

CURRICULUM VITAE
DR. STEPHEN J. GRAVES

Department of Mathematics
The University of Texas at Tyler
Tyler, TX 75799
(903) 565-5679
sgraves@uttyler.edu

Education

- 2009 Ph.D. **Syracuse University**, Mathematics
Thesis Advisor: Mark Watkins
Dissertation: *Growth of Tessellations*
Also awarded *Certificate in University Teaching*.
- 2005 M.S. **Syracuse University**, Mathematics.
- 2000 B.S. **SUNY Plattsburgh**, Plattsburgh, NY, Mathematics and Computer Science.

Research Interests

Graph theory; analytic and enumerative combinatorics; growth rates and symmetries of tessellations; chemical graph theory and fullerenes.

Publications

Articles

- 2016 *Vertex Minimal Graphs with Dihedral Symmetry*
(with C. Graves and L.-K. Lauderdale), Disc. Math., submitted April 2016.
- 2015 *Growth of Face-Homogeneous Tessellations* (with M. Watkins),
Ars Math. Contemp., submitted June 2015.
- 2015 *Smallest Graphs with Given Generalized Quaternion Automorphism Group*
(with C. Graves and L.-K. Lauderdale), J. Graph Theory, submitted March 2015.
- 2014 *Counting symmetric and near-symmetric fullerene patches* (with C. Graves).
J. Math. Chem., online July 2014. DOI 10.1007/s10910-014-0393-2.
- 2013 *Fullerene Patches II* (with J. Graver and C. Graves).
Ars Math. Contemp. 7 (2014) 405 – 421.
- 2010 *Tessellations with arbitrary growth rates*.
Discrete Mathematics (2010) vol. 310 (17-18) pp. 2435 – 2439.
- 2008 *Growth of Edge-Homogeneous Tessellations* (with T. Pisanski and M. Watkins).
SIAM J. Discrete Math. 23, 1(2008), pp. 1 – 18.

Textbooks

- 2016 *Algorithms in Applied Mathematics*, electronically self-published.

Presentations and Talks

- 2015 Apr. Spring Meeting of the Texas Section MAA, San Antonio, TX.
"Smallest Graphs with Given Generalized Quaternion Automorphism Group."
(joint work presented by L.-K. Lauderdale).
- 2014 Apr. Teaching Moments Workshop, UT Tyler, "Your Partner's Question."
- 2013 Apr. CombinaTexas 2013, University of Houston Downtown, Houston, TX
"Counting Fullerene Patches."
- 2013 Mar. UT Tyler Math Club: "The Calculus Wars: A Story of the First Great
Mathematical Scandal."
- 2012 Apr. CombinaTexas 2012, Southwestern University, Georgetown, TX
"Interiors of Fullerene Patches."
- 2012 Apr. UT Tyler Math Club: "I Demand a Recount! Voting and the
Mathematics of Social Choice."
- 2010 Oct. 1062nd Meeting of the American Mathematical Society, Special Session on
Graphs Embedded in Surfaces and Their Symmetries, Syracuse, NY:
"Tessellations with Arbitrary Growth Rates."
- 2010 Sept. Stephen F. Austin State University Department of Mathematics Colloquium,
Nacogdoches, TX: "Tessellations with Arbitrary Growth Rates."
- 2010 Jan. UT Tyler Math Club: "The Calculus Wars: A Story of the First Great
Mathematical Scandal."
- 2007 June 6th Slovenian International Conference on Graph Theory, Bled, Slovenia:
"Exponential Growth of Homogeneous Maps."
- 2007 Mar. 33rd Annual New York State Regional Graduate Mathematics Conference,
Syracuse, NY: "Balance of Tilings."
- 2006 Oct. Association of Mathematics Teachers of New York State (AMTNYS) Conference,
Saratoga Springs, NY: "Several Surprising Probabilities," with J. Graver,
C. Graves, and L. Lardy.
- 2006 Aug. Syracuse City School District 10-hour In-Service Workshop: "Writing Good
Problems and Rubrics," with C. Graves.

Research-Related Experience**Mentor, Research Experience for Undergraduates (REU) Site at UT Tyler**

- Senior Personnel (2014 – 2016) on National Science Foundation award #DMS-1359101.
- Summer 2016: Mentored three students from various colleges on an 8-week research project in extremal graph theory. Results under preparation for submission to the Arxiv.
- Summer 2015: Mentored three students from various colleges on an 8-week research project in extremal graph theory. Results under preparation for submission to a major journal in graph theory.
- Summer 2014: Mentored three students from various colleges on an 8-week research project in chemical graph theory.

Faculty Research Grant, Summer 2011, UT Tyler.

Teaching Experience

The University of Texas at Tyler

Assistant Professor, 2009 – 2015

Associate Professor, 2015 – Present

Courses Taught:

MATH 1324 - Mathematics for Business and Economics I
MATH 1342 - Statistics I
MATH 1343 - Statistics II
MATH 2330 - Discrete Mathematics
MATH 2413 - Calculus I
MATH 2414 - Calculus II
MATH 3203 - Matrix Methods
MATH 3305 - Ordinary Differential Equations
MATH 3336 - Abstract Algebra I
MATH 3351 - Probability and Statistics for Engineers
MATH 3365 - Geometric Systems
MATH 3380 - Algorithms in Applied Mathematics
MATH 3404 - Multivariate Calculus
MATH 3425 - Foundations of Mathematics
MATH 4160 - Senior Seminar I
MATH 4336 - Abstract Algebra II
MATH 4342 - Complex Analysis
MATH 4350 - Theory of Probability
MATH 4380 - Numerical Analysis and Modeling
MATH 5390 - Topics in Structural Graph Theory
MATH 5391 - Enumerative Combinatorics via *generatingfunctionology*

Teaching Experience (continued)

Syracuse University, Graduate Teaching Associate; Fall 2007 – Spring 2009.

Instructor of Record: Life Sciences Calculus II, Elementary Probability and Statistics, Calculus II

Co-Instructor: Elements of Modern Mathematics.

Syracuse University, Graduate Teaching Assistant: Fall 2003 – Spring 2006.

Instructor of Record: Calculus II, Calculus III, Life Sciences Calculus I.

Recitation Instructor: Business Calculus.

Grader: Calculus I, Foundations of Calculus.

Syracuse University, SummerStart Instructor: Summer 2003, 2004.

Instructor of Record: Precalculus, Calculus I.

Teaching-Related Experience**Presenter, Teaching Moments Workshop**

- Gave a 5-minute minipresentation on a single method of effective teaching, called “Your Partner’s Question,” a modified approach to the think-pair-share strategy.

Participant, Inquiry Based Learning Workshop

- A two-day workshop organized by the Inquiry Based Learning (IBL) Project at the University of Texas at Austin. The goal of IBL in Mathematics is to transform students from receivers of mathematical concepts into producers of mathematical concepts. Workshop focused on actual implementation of IBL techniques in the classroom and was open only to Mathematics faculty of the UT System.

Fellow, Texas Project NExT

- Project NExT is a program sponsored by the Mathematical Association of America (MAA) for new and recent graduates with doctorates in the mathematical sciences who are interested in improving the teaching and understanding of undergraduate mathematics. At the national level, Project NExT provides workshops and a faculty network to share ideas and concepts in teaching and assessing college students. The Texas Section of the MAA offers Project NExT regional workshops during the annual Spring Meeting and a special retreat during the fall semester, held concurrently with the Texas Undergraduate Mathematics Conference.

Course Curriculum Planner and Co-Instructor, “Elements of Modern Mathematics.”

- Redesigned established course curriculum (with J. Graver and T. Perkins) in order to allow large lectures (120+ students) to each be taught by a team of three instructors.
- Configured **WebAssign** online homework system for use by 400+ students.
- Acted as one of three primary instructors to the large lectures, teaching 2 of 6 chapters covered in the course.

New York State Department of Education BAMA Grant, Graduate Administrative Assistant, Sum. 2006 – Sum. 2007.

- Designed (with J. Graver and L. Lardy) numerous seminars and workshops aimed at improving the mathematical content knowledge of in-service middle- and high-school teachers in the Syracuse City School District.

- Led a 10-hour summer workshop for K-8 teachers, “Writing Good Problems and Rubrics,” with C. Graves, aiding teachers in writing and grading coherent, correctly leveled questions for their students.
- Aided in the compilation of a question bank of 1500+ problems based upon questions from New York State standardized tests; the question bank is used for pre-testing and post-testing of students.

Future Professoriate Program (FPP), member, 2006 – 2009.

- Attended professional development seminars.
- Had teaching formally evaluated by faculty mentor.
- Met with a faculty mentor to discuss teaching strategies.
- Prepared teaching portfolio including student evaluations.

Honors and Awards

UT Tyler Center for Teaching Excellence and Innovation Level 1 & 2 Certification

Participated in a two-year long series of professional development workshops, web courses, and seminars designed to promote effective teaching, especially using new digital methods for instruction.

Texas Project NExT Fellow, 2009 – 2011.

Donald Kibbey Prize, Department of Mathematics, Syracuse University, March 2009.

The Donald Kibbey Prize for outstanding work in mathematics is awarded, usually annually, for excellence in the Ph.D. program and/or for an excellent doctoral dissertation.

Certificate in University Teaching, May 2009.

A recognition awarded jointly by the Graduate School and the Mathematics Department of Syracuse University to those who engage in an independent teaching experience and document their teaching credentials through the preparation of a teaching portfolio.

College of Arts and Sciences Summer Fellowship, Syracuse University, 2007 and 2008.

Conferences Attended

- 2015 *Texas Undergraduate Mathematics Conference*, Tyler, TX.
 2014 *Teaching Moments*, Tyler, TX.
 2014 *Joint Mathematics Meetings*, Baltimore, MD.
 2013 *CombinaTexas 2013*, Houston, TX.
 2012 *CombinaTexas 2012*, Georgetown, TX.
 2011 *Texas Undergraduate Mathematics Conference*, Tyler, TX.
 2011 *MAA Texas Section Spring Meeting*, Tyler, TX.
 2010 *1062nd Meeting of the American Mathematical Society*, Syracuse, NY.
 2010 *MAA Texas Section Spring Meeting*, Abilene, TX.
 2009 *5th Annual Texas Undergraduate Mathematics Conference*, Huntsville, TX.
 2009 *MAA Seaway Section Meeting*, Rochester, NY.
 2007 *MAA Seaway Section Meeting*, Oneonta, NY.
 2007 *Joint Meetings of the AMS and MAA*, New Orleans, LA.
 2006 *AMTNYS Annual Conference*, Saratoga Springs, NY.
 2006 *Discrete Mathematics Day*, Skidmore College, Saratoga Springs, NY.
 2003 – 2009 *29th – 35th Annual New York State Regional Graduate Mathematics Conferences*, Syracuse, NY.

Service Experience

Department of Mathematics, UT Tyler

- Tenure & Promotion Committee: Member 2015 – Present.
 Curriculum Committee: Member 2011 – 2012, 2013 – 2014.
 Graduate Committee: Member 2010 – 2011, 2012 – 2013.
 Hiring Committee: Member 2010 – 2011, 2013 – 2014.
 High School Math Comp.: Member of organizing committee 2009 – 2012.
 Technology Committee: Member 2009 – 2011.
 Chair 2011 – Present.
 Webmaster: 2009 – 2016.

College of Arts and Sciences, UT Tyler

- Commencement Committee Member 2011 – 2013
 Chair 2013 – Present
 Curriculum Committee Member 2012 – 2014

University Committees, UT Tyler

- IT Steering Committee: 2016 – Present.
 Honors College Steering Committee 2016 – Present.

Syracuse University

- Graduate Student Org.: Vice-President, 2007–2008.
 Recording Secretary, 2006 – 2007
 Math Graduate Org.: Treasurer, 2005 – 2007
 President, 2004–2005; organized 30th Annual New York State
 Regional Graduate Mathematics Conference.
 University Senate: Senator, 2005 – 2006; Computing Services Subcommittee.