JEFFREY M. FORD
Curriculum Vitae

Department of Mathematics, Computer Science, and Statistics
324 Olin Hall
Gustavus Adolphus College
St. Peter, MN 56082

jford.org
jford@gustavus.edu
office: (507) 933-7476
cellular: (612) 387-2521

Education

Ph.D., Mathematics, Auburn University 2017
Dissertation: "Measure-preserving Dynamical Systems on $\mathbb{R}^3$ with all Trajectories Bounded."
Advisor: Dr. Krystyna Kuperberg

M.A., Mathematics, Minnesota State University-Mankato 2011
Thesis: "A Duality Theory for the Algebraic Invariants of Substitution Tiling Spaces"
Advisor: Dr. Brian Martensen

B.A., Geology, Gustavus Adolphus College 2002

Employment

Visiting Assistant Professor, Department of Mathematics, Computer Science, & Statistics 2016–Present
Gustavus Adolphus College

Instructor, Department of Mathematics & Statistics 2011–2016
Minnesota State University Mankato

Adjunct Faculty, Rasmussen College, Mankato, MN 2011

Teaching Experience

Courses Taught at Gustavus Adolphus College

• MCS 353 - Continuous Dynamical Systems	Spring 2018
• MCS 332 - Topology	January 2019
• MCS 256 - Discrete Calculus	Spring 2017, Spring 2018, Spring 2019
• MCS 221 - Linear Algebra	Fall 2016, Fall 2017, Spring 2018
• MCS 177 - Introduction to Computer Science Lab	Fall 2017, Spring 2018, Fall 2018, Spring 2019
• MCS 125 - Tilings and Tessellations	January 2017
• MCS 122 - Calculus II	Fall 2016
• MCS 121 - Calculus I	Fall 2016, Fall 2017, Fall 2018
• MCS 115 - Nature of Mathematics	Spring 2017, Fall 2018, Spring 2019

Courses Taught at Minnesota State University - Mankato

• MATH 316 - Intermediate Analysis	Spring 2014, Spring 2015, Spring 2016
• MATH 290 - Foundations of Mathematics	Fall 2015
• MATH 201 - Mathematics for Elementary Education	Spring 2013
• MATH 127 - Calculus II for Engineers	Fall 2014, Fall 2015, Fall 2016
• MATH 122 - Calculus II	Fall 2015, Fall 2016
• MATH 121 - Calculus I	Fall 2012, Spring 2015, Spring 2016
• MATH 112 - College Algebra	Fall 2010, Spring 2011
• MATH 110 - Perspectives in Mathematics	Fall 2011, Fall 2013, Fall 2016
• MATH 098 - Intermediate Algebra	Fall 2011 - Spring 2014
• MATH 096 - Summer Bridge Mathematics	Summer 2012, Summer 2013

Courses Taught at Auburn University

• MATH 1623 - Calculus II Online	Fall 2016
• MATH 1123 - Pre-Calculus Algebra Online	Fall 2015, Fall 2016
• MATH 1120 - Pre-Calculus Algebra	Summer 2016

- MATH 1003 - College Algebra Online   Spring 2015, Fall 2015, Fall 2016, Spring 2017

Courses Taught at Rasmussen College

- MATH G233 - College Algebra   Summer 2011, Fall 2011

Teaching Assistant Appointments at Auburn University

- Grader - MATH 5200/6200 - Real Analysis   Fall 2014
- Grader - MATH 2650 - Linear Differential Equations   Fall 2013, Spring 2014
- Online Course Designer - MATH 1003/1123/1133   Fall 2014, Spring 2015

Teaching Assistant Appointments at Minnesota State University - Mankato

- MATH 098 - Intermediate Algebra   Fall 2009, Spring 2010

Research

Area: Topological Dynamics and Mathematics Education

Papers

"Blending Team-based Learning and Mastery Grading in the Calculus Classroom."
   Under review as of October 2018

"A Volume-preserving Dynamical System on $\mathbb{R}^3$ with all Trajectories Bounded"
   Under review as of May 2018

"A measured *PL* foliation of $\mathbb{R}^3$ with all leaves contained in bounded sets." (with K. Kuperberg)
   In preparation

"Investigating Algebraic Procedures using Discussion and Writing" (with J. Harper)
   Research and Teaching in Developmental Education **Vol. 28** no. 2, (April 2012)

Conference Presentations

"Blending Team-based learning and Mastery grading in Calculus I."   August 2018
   MAA MathFest Poster Session, Denver, CO

"Getting Started with Team-based learning." (with B. Reimann)   April 2017
   Celebration of Creative Inquiry, Gustavus Adolphus College, St. Peter, MN

"A volume-preserving dynamical system on $\mathbb{R}^3$ with all trajectories bounded."   March 2017
   51st Spring Topology and Dynamical Systems Conference, New Jersey City, NJ

"Visualizing the Wilson Plug"   June 2015
   30th Summer Conference on Topology and it's Applications, Galway, Ireland

"IBL teaching methods in an advanced class on Vietoris Homology" (with F. Sturm)   June 2014
   Legacy of R.L. Moore Conference, Denver, CO

"Maverick Comprehensive Learning Analytics and Support System (MavCLASS): Deep, Real World Learning Analytics to Enhance Student Success" (with J. Higdon-Topaz)   March 2014
   Annual Gateway Course Experience Conference, Indianapolis, IN

"Pre-algebra skills as a means of assessing readiness of developmental algebra students" (with L. Stepan) September 2013
   MNADE Fall Conference, Walker, MN

"Duality for substitution tiling spaces"   April 2011
   Graduate Research Conference, Minnesota State University-Mankato

"Investigating Algebraic Procedures with Class Discussions and Student Journaling" (with J. Harper)   September 2010
   MNADE Fall Conference, Grand Rapids, MN

Invited Talks

"Standards-Based Grading: Tools and Tips for Successful Implementation" Project NExT Workshop, Joint Mathematics Meeting	January 2019

"Tilings and Tiling Spaces."
    Department of Mathematics, Computer Science and Statistics Seminar, Gustavus Adolphus
    College.
	October 2018

"Blending Team-based learning and Mastery grading in Calculus I." Mathematics Department Seminar, Brandeis University	September 2018
"A non-singular measured-foliation on $\mathbb{R}^3$, with all leaves contained in bounded sets." Continuum Theory Seminar, Auburn University.	October 2017

"Volume-preserving dynamical systems and related foliations."
    Department of Mathematics, Computer Science and Statistics Seminar, Gustavus Adolphus
    College.
	September 2017

"Counting Nimbers."
    Department of Mathematics, Computer Science and Statistics Seminar, Gustavus Adolphus
    College.
	September 2016

"An introduction to continuum theory."
    Given over 4 weeks at the Department of Mathematics and Statistics Graduate Student
    Colloquium, Minnesota State University - Mankato.
	January 2014

"An introduction to topological invariants."
    Department of Mathematics and Statistics Graduate Student Colloquium, Minnesota State
    University - Mankato.
	November 2013

"Topology of tiling spaces, a semester seminar" Department of Mathematics and Statistics, Minnesota State University - Mankato.	Spring 2012

"Applications of wavelets to coastline modeling."
    Department of Mathematics and Statistics Analysis Seminar, Minnesota State University -
    Mankato.
	October 2009

Presented yearly talks on learning LaTeX for undergraduate and graduate students while at Minnesota State University-Mankato.   2009–2016

Student Supervision *Undergraduate research project with John Vanstrum, collaborating with Dr. Dan Moos, Education Department, Gustavus Adolphus College*   Spring 2019
    Project studied the effect of active learning on improving student self-efficacy, and it's
    relationship to math anxiety.

Undergraduate research project with Charlie Moe   Spring 2018-Spring 2019
    Project studied volume-preserving flows with bounded trajectories in $\mathbb{R}^4$ and $\mathbb{R}^5$.

Undergraduate research project with Jacob Fry   Spring 2017 - Fall 2017
    Project studies consequences of the acceptance and non-acceptance of the Axiom of
    Choice.

Undergraduate research project with Leah Lumley and Sarah Painter   Spring 2012
    Project studied mathematical models of musical arrangements.

Undergraduate research project with Jessica Niesen, collaborating with Dr. Kristie Campana, Psychology Department, MSU - Mankato   Spring 2012
    Project studied mathematical models of relationships between fame and other characteristics of popular musicians.

Graduate research project with Linsday Stepan   2011-2012
    Project involved investigating mastery of pre-algebra skills in incoming developmental algebra students.

Thesis committee membership for the following students:

- Rebecca Targove, M.A. Mathematics, Minnesota State University, Mankato, Spring 2013
- Glenn Trussel, M.S. Psychology, Minnesota State University, Mankato, Spring 2015
- Brittany Proethe, M.S. Psychology, Minnesota State University, Mankato, Spring 2016

Professional Development and Service

Program Assessment Liason   2016-Present
   Mathematics, Computer Science, & Statistics Department, Gustavus Adolphus College.

Student Chaperone and Executive Committee Representative   2016-Present
   Midstates Consortium for Mathematics and Science.

New Faculty Orientation Tour Guide   2017-2018
   Gustavus Adolphus College

Organizer   2016-2017
   Team-Based Learning Teaching Circle, Gustavus Adolphus College.

Advisor   2018
   Mathematics, Computer Science, & Statistics Club, Gustavus Adolphus College.

Chair   2013-2016
   Assessment Committee, Mathematics & Statistics Department, Minnesota State University - Mankato.

Organizer   2013-2016
   Graduate Colloquium.   Graduate student Seminar, held weekly at Minnesota State
   University-Mankato.

Organizer   July 25-28 2012
   Summer Conference on Topology and its Applications.   Minnesota State University-
   Mankato.

Organizer   2011-2012
   Mankato Area Math Circle for Students. Sponsored by MSRI-NCMC, held at Minnesota
   State University-Mankato.

Organizer   November 12, 2011
   Julia Robinson Mathematics Festival.   Sponsored by MSRI, held at Minnesota State
   University-Mankato.

Volunteer instructor   2009-2011
   GRE mathematics preparatory course, Minnesota State University-Mankato.

Honors and Awards

Nominated for the Provosts Award for Teaching Excellence by a Non-tenure Track Faculty Member, Gustavus Adolphus College   2018

Nominated for the Innovative Teaching Award, Gustavus Adolphus College   2017

Graduate Teaching Assistantship, Auburn University   2013-2017

Dr. Ben Fitzpatrick, Jr. Graduate Fellowship in Topology, Auburn University   2016

Awarded Research Reassigned Time (Course release from 4 credits of teaching)   Spring 2015
College of Science, Engineering, and Technology, Minnesota State University Mankato

Outstanding Service Award, Academic and Student Affairs Division, Minnesota State University Mankato, 2011-2012

Awarded Course Development Reassigned Time (Course release from 3 credits of Spring teaching)   Spring 2012
College Access Program, Minnesota State University Mankato

Graduate Teaching Assistantship, Minnesota State University - Mankato   2009-2011

Presidential Scholarship Award, Gustavus Adolphus College	1998-2002
Partners in Scholarship Award, Gustavus Adolphus College	1998-2002