Core: Advancing Quantitative Literacy in Higher Education (pp. 115-127). Mathematical Association of America.

Edwards, R. A. (2016). Permutations, Combinations, and Circular Seating Arrangements. *Mathematics Teacher*, *110(3)*, 232-236.

Tunstall, S. L., Melfi, V., Craig, J., **Edwards, R.A.**, Krause, A., Wassink, B., Piercey, V. (2016). Quantitative Literacy at Michigan State University, 3: Designing General Education Mathematics Courses. *Numeracy, 9(2)*, 6.

SELECTED PRESENTATIONS

Edwards R.A. (July 2021) All the Lines: Cavalieri's *Geometria Indivisibilibus* and the Fall of the Jesuati. British Society for the History of Mathematics, University of St. Andrews, Scotland.

Edwards, R.A. (August 2020) Teaching Mathematics in the Age of Corona. Refresh Teaching hosted by Educational Development and Technology, ETH Zurich, Switzerland.

Edwards, R.A. (July, 2019) Romance and Revolution: Mathematics in the Romantic Age. MathFest (Annual meeting of the Mathematical Association of America), Cincinnati, OH.

Edwards, R.A. (August, 2018) Bridging the Sciences and the Humanities with Primary Historical Sources. MathFest, Denver, CO.

Edwards, R.A. (January, 2018) Dynamic 3D Imagery in Calculus III: Student Responses and Learning Gains. Joint Mathematics Meetings, San Diego, CA.

Edwards, R.A. (January, 2017) Great Pedagogical Gains from Mentoring Undergraduate Research in Calculus. Joint Mathematics Meetings, Atlanta, GA.

Edwards, R.A. (January, 2017) A New Angle on Assessing Quantitative Literacy Pathways. Joint Mathematics Meetings, Atlanta, GA.

Edwards, R.A. (August, 2015). Design and implementation of a quantitative literacy course at a large research institution. MathFest, Washington, DC.

Edwards, R.A. (January, 2015). Believe it or Not! Investigating Preservice Teachers Beliefs about the Nature of Mathematics. Joint Mathematics Meetings, San Antonio, Texas.

Edwards, R.A. (April, 2014). Using a History of Mathematics Course to Explore Prospective Teachers' Beliefs About Mathematics. History and Pedagogy of Mathematics Conference, Illinois State University, Normal, IL.

Edwards, R.A. (February, 2014). Beautiful Mathematics. Math in Action Conference, Grand Valley State University, Grand Rapids, MI.

He, J., Stehr, E., Edwards, R.A. (March 2013). Opportunities for preservice teachers to learn to teach reasoning and proof. Conversations Among Colleagues, Central Michigan University, Mt. Pleasant, MI.

K–12 TEACHING EXPERIENCE

Christian Community School (Grafton, OH)   2005–2012
Grades 7–12 Mathematics and Science Teacher

Courses Taught: AP Calculus, AP Physics, Statistics, Algebra I, Algebra II, Geometry, Formal Logic, Pre-Algebra, Earth Science, Life Science

Other Responsibilities: Director of Foreign Studies Program, Director of Pep Band, College and Career Guidance Counselor, Assistant Drama Director

PROFESSIONAL AND SERVICE ACTIVITIES

University Committee on Honors Programs, Micigan State University (August 2021–Present).

Speaker Series Committee, Lyman Briggs College (August 2020–Present).

Educational Policies Committee, Lyman Briggs College (2018–2019, Chair 2019).

Manuscript Reviewer for *Mathematics Teacher*, Mathematical Association of America (2016–Present)

Manuscript Reviewer for *Convergence*, Mathematical Association of America (2018–Present).

Adjudicator, MAA Undergraduate Poster Competitions (January 2017–Present).

PROFESSIONAL MEMBERSHIP

- Mathematical Association of America
  - Special Interest Group on the History of Mathematics
- History and Pedagogy of Mathematics (Americas Chapter)
- National Council of Teachers of Mathematics