

Sarah Cobb

CONTACT INFORMATION

Midwestern State University *Phone:* (940) 397-4441
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3410 Taft Boulevard
Wichita Falls, TX 76308

EDUCATION

University of Utah, Salt Lake City, UT

Ph.D., Mathematics, May 2014
Advisor: Kevin Wortman

Wheaton College, Wheaton, IL

B.S., Mathematics, June 2009
B.A., English Literature, June 2009
Summa Cum Laude

PROFESSIONAL EXPERIENCE

Department Chair

Midwestern State University, Department of Mathematics
August 2021–December 2022, August 2024–Present

Interim Dean

Midwestern State University, McCoy College of Science, Mathematics, and Engineering
December 2022–July 2024

Associate Professor

Midwestern State University, Department of Mathematics
Fall 2019–present

Assistant Professor

Midwestern State University, Department of Mathematics
Fall 2014–Fall 2019

Graduate Student Instructor

University of Utah, Department of Mathematics
August 2010 – May 2014

COURSES TAUGHT

Midwestern State University

Developmental Mathematics: Beginning Algebra, Contemporary Mathematics with Developmental Supplement

Core Mathematics: Contemporary Mathematics, College Algebra (face-to-face and online)

Mathematics for STEM: Trigonometry, Calculus I, Calculus II, Linear Algebra

Math major courses: Introduction to Modern Math, Vector Spaces, Abstract Algebra

Math education courses: Structure of the Number System I, Concepts of Calculus

University of Utah

College Algebra for Business and Social Sciences, Business Calculus, Trigonometry, Discrete Mathematics

PUBLICATIONS

Cobb, Sarah. “Infinite-dimensional cohomology of $\mathbf{SL}_2(\mathbb{Z}[t, t^{-1}])$.” *Journal of Algebra* Volume 462 (2016). 181-196. <https://doi.org/10.1016/j.jalgebra.2016.05.017>

Gupta, Dittika and Sarah Cobb. “Movement in the Math Classroom.” In *Moving INTO the Classroom*, edited by Stacia C. Miller and Suzanne Lindt, 201-246. New York: Springer, 2018.

Gupta, Dittika, Sarah Cobb, Shelby Butler, and Mary Brady. “Lesson Plans for Movement in the Mathematics Classroom.” In *Moving INTO the Classroom*, edited by Stacia C. Miller and Suzanne Lindt, 247-265. New York: Springer, 2018.

Cobb, Sarah C. and Jeff B. Hood. “Mathematical Arguments in Favor of Risk in Andy Weir’s *The Martian*.” *Journal of Humanistic Mathematics*, Volume 8 Issue 1 (January 2018). 94-107. <https://doi.org/10.5642/jhummath.201801.06>

Cobb, Sarah, Michelle Knox, Marcos Lopez, Terry McDonald, Patrick Mitchell. “Distribution of Constant Terms of Irreducible Polynomials in $\mathbb{Z}_p[x]$.” *Notes on Number Theory and Discrete Mathematics*. Volume 25, Issue 4 (December 2019). 72-82.

Cobb, Sarah, Michelle Knox, Marcos Lopez, Terry McDonald, Patrick Mitchell. “Distribution of constant terms of irreducible polynomials in $\mathbb{Z}_p[x]$ whose degree is a product of two distinct odd primes.” *Notes on Number Theory and Discrete Mathematics*. Volume 30, Issue 1 (March 2024). 195-210.

Cobb, Sarah C. and Marcos Lopez. “Parallel Circles: A Math Club as a University Math Circle.” *Journal of Math Circles*, Volume 3, Issue 1, Article 3.

SELECTED
PRESENTATIONS

“Asking Interesting Research Questions,” UGROW Workshop, June 2023, June 2024.

“Connecting the Dots: Groups Have Shapes,” Department of Mathematics Colloquium, Oles Honchar Dnipro National University, Dnipro, Ukraine. November 3, 2022. (Virtual)

“(MC)²: Math Club as a Math Circle” with Marcos Lopez, Joint Mathematics Meetings, January 17, 2020.

“Distribution of Constant Terms of Irreducible Polynomials in $\mathbb{Z}_p[x]$,” with Michelle Knox, Marcos Lopez, Terry McDonald, and Patrick Mitchell, Joint Mathematics Meetings, January 17, 2020.

“Bad Math Clubs Borrow...” with Marcos Lopez, Mathematical Association of America Texas Section Meeting, Stephenville, TX, March 29, 2019.

“Handpicked Polygons,” East Texas Math Teachers’ Circle, Nacogdoches, TX, October 9, 2018.

“Finiteness Properties by way of Geometry,” R.W. Yeagy Colloquium, Stephen F. Austin State University, Nacogdoches, TX, October 9, 2018.

“Connecting Disciplines Using Science Fiction,” Mathematics Association of America MathFest, Denver, CO, August 3, 2018.

“I Like to Move It! I Like to Learn It!,” with Dr. Suzanne Lindt, Dr. Stacia Miller, and Dr. Dittika Gupta, Conference for the Advancement of Mathematics Teaching, Houston, TX, July 17, 2018.

“Teaching and Learning Statistics in the Middle Grades,” workshop at Region 9 Educational Service Center, Wichita Falls, TX, June 27, 2017.

“Can You Keep a Secret?” with Dr. Michelle Knox, workshop at Math, Science and U conference, Midwestern State University, November 11, 2017.

“How DVDs play when they are scratched: Teaching Binary” with Dr. Marcos Lopez, Texoma Regional Math and Science Conference, June 15, 2017.

“Counting Irreducible Polynomials with Prescribed Constant Term,” High-Performance Computing Seminar, Midwestern State University, May 5, 2017.

“Linking Math and English through *The Martian*,” Mathematical Association of America Texas Section Meeting, Commerce, TX, March 31, 2017.

“How to Tell an Orange from a Donut” workshop at Math, Science and U conference, Midwestern State University, November 14, 2015.

“The Farey Graph and Finiteness Properties of Special Linear Groups,” Midwestern State University, March 10, 2014.

“Connecting the Dots: Groups Have Shapes,” Hope College Undergraduate Colloquium, January 31, 2014.

PROFESSIONAL
SERVICE

August 2024– : Steering Committee member, MSU Department Chairs’ Circle

August 2021– December 2022, August 2024–: Chair, Mathematics Department, Midwestern State University

March 2023– : Co-director, Undergraduate Research Opportunities and Workshops (UGROW) summer undergraduate research program

September 2022– : Bolin Hall Renovation Steering Committee

January 2016– : Faculty Advisor (with Dr. Marcos Lopez), Midwestern State University Math Club

2024–2025: Member, University Tenure and Promotion Committee, Midwestern State University

January 2023–May 2023: Chair, Developmental Education Task Force

August 2021– December 2022: Affinity Group Facilitator, COPLAC PLAN initiative (funded by NSF ADVANCE program)

August 2020– December 2022: Core Curriculum Committee, Midwestern State University

May 2017– December 2022: Senator, Midwestern State University Faculty Senate

November 2016– December 2022: Chair, Program Assessment Committee for Linear and Abstract Algebra, Midwestern State University

August 2019– August 2021: Secretary, Midwestern State University Faculty Senate

August 2021–May 2021: Budget Oversight Committee, Midwestern State University

August 2019–May 2021: Midwestern State University Writing Council

March 2020, March 2021: Selection Committee, Midwestern State University Outstanding Student

Awards

June 2018–June 2020: Reader, AP Calculus Exam

February 2018–February 2021: Organizing committee for Texas/Oklahoma Regional Undergraduate Symposium

September 2016– September 2017: Campus Carry Implementation Committee, Midwestern State University

2015–2016: Member, Core Curriculum Assessment Committee for College Algebra, Midwestern State University

2015–2016: Chair, Core Curriculum Assessment Committee for Contemporary Mathematics, Midwestern State University

April 2015– August 2016: SOAR scholarship committee

Fall 2013: Science Day at the U– presented workshop for high school students, “The Mathematics of the Rubik’s Cube”

Fall 2013–Spring 2014: Chair, Graduate Student Advisory Committee, University of Utah

AWARDS

May 2021: Excellence in Teaching Award. McCoy College of Science, Mathematics, and Engineering, Midwestern State University

GRANTS

May 2023: Texas Higher Education Coordinating Board, Open Educational Resources Grant Program. \$12,500 to develop College Algebra curriculum to be made available through the coordinating board’s database of open educational resources.

November 2017: National Science Foundation, Division of Mathematical Sciences, Infrastructure Program. \$21,000 to fund the Texas/Oklahoma Regional Undergraduate Symposium for 2018, 2019, and 2020.

CONFERENCE AND WORKSHOP PARTICIPATION

April 2016– : Texas Section NExT professional development program for early-career faculty, including participation in workshops at Texas Section Meetings of the Mathematical Association of America and the Texas Undergraduate Mathematics Conference

July 2024: “Culturally Responsive and Cognitively Demanding Informal Mathematics Tasks,” American Institute of Mathematics, Pasadena, CA.

Summer 2017: Teaching and Learning Statistics in the Middle Grades, Texas Regional Collaborative

Summer 2013: Math Research Communities, Geometric Group Theory

Summer 2012: Park City Mathematics Institute, Graduate Summer School

SUPERVISION OF STUDENT RESEARCH

Fall 2018: Lazy Cops and Robbers on Graphs with Phillip Torres

Spring 2018: Cycling Decimals with Kameron Shrum

Spring 2019: Countdown with Shania Roberts

Spring 2020: Cognitive conflict with Dr. Dittika Gupta and Kelly Carpenter

August 2020–May 2022: “Multiple Realities in *Hamlet*,” MA thesis in English for Lisa Moore, committee member