Jesse Taylor

Angelo State University

phone: (325)486-5445
email: jesse.taylor at angelo.edu

Education

2008–2014 **PhD Mathematics**, *Louisiana State University*, Baton Rouge, LA.
Dissertation title: Selected Problems on Matroid Minors.

2008–2010 **MS Mathematics**, *Louisiana State University*, Baton Rouge, LA.

2003–2008 **BS Mathematics**, *Middle Tennessee State University*, Murfreesboro, TN.

Publications

Unavoidable minors for 2-connected 3-hypergraphs, (with Dennis Hall and Ashton Short*) [submitted].

On graphic matroid minors that guarantee their duals as minors, Advances in Applied Mathematics Volume 99, August 2018, pages 36-58.

On matroid minors that guarantee their duals as minors, Advances in Applied Mathematics Volume 71, October 2015, pages 14-33.

On two classes of nearly binary matroids, (with James Oxley) European Journal of Combinatorics Volume 36, February 2014, pages 251-260.

* - indicates an undergraduate co-author

Employment History

2019–Present **Director of the Faculty Learning Commons**, *Angelo State University*, San Angelo, TX.
The Faculty Learning Commons is a campus-wide organization dedicated to supporting and developing faculty in their role at teachers.

2020–Present **Associate Professor and Graduate Faculty Member**, *Angelo State University*, San Angelo, TX.

2014–2020 **Assistant Professor and Graduate Faculty Member**, *Angelo State University*, San Angelo, TX.

Spring 2012 **Graduate Research Assistant**, *Louisiana State University*, Baton Rouge, LA.

Summer 2011 **Graduate Mentor for MathCircle**, *Louisiana State University*, Baton Rouge, LA.
MathCircle is a 3-week summer enrichment program for motivated high-school students.

Summer 2009 and 2010 **Graduate Mentor for an LSU Research Experience for Undergraduates**, *Louisiana State University*, Baton Rouge, LA.

2008–2014 **Graduate Teaching Assistant**, *Louisiana State University*, Baton Rouge, LA.

Summer 2008 **Mathematics Instructor for Project GRAD Summer Institute**, *Pellissippi State Technical Community College*, Knoxville, TN.
Project GRAD is a non-profit organization whose primary goals are to provide academic support and a sense of intellectual community for disadvantaged pre-college students, particularly those from low-income households.

Awards

Spring 2020 Nominated by the Mathematics Department of ASU for the President's Award for Faculty Excellence in Service (was a top-5 seminfinalist)

Spring 2017 Nominated by the Mathematics Department of ASU for the President's Award for Faculty Excellence in Teaching

Spring 2014 Nominated by the Mathematics Department of LSU for the LSU Alumni Association Teaching Assistant Award

Fall 2013 Certificate of Teaching Excellence, LSU Mathematics Department

Spring 2013 Nominated by the Mathematics Department for the LSU Alumni Association Teaching Assistant Award

Fall 2012 David Oxley Senior Graduate Student Teaching Award, LSU Mathematics Department

Fall 2011 Certificate of Teaching Excellence, LSU Mathematics Department

Fall 2010 Certificate of Teaching Excellence, LSU Mathematics Department

Spring 2010 David Oxley Junior Graduate Student Teaching Award, LSU Mathematics Department

Teaching Experience

Except where otherwise noted teacher of record for math classes of 15-50 students.

· Created lesson plans and taught all classes. Held regular office hours for all classes. Except as otherwise noted below, created and graded all quizzes and tests in all classes.

· Online homework systems were implemented in several classes. Each of WebAssign, MyMathLab, and WeBWorK (an open educational resource) were used.

· *MATH 4391 at ASU*: Undergraduate research course consisting of 1-2 students. Largely reading and project based rather than traditional lecture and test delivery.

· *College Algebra at LSU*: Used MyMathLab, a web-based homework and testing software. For each section, lectured one hour per week and tutored in the LSU math lab for an additional three hours. Students were expected to attend one hour of class and spend three hours working in the lab each week.

· *Project GRAD*: Developed curriculum and lesson plans for the summer institute. Taught a diverse group of students with varying Mathematics backgrounds.

Spring 2020 **Graph Coloring - MATH 4091 Section 060**, *ASU*, co-taught.

Spring 2020 **Rainbow Coloring II - MATH 4091 Section 010**, *ASU*.

Spring 2020 **Calculus I - MATH 2413 Section 010 and 030**, *ASU*.

Fall 2019 **Graph Theory III - MATH 4091 Section 010**, *ASU*, co-taught.

Fall 2019 **Rainbow Coloring - MATH 4091 Section 020**, *ASU*.

Fall 2019 **Calculus I - MATH 2413 Section 030**, *ASU*.

Fall 2019 **Discrete Mathematics - MATH 2305 Section 010**, *ASU*.

Fall 2019 **Finite Mathematics I (online) - MATH 1324 Section D10**, *ASU*.

Spring 2019 **Linear Algebra - MATH 3301 Sections 010 and 020**, *ASU*.

Spring 2019 **Calculus II - MATH 2314 Section 030**, *ASU*.

Spring 2019 **Calculus I - MATH 2313 Section 040**, *ASU*.

Fall 2018 **Graph Theory II - MATH 4391 Section 010**, *ASU*, co-taught.

Fall 2018 **Linear Algebra - MATH 3301 Section 010**, *ASU*.

Fall 2018 **Calculus I - MATH 2313 Sections 010 and 020**, *ASU*.
Fall 2018 **Discrete Mathematics - MATH 2305 Section 010**, *ASU*.
Summer 2018 **Graph Theory for Educators (online) - MATH 6327 Section 010**, *ASU*.
Spring 2018 **Polymatriods and Hypergraphs III - MATH 4391 Section 020**, *ASU*, co-taught.
Spring 2018 **Statistics - MATH 3321 Section 010**, *ASU*.
Spring 2018 **Intro to Abstract Mathematics - MATH 3300 Section 010**, *ASU*.
Spring 2018 **Calculus II - MATH 2314 Section 030**, *ASU*.
Spring 2018 **Finite Mathematics I (online) - MATH 1324 Section D10**, *ASU*.
Fall 2017 **Polymatriods and Hypergraphs II - MATH 4391 Section 020**, *ASU*, co-taught.
Fall 2017 **Abstract Algebra II - MATH 4391 Section 030**, *ASU*.
Fall 2017 **Calculus II - MATH 2314 Sections 020 and 030**, *ASU*.
Fall 2017 **Calculus I - MATH 2313 Section 030**, *ASU*.
Fall 2017 **Finite Mathematics I (online) - MATH 1324 Section D10**, *ASU*.
Fall 2017 **The Seven Laws of Money - GS 1181 Section F30**, *ASU*.
Spring 2017 **Polymatriods and Hypergraphs - MATH 4391 Section 010**, *ASU*, co-taught.
Spring 2017 **Abstract Algebra - MATH 4301 Section 010**, *ASU*.
Spring 2017 **Statistics - MATH 3321 Section 010**, *ASU*.
Spring 2017 **Calculus I - MATH 2313 Section 030**, *ASU*.
Spring 2017 **Finite Mathematics I - MATH 1324 Section 060**, *ASU*.
Fall 2016 **Probability and Statistics - MATH 3307 Section 010**, *ASU*.
Fall 2016 **Calculus II - MATH 2314 Section 020**, *ASU*.
Fall 2016 **Contemporary Mathematics - MATH 1332 Section 040**, *ASU*.
Fall 2016 **Finite Mathematics I - MATH 1324 Sections 050 and 060**, *ASU*.
Fall 2016 **The Seven Laws of Money - GS 1181 Section F27**, *ASU*.
Summer 2016 **Graph Theory for Educators (online) - MATH 6327 Section 010**, *ASU*.
Spring 2016 **Special Topics: Graph Theory - MATH 4355 Section 010**, *ASU*.
Spring 2016 **Linear Algebra - MATH 3301 Section 010**, *ASU*.
Spring 2016 **Finite Mathematics I - MATH 1324 Sections 040 and 050**, *ASU*.
Fall 2015 **Abstract Algebra - MATH 4301 Section 010**, *ASU*.
Fall 2015 **Calculus II - MATH 2332 Section 020**, *ASU*.
Fall 2015 **Finite Mathematics I - MATH 1324 Sections 050 and 060**, *ASU*.
Fall 2015 **The Seven Laws of Money - GS 1181 Section F35**, *ASU*.
Summer 2015 **College Algebra - MATH 1302 Section 020**, *ASU*.
Summer 2015 **Contemporary Mathematics - MATH 1332 Section 010**, *ASU*.
Spring 2015 **Contemporary Mathematics - MATH 1332 Sections 040 and 050**, *ASU*.
Spring 2015 **Calculus I - MATH 2331 Section 030**, *ASU*.
Spring 2015 **Linear Algebra - MATH 3301 Section 010**, *ASU*.
Fall 2014 **Finite Mathematics I - MATH 1324 Sections 060 and 070**, *ASU*.
Fall 2014 **Calculus I - MATH 2331 Section 020**, *ASU*.
Fall 2014 **Probability and Statistics - MATH 3307 Section 010**, *ASU*.
Spring 2014 **Honors Calculus II - MATH 1553 Section 2**, *LSU*.
Fall 2013 **Honors Calculus I - MATH 1551 Section 4**, *LSU*.

Fall 2012 **College Algebra - MATH 1021 Sections 27, 31, 32, and 33**, *LSU*.

Fall 2011 **Calculus I - MATH 1550 Section 22**, *LSU*.

Spring 2011 **Calculus II - MATH 1552 Section 18**, *LSU*.

Fall 2010 **Calculus I - MATH 1550 Section 22**, *LSU*.

Spring 2010 **Calculus I - MATH 1550 Section 9**, *LSU*.

Fall 2009 **College Algebra - MATH 1021 Section 30**, *LSU*.

2009 **Tutor and Lab Manager**, *LSU's Pleasant Hall Math Lab*, Tutored subjects: algebra, trigonometry, and pre-calculus.

Summer 2008 **High School Mathematics**, *Project GRAD at Pellissippi State Technical Community College, Knoxville, TN*.

Undergraduate Research Projects and Grants

Spring 2020 Co-advisor of a semester-long Faculty Sponsored Undergraduate Research grant for Zach Nadeau at ASU. Zach presented on his research at the Texas Oklahoma Regional Undergraduate Symposium at Cameron University in Lawton, OK.

November 2019 Co-advisor for the talk "A Computational Approach to the Earth-Moon Problem" given by Zach Nadeau at the Gulf Coast Undergraduate Research Symposium at Rice University in Houston, TX.

2019-2020 Advisor of a year-long Faculty Sponsored Undergraduate Research grant for Matthew Mizell at ASU. Matthew presented on his research at the Texas Oklahoma Regional Undergraduate Symposium at Cameron University in Lawton, OK.

April 2019 Co-advisor for the poster presentation "Progress on the Earth-Moon problem for Graphs" given by Zach Nadeau at the ASU Undergraduate Research Symposium.

February 2019 Co-advisor for the talk "Progress on the Earth-Moon problem for Graphs" given by Zach Nadeau at the Texas Oklahoma Regional Undergraduate Symposium at Southern Nazarene University in Bethany, OK.

2017-2018 Co-advisor of a year-long Faculty Sponsored Undergraduate Research grant for Ashton Short at ASU. Ashton presented on his research at the Texas Oklahoma Regional Undergraduate Symposium at Midwestern State University in Wichita Falls, TX, in February 2018.

April 2018 Co-advisor for the poster presentation "Unavoidable Minors for 3-Hypergraphs" given by Ashton Short at the ASU Undergraduate Research Symposium.

April 2017 Co-advisor for the poster presentation "Examining Special Elements in Hypergraphs" given by Ashton Short at the ASU Undergraduate Research Symposium.

Summer 2009 and 2010 Graduate Mentor for an LSU Research Experience for Undergraduates.

Original Research Courses - MATH 4091 and 4391 at ASU

Spring 2020 **Graph Coloring**, This course looked at the Earth-Moon problem. The goal was to find a minimum coloring number for a pair of planar graphs.
Student(s): Zach Nadeau

Spring 2020 **Rainbow Coloring II**, This course looked at the problem of Rainbow Coloring in Graph Theory. The goal was to determine the rainbow-connection number and strong-rainbow-connection number for wheel-like graphs..
Student(s): Matthew Mizell

Fall 2019 **Graph Theory III**, This course looked at the Earth-Moon problem. The goal was to find a minimum coloring number for a pair of planar graphs. This semester was specifically devoted to using computer programming to help come up with a solution..
Student(s): Zach Nadeau

Fall 2019 **Rainbow Coloring**, This course looked at the problem of Rainbow Coloring in Graph Theory. The goal was to understand the current literature and pose a research question for the Spring 2020 semester..
Student(s): Matthew Mizell

Fall 2018 **Graph Theory II**, This course looked at the Earth-Moon problem. The goal was to find a minimum coloring number for a pair of planar graphs.
Student(s): Zach Nadeau

Spring 2018 **Hypergraphs and Polymatroids III**, This course investigated the unavoidable minors of sufficiently large 3-hypergraphs as a multi-semester research project.
Student(s): Ashton Short

Fall 2017 **Hypergraphs and Polymatroids II**, This course investigated the unavoidable minors of sufficiently large 3-hypergraphs as a multi-semester research project.
Student(s): Ashton Short

Grants

July 2020 **Texas Higher Education Coordinating Board (THECB) OER Development Grant**, *Role: PI*, Offered by the THECB, Amount: $22,137.
under consideration

September 2019 **Hispanic Serving Institution Grant**, *Role: Senior Personnel*, Offered by the National Science Foundation, Amount: $2.5 million.
The grant was not awarded

January 2019 **Active Learning Center Grant**, *Role: Primary PI*, Offered by Steelcase Education, Amount: $67,000.
The grant was not awarded

Conference Presentations

April 2018 **On graphic matroid minors that guarantee their duals as minors**, *AMS Southeastern Sectional meeting at Vanderbilt University*, Invited speaker in the Matroids and Related Structures Special Session.

September 2017 **On graphic matroid minors that guarantee their duals as minors**, *AMS Central Sectional meeting at the University of North Texas*, Invited speaker in the Generalizations of Graph Theory Special Session.

March 2015 **On matroid minors that guarantee their duals as minors**, *46th Southeastern International Conference on Combinatorics, Graph Theory, and Computing at Florida Atlantic University*, Invited speaker in the Matroid Theory Special Session.

January 2015 **Matroids in which all circuits are large**, *AMS-MAA Joint Mathematics Meetings in San Antonio, TX*.

January 2014 **On matroid minors that guarantee their duals as minors**, *AMS-MAA Joint Mathematics Meetings in Baltimore, MD*.

November 2013 **On matroid minors that guarantee their duals as minors**, *2nd Annual Mississippi Discrete Mathematics Workshop*, Invited speaker.

May 2013 **On matroids in which all circuits are large**, *26th Cumberland Conference on Combinatorics, Graph Theory, and Computing at Middle Tennessee State University*, Invited speaker.

August 2012 **Nearly binary matroids**, *Third Workshop on Graphs and Matroids in Maastricht, Netherlands*.

May 2012 **Nearly binary matroids (poster)**, *Conference on Graph Theory at Georgia Tech in honor of Robin Thomas in Atlanta, GA*.

March 2012 **Nearly binary matroids**, *AMS Eastern Sectional Meeting at George Washington University*, Invited speaker in the Matroid Theory Special Session.

Departmental Talks

September 2019 **An introduction to the game Sprouts**, *MAA Student Group*, ASU.

April 2018 **The Hadwiger-Nelson Problem: who knew coloring was hard?**, *MAA Student Group*, ASU.

October 2017 **Making supplemental videos and using YouTube to host them**, *Math department teaching seminar*, ASU.

March 2016 **Mathemagic: Pattern Recognition**, *MAA Student Group*, ASU.

May 2015 **The Hadwiger-Nelson Conjecture: A really hard problem for kindergarteners**, *Pi Mu Epsilon inductees*, ASU.

October 2014 **Mathematics in the movie Good Will Hunting**, *MAA Student Group*, ASU.

August 2013 **Introduction to Matroid Theory**, *Mathematics Graduate Orientation Program*, LSU.

March 2012 **Nearly Binary Matroids**, *Combinatorics Seminar*, LSU.

November 2011 **Introduction to Graph Theory and Matroid Theory**, *Math Club*, LSU.

August 2011 **Introduction to Matroid Theory**, *Mathematics Graduate Orientation Program*, LSU.

November 2009 **Nowhere-Zero Flows in Graphs**, *Math Club*, LSU.

November 2009 **Nowhere-Zero Flows in Graphs**, *Mathematics Graduate Orientation Program*, LSU.

Service and Training

2019-Present Served on the accreditation SACSCOC Committee 6 realting to faculty.

2019-Present Served as the Director of the Faculty Learning Commons at ASU.

2017-Present Served on the Faculty Learning Commons advisory council at ASU.

2017-Present Textbook coordinator for Math 1324.

2016-Present Faculty sponsor for the Texas Zeta chapter of the math honor's society Pi Mu Epsilon.

2020 Served on the Classroom Instructional Technology committee as part of ASU's response to COVID-19. Organized a Blackboard training module for webcams, tripods, and microphones, and made several tutorials videos in addition to regular meetings.

2019-2020 Served on the San Angelo community committee working towards a Center for Teaching and Learning as part of a partnership between ASU, Goodfellow Airforce Base, Howard Colllege, and SAISD. After demonstrating proof of concept during the 2019-2020 academic year, an MOU was signed by all parties in June 2020.

2019-2020 Completed the *Certificate of Teaching and Learning in Hispanic Serving Institutions* offered by ESCALA Educational Services.

2019-2020	Served as a mentor for Dr. Stephen Shields as part of the College of Science and Engineering's new faculty mentoring program at ASU.
July 2019	Co-organized a workshop on Student Engagement, Evolution, and Development at Angelo State University in San Angelo, TX.
2016-2019	Served on the Faculty Research Enhancement Grants Committee (FREP).
2016-2019	Served on the College Curriculum committee for the College of Science and Engineering.
2018-2019	Served as a mentor for Dr. Shafin Haque as part of the College of Science and Engineering's new faculty mentoring program at ASU.
2017	Served as chair of a hiring committee for two new math instructors.
2017-2018	Served on the Campus Safety and Security Committee.
'17-'18, '15-'16	Served on a hiring committee for a new math faculty member.
2017, 2015	Volunteer signature course lecturer for Experience ASU.
2016	Served on the committee for re-evaluating then tenure and promotion criteria for tenured and tenure-track faculty in the math department.
2017	Gonfalonier for the College of Science and Engineering at Spring Commencement.
2016	Served on the committee that completed the annual review for non-tenured faculty in the math department.
2016	Gonfalonier for the College of Arts and Sciences at Spring and Fall Commencement.
2015-2016	Served on the Traffic Appeals Committee at ASU.
2015	Volunteer faculty tutor for the School of Business' Math 1324 "Study Party."
2015	Served on the committee for re-working Math 1332.
2015	Complete training for the software Grades First.
2015	Completed Quality Matters training for building an online course at ASU.
2015	Served as a judge for the national undergraduate mathematics poster session at the AMS-MAA Joint Mathematics Meetings.
2014	Served as a mathematics department representative at the ASU event "Choosing a Major, Choosing a Career".
2014	Served on the Math 1333 Core Assessment Exam Committee at ASU.
2013	Co-founded the LSU Student Combinatorics Seminar.
2011–2014	Organized of the Combinatorics Seminar at LSU.
2011	Chaired the Mathematics Graduate Orientation Committee at LSU.
2010–2014	Member of the Mathematics Graduate Orientation Committee at LSU.
2010–2014	Member of the Student Colloquium Committee at LSU.

Workshops and Conferences Attended

November 2019	Gulf Coast Undergraduate Research Symposium at Rice University in Houston, TX.
August 2019	ESCALA workshop on Teaching and Learning in Hispanic Serving Institutions at Angelo State University in San Angelo, TX.
July 2019	San Angelo Teaching Foundation workshop on Student Engagement, Evolution, and Development at Angelo State University in San Angelo, TX.
July 2019	Oxley65, a conference celebrating James Oxley's contributions to matroid theory, at Louisiana State University in Baton Rouge, LA.

February 2019	14th Annual Texas Oklahoma Regional Undergraduate Symposium (TORUS) at Southern Nazarene University in Bethany, OK.
January 2019	Building Strong STEM Courses workshop in San Angelo, TX.
October 2018	Educate Texas: Mathematics and Manufacturing workshop in Abilene, TX.
February 2018	13th Annual Texas Oklahoma Regional Undergraduate Symposium (TORUS) at Midwestern State University in Witchita Falls, TX.
July 2017	2017 SiGMa workshop on Structure in Graphs and Matroids at the University of Waterloo in Waterloo, Canada.
October 2015	West Texas Assessment Conference at Angelo State University in San Angelo, TX.
October 2014	West Texas Assessment Conference at Texas Tech University in Lubbock, TX.
March 2013	AMS Southeastern Sectional Meeting at The University of Mississippi in Oxford, MS.
January 2011	AMS-MAA Joint Mathematics Meetings in New Orleans, LA.
May 2010	23rd Cumberland Conference on Combinatorics, Graph Theory, and Computing at the University of Mississippi in Oxford, MS.
January 2010	AMS-MAA Joint Mathematics Meetings in San Francisco, CA.

Research Interests

Matroid Theory, Graph Theory, Combinatorics