

CURRICULUM VITA**Sherry L Scarborough**

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DEGREES

Ph.D.	College Mathematics Education	Texas A&M University	2001
M.S.	Mathematics	Purdue University	1994
B.S.	Plant and Soil Science	Texas A&M University	1980

IN THE PROFESSION

2008–present	Mathematics Senior Lecturer, Texas A&M University
2002–2006, 2010	Mathematics Text Reviewer for various publishers
2000–2008	Mathematics Lecturer, Texas A&M University
2002–2008	Mathematics Consultant, Educational Testing Services
2007	Created Streaming Videos for Thomson Higher Education
1987–2006	College and High School Mathematics Tutor
1999–2000	Mathematics Instructor, Blinn College
1998–2000	Educational Curriculum and Instruction (EDCI) Instructor, Texas A&M University
1998–1999	Substitute Teacher, College Station Independent School District
1998	Graduate Research Assistant for the Implementation Grant involving collaboration of Texas A&M University, Blinn College, Brazos Valley Museum of Natural History, and Bryan Independent School District
1997	EDCI Teaching Assistant, Texas A&M University
1994–1997	Mathematics Graduate Teaching Assistant, Texas A&M University
1996	Summer Mathematics Instructor, Texas A&M University
1992–1994	Mathematics Instructor, Purdue University
1987–1993	College Mathematics Tutor, Purdue University

1984–1986 Chemist and Technical Services, Gem Products

1978–1984 Seed Technologist and Residue Coordinator, Gustafson, Inc.

RESEARCH/PUBLICATIONS

Authored and published hundreds of streaming videos for web-based mathematical resources for internet learning from 2005 to the present.

Scarborough, Sherry, *PreCalc Chronicles*, 2010, is a 16-week weekly newsletter for TAMU Precalculus students.

Scarborough, Sherry, *A Snapshot Look at Cooperative Learning and Traditional Format in the Recitation Component of a College Precalculus Course*, 2001.

TEACHING

COURSES AT TEXAS A&M: MATHEMATICS

- Structure of Mathematics II: <http://www.math.tamu.edu/~sherry.scarborough/366topics.html>
- Structure of Mathematics I (Have served as the Week-In-Review Coordinator): <http://www.math.tamu.edu/~sherry.scarborough/365topics.html>
- Functions, Trigonometry, and Linear Systems (Have served as the Course and Week-In-Review Coordinator): <http://www.math.tamu.edu/~sherry.scarborough/150topics.html>
- Business Mathematics II
- Business Mathematics I (Have served as the Course Coordinator): <http://www.math.tamu.edu/~sherry.scarborough/141topics.html>
- Mathematical Concepts – Calculus (Have served as Course and Week-In-Review Coordinator): <http://www.math.tamu.edu/~sherry.scarborough/131topics.html>
- Algebra

COURSES AT TEXAS A&M: EDUCATIONAL CURRICULUM AND INSTRUCTION

- Mathematics in Middle and Senior Schools - Methods

COURSES AT BLINN COLLEGE: MATHEMATICS

- Calculus I
- College Algebra
- Mathematics Analysis I

COURSES AT PURDUE: MATHEMATICS

- Algebra and Trigonometry
- Introduction to Algebra

CONTINUING EDUCATION

- “Conflicts between Mathematics Educators and Mathematicians, and Ways to Overcome Them” by Wilfried Schmid, 2011
- “The History of Infinity - In Brief” by Don Allen, 2011
- “Collaborative Institutional Training Initiative Human Research Curriculum” Certification refresher course, completed December 2010
- “Calculus Problems before Calculus” presentation by Michael Anshelevich, 2010
- “Inquiry Based Learning” presentation by Anna Spice, 2010
- “Math 167: For All Practical Purposes” presentation by Mila Mogilevsky, 2010
- “The Effect of STEM Project Based Learning on Student Learning and Achievement” presentation by Drs. Robert M. and Mary M. Capraro, 2010
- “Partitions and Generating Functions” presentation by Laura Matusевич, 2010
- “Shape of Space” presentation by Frank Sottile, 2010
- “Cast a Wide Net” Disability Training Network Summer Institute for the TAMU System, Grapevine, Texas, 2010
- “How to Enliven the Mathematics Classroom” presentation by James Stewart, 2010
- “Math Placement Exam” (Algebraic Diagnostic) presentation and discussion by Angie Allen, 2009
- “Collaborative Institutional Training Initiative Human Research Curriculum” Certification completed December 2008
- “How to Handle Those 'Uh - Oh' Situations: What do I do now?” by Student Counseling Service and the Employee Assistance Program, 2008
- “Catch the Wave: Access, Retention and Success for College Students with Disabilities,” Disability Training Network for the TAMU System, Galveston, Texas, 2008
- “WebAssign Training” by Jenn Whitfield, 2008
- “Unraveling the Mystery of N: Enhancing Students' Understanding of Limits Using Dynamic Sketches” by Beth L. Cory, Sam Houston State University, 2008
- “Math Update from the ESC” by Christy Lindsey, Secondary Mathematics Specialist, Region VI Education, 2008
- “TAMU's Center for Mathematics and Science Education” by Jane Schielack, Associate Dean for Assessment and PreK-12 Education, College of Science, 2008
- “Course Redesign for Finite Math (our Math 141) - Is it working?” by Janice Epstein and Jill Zarestky, 2008
- “Dynamic MathML and SVG Graphics” by Mike Pilant, 2008
- Attended the Large Class Teaching Symposium/Workshop provided by the Center for Teaching Excellence, 2004

CURRICULUM DEVELOPMENT

2005–present Created streaming videos for mathematics students. One type of streaming video provides supplemental teaching for various difficult mathematical concepts. Another type offers mathematics exam keys so students can learn from confirmation of correct answers as well as from their mistakes, and help them prepare for exams.

MATH 141 BUSINESS MATHEMATICS I STREAMING VIDEOS

- Math 141 Exam I Spring 2011
- Math 141 Exam II Spring 2011
- Math 141 Exam III Spring 2011
- Math 141 Exam I Spring 2009 Key
- Math 141 Exam II Spring 2009 Key
- Math 141 Exam III Spring 2009 Key
- Math 141 Exam I Fall 2008 Key
- Math 141 Exam II Fall 2008 Key
- Math 141 Exam III Fall 2008 Key
- Math 141 Exam I Spring 2008 Key
- Math 141 Exam II Spring 2008 Key
- Math 141 Exam III Spring 2008 Key
- Math 141 Exam I Spring 2007 Key
- Math 141 Exam II Spring 2007 Key
- Math 141 Exam III Spring 2007 Key
- Math 141 Exam I Fall 2006 Key
- Math 141 Exam II Fall 2006 Key
- Math 141 Exam III Fall 2006 Key

MATH 150 PRECALCULUS STREAMING VIDEOS

- How to Change a Repeating Decimal to a Quotient of Integers
- Properties of Real Numbers
- Order of Operations
- n th root of a to the n th Power
- Rationalizing Denominators
- Factor out a Common Base to the Lowest Power
- Complex Numbers
- Sign Charts and Inequalities
- How to Solve a Quadratic Equation by Factoring, by Using the Quadratic Formula, and by Completing the Square
- How to Solve Quadratic-Like Equations
- How to Solve Mixture Word-Problems
- How to Solve "Time Needed to Do a Job" Word-Problems
- Find and Simplify the Difference Quotient (Average Rate of Change) of a Function
- Find the Inverse Function and its Domain
- Find the Polynomial Given Certain Zeros and Characteristics
- Factoring or Finding Zeros of Polynomials
- Circles: Center, Radius, Domain, and Range
- Symmetries (x -axis, y -axis, origin), Even Functions, and Odd Functions
- Quadratic Functions
- Finding Intercepts, Asymptotes and Graphs of Rational Functions
- Solving Exponential Equations
- Solving Logarithmic Equations
- Solving Exponential Decay Word Problems, updated 2010

- Finding Equations of Sine and Cosine Graphs
- Revolutions, Angular Speed, and Linear Speed
- Find the Values of the Trigonometric Functions Given Certain Information
- Solve a Triangle Using Law of Sines and/or Law of Cosines
- Proving Trigonometric Identities
- Simplifying Inverse Trigonometric Expressions
- Solving Trigonometric Equations
- Vector Operations
- Vector Applied Problems
- Solving Systems of Equations & Systems of Inequalities
- Conics – Circles, Parabolas, Ellipses, Hyperbolas
- Math 150 Exam I Fall 2010 Key
- Math 150 Exam II Fall 2010 Key
- Math 150 Exam III Fall 2010 Key
- Math 150 Exam I Fall 2009 Key
- Math 150 Exam II Fall 2009 Key
- Math 150 Exam III Fall 2009 Key
- Math 150 Exam I Spring 2009 Key
- Math 150 Exam II Spring 2009 Key
- Math 150 Exam III Spring 2009 Key
- Math 150 Exam I Spring 2006 Key
- Math 150 Exam II Spring 2006 Key
- Math 150 Exam III Spring 2006 Key
- Math 150 Exam I Fall 2005 Key
- Math 150 Exam II Fall 2005 Key
- Math 150 Exam III Fall 2005 Key

MATH 365 STRUCTURE OF MATHEMATICS I STREAMING VIDEOS

- Definition of Less Than
- Sums of Finite Arithmetic Sequences
- Closure Property, Identity Element, Commutative Property, Associative Property, Distributive Property
- “Why You Cannot Divide by Zero” Proof
- Place Value as Illustrated by Adding and Subtracting in Other Bases
- Multiplication in Other Bases
- Division in Other Bases
- Proofs of $(-a)(-b) = ab$, $(-a)(b) = -ab$, and $(a)(-b) = -ab$.
- Plus “Why is a negative number times a negative number a positive number?”
- Modeling Rational-Number Division-Problems (note: Our textbook does not have a model for rational number division problems; this was derived from a published paper I read.)
- How to Change a Repeating Decimal to a Quotient of Integers
- Math 365 Week-In-Review #5 on Algorithms for Whole Number Adding, Subtracting, Multiplying and Dividing in Base Ten and in Other Bases
- Math 365 Exam I Spring 2011
- Math 365 Exam II Spring 2011
- Math 365 Exam III Spring 2011

- Math 365 Exam I Fall 2006 Key
- Math 365 Exam II Fall 2006 Key
- Math 365 Exam III Fall 2006 Key
- Math 365 Exam I Summer 2006 Key
- Math 365 Exam II Summer 2006 Key

MATH 366 STRUCTURE OF MATHEMATICS II STREAMING VIDEOS

- Constructions using Compass and Straightedge
- Pythagorean Theorem Proofs
- Math 366 Exam I Spring 2006 Key
- Math 366 Exam II Spring 2006 Key
- Math 366 Exam III Spring 2006 Key
- Math 366 Exam I Fall 2005 Key
- Math 366 Exam II Fall 2005 Key
- Math 366 Exam III Fall 2005 Key

2010	Created the course objectives for Math 150 Precalculus, as well as contributed to the course objectives for Math 365 and Math 366
2006–2009	Contributed several topics and created over 100 multiple-choice questions on “Misconceptions in Mathematics,” some of which are being administered to undergraduate mathematics and education students for improvement in course design and outcome
2009–2010	Created problems for Math 150 online homework
2007	Contributed several topics on the role of the calculator in the college mathematics classroom
2003–2006	Help improve online templates and quizzes for Precalculus and finite mathematics, and create online quizzes and exams for Precalculus
2004	Created and improved on algorithmic Internet practice exams in the areas of Systems of Linear Equations, Sets and Counting, and Finance
2004	Created and conducted the Math 365 Week-In-Reviews, which were later incorporated into online Math 365 Week-In-Reviews
2003	Created 100 Brooks/Cole Assessment (BCA) online algorithmic mathematics problems

GRANTS

2010–2011	2010–2011 Applied for and received a Disability Training Network Universal Design Mini-Grant (#P333A080032-09) where special precalculus topic streaming videos were created and produced showing mathematical problems of particular concepts worked step-by-step. DTN-TIR is supported by a grant from the U.S. Department of Education, Office of postsecondary Education.
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2007–2009 Texas Higher Education Coordinating Board “Course Redesign for Math 1324,” PI and director: G. Donald Allen, co-PI: Janice Epstein, \$349,827, July 20, 2007 – August 31, 2009, TAMRF #0701594. My roles included authoring hundreds of example problems with video solutions, creating classroom learning activities, and developing a homework system and tests.

CONSULTING

EDUCATIONAL TESTING SERVICES

2008 Mathematics Item Writer for the Texas Assessment of Knowledge and Skills (TAKS) based upon the Texas Essential Knowledge and Skills (TEKS)

2007 Mathematics Item Writer for TAKS based upon the TEKS

2006 Mathematics Item Writer for TAKS based upon the TEKS

2006 Level II Academic Benchmark Alignment Specialist; Mathematics Item Writer for TAKS based upon the TEKS

2005 Mathematics Item Writer, Hawaii

2005 Mathematics Item Writer for TAKS based upon the TEKS

2004 Mathematics Item Writer, Los Angeles Unified School District

2004 Participated in the pretest data collection for the College Board’s College-Level Examination Program for their development of CLEP Precalculus

2004 Mathematics Item Writer, LA Unified 2 Project

2003 Mathematics Reviewer and Editor, Formative Assessments Project

2002–2003 Mathematics Item Writer, No Child Left Behind Project

2002–2003 Mathematics Item Writer, Puerto Rico Project

2002 Mathematics Item Writer, California 2 Project

STREAMING VIDEOS

2007 Created 275 streaming videos for Thomson Higher Education, Gustafson/Frisk's *Intermediate Algebra*, 8th ed., 2008.

TEXT REVIEWS

- 2010 David B. Johnson's *Finite Mathematics - Practical Applications* focused on the Table of Contents, Systems of Linear Equations and Inequalities, Linear Programming, and Finance.
- 2006 Dugopolski's *Precalculus: Functions and Graphs, 2nd ed.*, 2005
- 2006 Bennett and Nelson's, *Mathematics for Elementary Teachers: A Conceptual Approach, 7th ed.*: focused on the "Whole Numbers" chapter.
- 2005 Chapter One of the Solutions Manual for 9th edition of Billstein, Lebeskind, and Lott's *A Problem Solving Approach to Mathematics for Elementary School Teachers, 2006*.
- 2004 Billstein, Lebeskind, and Lott's *A Problem Solving Approach to Mathematics for Elementary School Teachers, 8th ed.*, 2004
- 2002 Billstein, Lebeskind, and Lott's *A Problem Solving Approach to Mathematics for Elementary School Teachers, 7th ed.*, 2001.

QUALITY CONTROL

- 2010 Created a Math 150 Survey pertaining to my available precalculus streaming videos
- 2009–2010 Offered suggestions, corrections, and additions to the online textbook *PreCalc, 1e*, by Stecher
- 2003–2006 Work with Brooks/Cole and Thomson Learning to improve their online software used for algorithmic mathematics problems
- 2003 Mathematics Reviewer of algorithmic calculus problems for Brooks/Cole
- 1997–1998 Maintained the Math 151 and Math 152 Calculus, Stewart, Vol. I and Vol. II, corrections list for the mathematics department

SERVICE**EXTRA UNIVERSITY**

- 2005, 2007–present Served with the College Station Noon's Lion Club at their Fourth of July Celebration held at the George Bush Library.
- 2007–2009 Demonstrated ballroom dances and danced with the members of the audience at Saint Joseph's Hospital's Dancing for Life public outreach to increase cardiovascular health
- 2008–2009 Participated in the Korean Partnership Program by helping 2 new TAMU Korean graduate students improve their English and assimilate into our culture

- 2009 Ballroom danced for the residents/patients at the Bluebonnet House Assisted Living
- 2007–2008 Mathematics Consultant for a research project on body composition and anorexia
- 2007 Ballroom danced for the Hudson Creek Alzheimer’s Facility patients and their families
- 2006 Performed the tango at a Christian Women’s Club luncheon

TEXAS A&M UNIVERSITY

UNIVERSITY

- 2004–present Advisor for the Texas A&M Ballroom Dance Association (TAMBDA)
- 2011 Honored to be chosen to have high school juniors and seniors visit my Math 141 class as part of Whooping Weekend Conference hosted by the Aggie Recruitment Committee Conference
- 2010 Honored to be chosen to have high school seniors visit my Math 150 class as part of Seniors Experiencing Aggie Life (S.E.A.L.) hosted by the Aggie Recruitment Committee Conference
- 2010 Attended a Non-Tenured Track Faculty (NTTF) meeting with Interim Provost, Dr. Karan Watson
- 2009 Participated in a Texas A&M Student Organization Adviser Assessment Workshop
- 2008 Participated in NTTF meetings with Interim Provost, Dr. Jerry Strawser, and later with President Elsa Murano.
- 2005 Participated and spoke at an Aggie Successful Transition into Engineering Program (STEP) luncheon
- 2003 Helped Dr. Susan Quiring teach ballroom dance to some of the Texas A&M Aggie Band members
- 1997 Helped facilitate and publicize “The Symposium: Creating a Profession” through EDCI 662 Philosophical Perspectives of Education

COLLEGE OF SCIENCE

- 2011 Moderator for Texas A&M Regional Science Bowl; gave feedback and corrections on the mathematics questions
- 2010 Moderator for Texas A&M Regional Science Bowl; gave feedback and corrections on the mathematics questions

- 2009 Moderator for Texas A&M Regional Junior Science Bowl
- 2009 Moderator and Rules Judge for the Texas A&M Regional Science Bowl
- 2008 Moderator and Science Judge for the Texas A&M Junior Regional Science Bowl
- 2008 Moderator and Science/Rules Judge for the Texas A&M Regional Science Bowl
- 2007 Moderator and Science/Rules Judge for the Texas A&M Junior Regional Science Bowl
- 2007 Science and Rules Judge for the Texas A&M Regional Science Bowl; gave feedback and corrections on the mathematics questions
- 2006 Science Judge for the Texas A&M Junior Regional Science Bowl; gave some feedback and corrections on the mathematics questions
- 2006 Science Judge for the Texas A&M Regional Science Bowl
- 2005 Assisted with the Texas Science Olympiad
- 2005 Science and Rules Judge for the Texas A&M Regional Science Bowl
- 2004 Grader for “We’ve Got Your Number” at the Texas Science Olympiad
- 2004 Participated in the Office of Honors Programs and Academic Scholarships and College of Science luncheon for Young Scholars
- 2003 Scorer for the Texas A&M Regional Science Bowl

DEPARTMENT OF MATHEMATICS

- 2006–present Presented *Conjectures and Patterns with the Mobius Strip and Beyond* and mathematical concepts using card tricks based upon addition and upon modular arithmetic for the Summer Educational Enrichment Program in Mathematics (SEE Math)
- 2003–present Taught the following classes as a substitute: Math 151 Engineering Calculus I, Math 366 Structure of Mathematics II, Math 365 Structure of Mathematics I, Math 150 Functions, Trigonometry and Linear Systems, Math 141 Business Mathematics I
- 2006–2008, 2011 Math 141 Course Coordinator
- 2011 Evaluated two lecturers’ classroom teaching as a member of the Lecturer Evaluation Committee
- 2009–2010 Math 150 Course and/or Week-In-Review Coordinator

- 2010 Evaluated three lecturers' classroom teaching as a member of the Lecturer Evaluation Committee
- 2010 Prepared a list of issues, concerns, and suggestions regarding teaching a large number of students
- 2010 Participated in meetings with the candidates for Mathematics Department Head
- 2010 Participated in Online Homework Open Forum led by Jenn Whitfield
- 2010 Organized the Mathematics Lecturer Lunches, Fall 2010
- 2010 Authored "Large Class Concerns," which presented concerns, as well as some solutions, to teaching jumbo college classes
- 2010 Attended Ben Aurispa's *Differentials and Linear Approximations* and Jill Zarestky's *Fundamental Theorem of Calculus* promotion talks, as well as participated in the Senior Lecturer Promotion Input meeting
- 2010 Participated in the *Online Homework Open Forum* given by Jenn Whitfield
- 2010 Served on the *Evaluations of Lecturer's Teaching* Committee by evaluating three lecturers
- 2009 Served on the Mathematics Department Flu Task Force Committee
- 2009 Math 150 Content and Online Homework Committee Member
- 2009 Pre-Service Teacher Perceptions of Teaching Fractions through a Survey, Essay, and Mathematical Misconceptions, ICTCM (International Conference on Technology in Collegiate Mathematics), March 12-15, 2009, New Orleans. G. Donald Allen with Dianne Goldsby and Sherry Scarborough.
- Various Profession Bob Gustafson requested and used my Math 366 notes with permission during the summer terms; Professor Jean Marie Linhart requested and used my Math 150 notes with permission; Lecturer Marcia Drost requested and used my Math 366 notes with permission
- 2008 Presented "Misconceptions in Mathematics" by G. Donald Allen and Sherry L. Scarborough at the 2008 *Conference for the Advancement of Mathematics Teaching* (CAMT)
- 2008 Math 131 Textbook Search Committee Member
- 2007 Math 131 Course Coordinator and Week-In-Review Coordinator
- 2004 Helped with the Mathematics Department booth at the Mitchell Symposium Hands-On Science Show
- 2004 Helped a Texas A&M Math Club meeting by interacting with local high school students attending Dr. Chris Thomas' presentation, "The Shapes of Space"

- 2003 Helped grade Texas A&M's 12th Annual High School Math Contest
- 2003 Helped Lecturers Chia-Rong Chen and Jennifer Lewis with the implementation and set up of BCA algorithmic online assignments for their classes
- 2003 Provided a key to the Math 102 Diagnostic Exam

SERVICE TALKS

- 2011 Presented "The Theory of Sudoku" at the *Brazos Valley Math Teachers' Circle* for their Continuing Professional Education Credits.
- 2011 Presented "The Theory of Sudoku" at a Onederful Wednesday program at Covenant Presbyterian Church, College Station, Texas.
- 2010 Presented mathematical concepts using card tricks based upon addition and upon modular arithmetic at the *Brazos Valley Math Teachers' Circle* Summer Workshop. Helped with the inductive card game Eleusis.
- 2003 Made a presentation and answered questions about mathematics to the Cornerstone Home School Support Group
- 2000 Presented "Conjecturing with Mobius Strips" to a Covenant Presbyterian Church retreat
- 2000 Presented "Conjecturing with Mobius Strips" for Brownie Troop #1037
- 1997 Presented "Cooperative Hands-On Learning of College Mathematics for the Graduate Student Organization

HONORS

- 2009 Nominated for the Fall 2009 Texas A&M Student Led Award for Teaching Excellence (SLATE Award)
- 2009 Attended the Century Scholars Cultural Dinner by accepting invitations from my students Sharrice Knox and Hanh Dinh
- 2008 Attended the Century Scholars Cultural Dinner by accepting an invitation from my student Jessica Bunyavong
- 2004 Indiana University Purdue University (IPFW) Purdue Alumni of the Semester
- 1997–1998 Mildred Carpenter Scholarship Award Recipient
- 1993–1994 Who's Who among Students in American Universities & Colleges
- 1993 Membership in Association of Women Mathematicians given by Purdue Mathematical Sciences in recognition of performance