

TCU VITA

1. SUSAN GRACE STAPLES

2. PLACE OF BIRTH AND DATE

Norwood, Massachusetts, 1961

3. EDUCATIONAL BACKGROUND

Ph.D. 1988, University of Michigan, Ann Arbor MI

BS 1983, Case Western Reserve University, Cleveland OH

4. CONTINUING EDUCATION FOR PROFESSIONAL DEVELOPMENT

May 2007 Attended "Aiming for Excellence in Teacher Preparation", Requested and received a professional travel grant from TEA (Texas Education Agency) and Texas A&M to cover room and board. Conference focused on aligning University Teacher Preparation programs with state secondary standards.

June 2006 Sponsored by the MAA to attend an MAA-Prep Conference in Liousville, KY, June 4-11, 2006 Requested and received a Professional Training Grant to cover room and board. This conference trained college faculty how to teach preservice teachers to use and incorporate Geometry software into the national high school curriculum.

May 1993, Sponsored by the NSF to attend the ATLAST program, the national directive to redesign the linear algebra curriculum to include software applications

July 1989, Sponsored by the AMS to attend a two-week workshop conference on Teichmuller Theory, Arcata, CA

5. PROFESSIONAL CERTIFICATIONS

6. **PRESENT RANK:** Associate Professor

7. **YEAR OF APPOINTMENT TO TCU:** 1995

RANK: Assistant Professor

8. **YEAR OF LAST PROMOTION** 1998

9. PREVIOUS TEACHING/RESEARCH APPOINTMENTS

a. Part time

1990 Visiting Scholar, Mittag-Leffler Institute Sweden

1983-88 Teaching Assistant, University of Michigan

b. Full time

1994 Visiting Research Scholar, Texas Christian University

1992-94 Assistant Professor, City University of New York, College of Staten Island

1989-92 R.H. Bing Instructor, University of Texas at Austin

1988-89 Postdoctoral Fellow, Institute for Advanced Study, Princeton NJ

10. PREVIOUS PROFESSIONAL POSITIONS

1983 Computer Programmer, IBM, Fishkill NY

11. COURSES TAUGHT

Applied Precalculus, Precalculus, Topics in Mathematics, Applied Calculus, Calculus I, Calculus II, Interest Theory I, Interest Theory II, Probability and Statistics, Higher Geometry, Actuarial Internship, Complex Analysis, Advanced Complex Analysis, Real Analysis I, Real Analysis II, The Teaching of Mathematics, Survey of Mathematical Problems

12. EXTERNAL SUPPORT SOUGHT

a. Received

2009- present Southwest Actuarial Forum granted an annual \$500 scholarship for the actuarial program

1993-94 PSC-CUNY Research Award, #663468, "The higher integrability of quasiconformal maps and the Poincare inequality", \$11,020

1990-91 National Science Foundation Research Grant, #DMS 9004251, "Problems in quasiconformal maps and harmonic analysis", \$15,466

1987-88 American Association of University Women Dissertation, Fellowship Grant, "Domains with a local to global norm condition", \$10,000

b. Not received

1991-93 National Science Foundation Research Grant, "Problems in quasiconformal maps and harmonic analysis"

13. INTERNAL GRANTS SOUGHT

2000 "A Visualization and Hands-on Approach to Mathematics". A TCU Instructional Development Grant, with R. Doran, \$2300 Granted.

1995 TCU/RF, "Problems in quasiconformal analysis", Not funded

1995 TCU Library Grant for departmental purchase of Mathematical Reviews Online, granted

1994 TCU Library grant for MAPLE Books for Curriculum Development in Calculus, granted

1993 College of Staten Island, Dean's Research Funds, \$2,000

14. GRADUATE DISSERTATIONS DIRECTED

15. PRESENTATION OF SCHOLARLY AND CREATIVE ACTIVITIES

a. Refereed publications

"Averaging domains: From Euclidean spaces to homogeneous spaces", *Proceedings of the conference on Differential and Difference Equations and Applications*, (2006), pp. 1041-1048.

" L^p -Averaging domains in homogeneous spaces", *Journal of Mathematical Analysis and Applications*, (JMAA), **317** (2006), pp. 550-564

Patterns jumping out of a simple checker puzzle, , Mathematics Teacher, National Council of Teachers of Mathematics (NCTM) Focus Issue on Patterns, **98**, No. 4, (2004), pp . 224-227.

Maximizing the Arclength in the Cannonball Problem, jointly with Z. Dou, The College Mathematics Journal, **30**, No. 1, (1999), pp . 44-45.

"*A Quasiconformal Analogue of Brennan's Conjecture*", jointly with R. Hurri-Syrjanen, *Complex Variables: Theory and Application.*, **35**, (1998), pp. 27-32.

"*Quasisymmetrically Thick Sets*", jointly with Lesley A. Ward, *Annales Academiae Scientiarum Fennicae*,**23**, (1998), 151-168.

Quasiconformal Maps and Poincare Domains, joint with R. Hurri-Syrjanen, *Rocky Mountain Journal of Mathematics*, **Vol. 26, No. 4**, (Fall 1996), 1395-1423.

Global Integrability of the Jacobian and Quasiconformal Maps, *Michigan Math Journal*, **40**, (1993), 433-444.

Doubling Measures and quasiconformal maps, *Comment. Math. Helv.* **67**, (1992), 119-128.

Maximal functions, A_∞ measures and quasiconformal maps, *Proc. Amer. Math. Soc.*, **Vol. 113, No 3**, (1991), 689-700.

L^p -Averaging domains and the Poincare Inequality, *Ann. Acad. Sci. Fenn., Series AI*, **14**, (1989), 103-127.

b. Non-refereed publications, (include publications arising from presentations, i.e. proceedings), exhibits, performances, textbooks

Maximizing the Arclength in the Cannonball Problem, with Ze-Li Dou, pp 354-356, Article appearing in "The Calculus Collection", by C. Diefenderfer and R. Nelson, (2009), MAA CRM book series

MAA-Online featured book review for "The Theory of Interest", by J. Daniel and L. Vaaler, Prentice-Hall (2006).

Book Review for "The Moment of Proof: Mathematical Epiphanies" by Donald C. Benson, *The American Mathematical Monthly*, **108**, no. 3, (2001), pp. 279-280.

c. Materials or activities accepted or scheduled

d. Materials under active review

I am co-authoring a book *Paradoxes and Sophisms in Calculus* with Sergei Klymchuk. We have preliminary approval from the MAA indicating they are interested in publishing this manuscript.

e. Papers presented

June 2008 "The Actuarial Program at TCU", Southwestern Actuarial Forum, Dallas, TX, June 9

August 2005, " L^p -Averaging domains: From Euclidean spaces to homogeneous spaces", Presented in The Conference on Differential and Difference Equations and Applications, at Florida Institute of Technology, Melbourne, FL.

January 2005 " L^p -Averaging Domains in Homogeneous Spaces", presented at the Geometric Function Theory Special Session of the American Mathematical Society conference held in Atlanta, GA

April, 1998 "Secret Codes of World War II", presented for Mathematics awareness week in conjunction with the Tandy Retrofest, Tarrant County Junior College – Northeast Campus, Fort Worth TX

March, 1998 "Quasisymmetrically thick sets", presented at the Modern Function Theory Special Session of the American Mathematical Society conference held in Louisville, KY.

January 1997, "Quasisymmetric Maps and sets of Measure Zero", Rice University, Houston, TX

January 1994, Co-Organizer for the special session on "Quasiconformal Mappings in Analysis", 100th Annual American Mathematical Society Meeting, Cincinnati, OH

October 1993, "Poincare Domains", State University of New York at Stony Brook, Stonybrook NY

September 1993, "Global integrability of the Jacobian and quasiconformal maps", AMS Regional Meeting, Syracuse NY, Special session on Potential Theory

June 1993, "Quasiconformal Maps and Doubling Measures", Nevanlinna Colloquium, International Conference on Complex Analysis held in Ann Arbor, MI

April 1993, "Quasiconformal Maps and Invariants", University of Texas at Austin, Austin, TX

October 1992, "Quasiconformal Maps and Doubling Measures", City University of New York-Graduate Center, New York, NY

February 1992, "Quasidisks", Fairfield University, Fairfield, CT

February 1992, "Quasiconformal Maps and Invariants", City University of New York- College of Staten Island, Staten Island NY

February 1992, "Quasiconformal Maps and Invariants", University of Oregon, Eugene, OR

February 1992, "Quasidisks", Boston University, Boston, MA

February 1992, "Quasiconformal Maps and Invariants", Boston University, Boston, MA

February 1992, "Quasidisks", Boston College, Chestnut Hill, MA

February 1992, "Quasidisks", Wellesley College, Wellesley, MA

February 1992, "Quasiconformal Maps and Invariants", University of North Texas, Denton, TX

April 1991, "Quasiconformal Maps and Doubling Measures", University of Michigan, Ann Arbor, MI

April 1991, "Quasiconformal Maps and Doubling Measures", University of Western Ontario, London, Ontario, Canada

April 1991, " L^p -averaging domains and the Poincare inequality", University of Western Ontario, London, Ontario, Canada

February 1990, " L^p -averaging domains and the Poincare inequality", Texas A & M University, College Station, TX

October 1989, "Quasiconformal Maps, A_∞ -weights and maximal functions, University of Michigan, Ann Arbor, MI

March 1989, " L^p -averaging domains and the Poincare inequality", Steven's Institute of Technology, Hoboken NJ

April 1988, " L^p -averaging domains and the Poincare inequality", University of Cincinnati, OH

April 1988, " L^p -averaging domains and the Poincare inequality", NSF Conference on the Hyperbolic Metric in Complex Analysis, University of Tennessee, Knoxville, TN

February 1988, " L^p -averaging domains and the Poincare inequality", University of Tennessee, Knoxville, TN

February 1988, "Domains with a local to global norm condition", University of Pittsburgh, Pittsburgh, PA

February 1988, "Domains with a local to global norm condition", Smith College, Northampton, MA

January 1988, " L^p -averaging domains and the Poincare inequality", Case Western University, Cleveland, OH

16. EDITORSHIPS AND CONSULTANTSHIPS

Assistant Editor of *Classroom Resource Materials (CRM)*, a textbook series of the Mathematical Association of America (2006- present)

Assistant Editor of *The American Mathematical Monthly*, the main journal of the Mathematical Association of America (2001-present)

Member of the American Mathematical Society's Committee on Human Rights, (2000-2003)

Assistant Editor of Problems Section of *The Mathematics Magazine*, Published by the Mathematical Association of America, (1995- 2000)

Referee for *Journal of Mathematical Analysis and Applications*, (2003-present)

Referee for *Complex Variables*, (1994-present)

Referee for *Annales Acadamiae Scientiarum Fennicae*, (1993-present)

Referee for *Proceedings of the American Mathematical Society*, (1992-present)

Reviewer for *Zentrallblatt* , (1992-2004)

Reviewer for *The Mathematical Reviews*, (1988-present)

Consultant to Department of Mathematics at The University of Texas at Austin Postdoctoral Program, "Research and Teaching Transitions after a Postdoctoral Position" (1997)

Mentor for the Diamond Fellowship Program of City University of New York, (1992)

17. ACADEMIC ADVISING ACTIVITIES

Took six actuarial students to the SWAF (Southwest Actuarial Forum) in Dallas. SWAF sponsored all seven of us; all registration fees and meals were paid for by SWAF 2010

Oversaw all of the actuarial internship classes, 2008-present

Served as academic advisor of undergraduate mathematics majors, 1996- present.

Served as academic advisor for all graduate students in MAT program, 2000- 2009

Served as academic/teaching mentor for all teaching assistants in Mathematics, 2000-2009

Served as academic advisor for actuarial students, 2001- present

Faculty Advisor to "Impact", an African American ministry on campus, 2000-2004

18. DEPARTMENTAL SERVICE

2001- present Served as the **Director of the Actuarial Program**. I advise the actuarial students, file the official paperwork for the program with the Society of Actuaries and teach a sequence of specialized classes in program. I have also arranged a series of talks and seminars with actuarial firms and the University Career Services. Furthermore, I help coordinate the job applications for students finishing the program.

2001 – present Authored the Mathematics Department Assessment plan.

2008- present Authored the Core Assessment Plan for Mathematics

2005- Present Departmental Advisory Committee, Chair (2009-2011) Secretary of Committee (2006-2008),

1994-present Departmental Library Liaison, managed library account

2010-present Served on the PhD Preliminary Exam Committee for Complex Analysis.

2011 Organized and sponsored “Assessing Risk,” a presentation from Zoe Rico of AON Risk Company in Dallas

2010 Coordinated the computer lab update to the latest version of Geometer’s Sketchpad

2010 Organized and sponsored “Consider a career as an actuary,” a presentation from Catherine Taylor of USAA Company in San Antonio

2010 Organized and sponsored “Actuarial Careers,” a presentation from Ash Nyangani of Deloitte

1999- 2009 Graduate Director in Mathematics This entailed handling all applications, financial aid, advising, publicity and recruiting. I also individually mentored each teaching assistant in the program and aided each student in job placement.

2009 Authored Proposal for new minor in Actuarial Mathematics

2009 Organized and sponsored “Mercer at TCU”, a presentation from Mercer Company in Dallas

2008 Organized and sponsored the “Consider a career as an actuary,” a presentation from USAA Company in San Antonio

2007 Organized and sponsored the “Health Insurance Actuaries”, a presentation from Healthy Markets Company of North Richland Hills

2007 Organized and Sponsored “What is an actuary”, an informational meeting hosted by Deloitte Touche company.

2006 Authored Proposal for new course, Interest Theory II, Math 30623. Course will first be offered in Spring 08.

2006 Co-Authored with K. Rittby, Course Proposal for new course 10054 and Pre-requisite changes for Math 10524. New course will first be offered in Summer 07.

2006 Organized and sponsored the “Actuarial Forum”, jointly with the University Career Services, February 1, 2006.

2005 Organized and sponsored a joint “Actuarial Resume Workshop” with the University Career Services

2005 Served on the AdHoc Committee (chaired by S. Weis) with the Mathematics Department and The School of Education. We examined the degree structure of the various Mathematics Education degree plans.

2005 Designed and implemented a “perpetual schedule” for the upper division mathematics classes. This enabled students and faculty to plan two years at a time for advanced course offerings.

2002 Worked with School of Business Task force in examining undergraduate mathematics requirements for business majors.

2002 Wrote Compliance Plan for department for SACS review

2002 Chair of Exit Exam committee for mathematics

2002 Chair of Departmental Advisory Committee

2001 Served as the departmental chair of the Program Assessment Committee for Mathematics.

2000-2001 Served as chair of the Actuarial Committee. Submitted a proposal for an actuarial program in Mathematics to the various university committees in spring 2001

2000-2001 Secretary and member of the Departmental Advisory Committee

2000 Served on the departmental hiring committee.

1999-2000 Prepared, mailed out and analyzed an exit survey for all mathematics majors who have graduated in the past 5 years and for our current juniors and seniors. Used results of the survey for our SACS evaluation.

1998-1999 served on committee to prepare proposal for reinstatement of the Master of Arts in Teaching (MAT) program in Mathematics (proposal was approved in March 1999)

1994-present Managed Colquitt Memorial Fund

1996 Presented a talk to the TCU Parabola Club, "Card Tricks, Arithmetic Games and Geometry Riddles"

1996 Participated in Recruiting Day for Dunbar High School Mathematics and Science Students

1996 Participated in Recruiting Day for an Arlington High School Mathematics and Science Students

1994 Presented a talk to the TCU Parabola Club, "Quasidisks"

19. COLLEGE SERVICE

2009- present Chair of the Selection Committee for the CSE Dean's Teaching Award

2005 Chair of the College Advisory Committee

2005 Faculty Participant in SRS symposium

2003 Judge for SRS symposium

2002 Served on Review Panel for graduate program in Geology

2002 Gave Presentation for Tucker Technology Center Open House

2002 Science MAT committee

1997- Member on the Advisory Committee for the Mathematics and Science Education Research Institute, a joint venture of Addran College and The School of Education

20. UNIVERSITY SERVICE

2009- present "Equality of Opportunity Committee", Provost's committee to follow up on "Status of Women Faculty Report"

2005-2008 Chair of the Evaluation Committee (Oversaw a pilot test of an online SPOT evaluation system)

2004-05 Served on Hiring Committee for School of Education: Mathematics Education position

2002-2005 Graduate Council

2002 Affirmative Action and Compliance Committee

1999 University Curriculum Implementation and Assessment Committee (Examined UCR)
Served on the "Green Committee"

1999 Member on Master's thesis committee for Vida Trevino, a candidate for M. Ed. in
Educational Research and Collaboration

1998 Presented a talk to the "Take Our Daughters and Sons to Work" participants on
Mathematics, April, 1998

1995-2000 University Library Committee

1997 Gave a presentation to the girls attending "Take your daughters to work" day at TCU

1996 Faculty Partner in the Orientation Program

1996 Member on Master's thesis committee for Theresa Lubbers, a candidate for M.
Ed.in Educational Research and Collaboration, defense on November 18, 1996

21. COMMUNITY SERVICE

2009 Tutored 4th Grade Mathematics, Fort Worth Academy

2009 Met with 3rd-5th grade Mathematics team and planned curricular changes, Fort Worth
Academy

2008 - Presented an inservice training workshop onsite at Wedgwood Middle School, FWISD
"Geometric Solids: Volumes, Surface Area, Nets and Scaling". December 1, 2008.

2008- Planned and hosted a Family Math night for Wedgwood 6th Grade School, FWISD.

2008- Planned and hosted a Family Math night for McClean 6th Grade School, FWISD.

2008- Planned and hosted a Family Math night for Rosemont 6th Grade School, FWISD.

2007- Developed materials, planned and organized a large scale Family Math Night event for
Wedgwood 6thGrade School, FWISD. The first family math night event was held January 30,
2007, with close to 200 people in attendance. The event was held a second time in October with
an even larger turnout.

2007 – Planned and hosted a Family Math Night for McClean 6th Grade School, FWISD.

2007 - Presented a talk "Geometric Solids" and offered related hands-on activities for 3rd Graders
at Fort Worth Academy, Fort Worth, TX

2006 Presented an onsite workshop for FWISD on Measurement for 3rd-5th grade teachers, held at Woodway Elementary School, FWISD.

2005- 2008 Den leader for Cub Scout pack 575

2005-2007 Assistant Girl Scout Leader for troop 2445 based at JT Stevens Elementary School, FWISD

2005 Designed and implemented a five month multi-grade level weather project for Fort Worth Academy. Students in grades K-4 will collect weather data and use basic statistics to analyze the results.

2005 Presented a workshop on “Using Board Games to teach Mathematics Skills”, at Fort Worth Academy

2005 Presented a day of Hands- on activities on geometry, volumes and solids to three 4th grade classes at Woodway Elementary School, FWISD.

2004 Worked together with Woodway Elementary of FWISD to author an MET (mathematics education trust) grant from NCTM

2004 Spoke at the meeting in honor of of Martin Badoian’s 50th year of teaching mathematics, Canton High School, Canton MA

2003-2005 Served on the Site Based Management Team (SBDM) for Woodway Elementary School, FWISD.

2003 Presentation “Math at Home” at Child Study Center, Fort Worth

2003 Volunteered as a Girl Scout Leader for a week at Day Camp for Circle T Council of Texas

2002 Presentation on Learning Disabilities and Social Skills at Child Study Center, Fort Worth

2001 Hands-on presentation on Platonic Solids for the second/third grade class at Child Study Center, Fort Worth

2001 Hands-on presentation on Probability for the second/third grade class at Child Study Center Fort Worth

2001 On the development committee for a community resource library on childhood developmental disabilities (to be housed at the Fort Worth Child Study Center).

1996-2000 Served as an Alumni Associate Representative for my undergraduate alma mater, Case Western Reserve University

1992 Presented a talk to a Girl Scout troop on careers in mathematics, Austin, TX

22. MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

American Mathematical Society

Mathematical Association of America

Association for Women in Mathematics

American Association of University Women

National Council of Teachers of Mathematics

Sigma Xi

23. PROFESSIONALLY RELATED HONORS AND AWARDS

2007 Received the TCU Dean's Award for Teaching

2007 Served as a member of the US Mathematics Education Delegation in the US-Egypt Education Forum, November 26-December 2, 2007, Cairo, Egypt

1992 Undergraduate Teaching Award, University of Texas at Austin, Austin, TX

1987 University-Wide Outstanding Teaching Assistant Award, Univ. of Michigan, Ann Arbor, MI

1982 Elected to Mortar Board, Case Western Reserve University, Cleveland, OH

1982 Elected to Tau Beta Pi, Engineering and Science Honors Society, Case Western Reserve University, Cleveland, OH

24. OTHER PROFESSIONAL ACTIVITIES

January 2012 Attended Joint Meeting of the AMS and MAA, Boston

January 2010 Attended Joint Meeting of the AMS and MAA, San Francisco,

April 2010 Attended Southwest Actuarial Forum, June 2010, Dallas TX

April 2009 Attended "Texas Section of the MAA", University of North Texas, Denton, TX

November 2009 Attended "Joint University Mathematics Faculty and Secondary Mathematics Supervisors Meeting" at UT Dallas.

2008 Met with Dr. Bill Koehler, President of the FWISD School Board and Michael Sorum, the chief academic officer of FWISD, to discuss concerns and ideas about the middle school mathematics curriculum for Fort Worth. Meetings were held in January and March.

February 2008 "Geometric Solids", a workshop presented for the Math Science and Technology Education Institute of TCU.

March 2006 Attended the Wrightslaw Conference, Fort Worth, TX, a conference on Educational Law with a focus on new “No Child Left Behind” and Special Educational legislation

April 2006 "Geometric Solids", a workshop presented for the Math Science and Technology Education Institute of TCU.

February 2006 “Does Your Math Measure Up” (TAKS measurement standards), a workshop presented for the Math Science and Technology Education Institute of TCU.

November 2005 “Does Your Math Measure Up” (TAKS measurement standards), a workshop presented for the Math Science and Technology Education Institute of TCU.

October 2005 “Geometry Classroom Supplements”, a workshop presented for the Math Science and Technology Education Institute of TCU

February 2005 Served as a moderator for the Mathematics, Science and Technology Education Institute of TCU at the Focus Group

November 2004, "Geometric Solids", a workshop presented for the Math Science and Technology Education Institute of TCU

April 2004, "Geometry Classroom Supplements", a workshop presented for the Math Science and Technology Education Institute of TCU

February 2004, "Classroom Supplements for Middle School Mathematics", a workshop presented for the Math Science and Technology Education Institute of TCU

October 2003, "Classroom Supplements for Middle School Mathematics", a workshop presented for the Math Science and Technology Education Institute of TCU

April 2003 , "Classroom Resources for Secondary Mathematics", a workshop presented for the Math Science and Technology Education Institute of TCU

November 2002, "Classroom Resources for Secondary Mathematics", a workshop presented for the Math Science and Technology Education Institute of TCU

March 2002, Attended conference of American Mathematical Society in Ann Arbor MI. Special Section focused on Geometric Function Theory and Analysis.

February 2002, "Classroom Resources for Secondary Mathematics", a workshop presented for the Math Science and Technology Education Institute of TCU

November 2001, "Classroom Resources for Secondary Mathematics", a workshop presented for the Math Science and Technology Education Institute of TCU

September 2000 "Absolute Values and Inequalities across the Curriculum", a Saturday workshop presented for the Math Science Education Institute of TCU

July 2000 "Career of a Mathematician", presented for TEX Prep Program, a High School Math/Science Summer program College – Texas Wesleyan University, Fort Worth TX

May 2000, "ASSIST" Workshop on suicide prevention, TCU

April 2000, Sheila Tobias workshop on Math Anxiety, TCU

April 2000, annual meeting of the Texas section of the Mathematics Association of America, Austin TX,

March 1998, Attended Mathematics Association of America Annual Meeting at SMU in Dallas, TX,

April 1997, Attended Mathematics Association of America Annual Meeting in Seguin, TX

August 1995, Attended "Quasiconformal Mappings and Analysis" Conference, University of Michigan, Ann Arbor, MI, Supported by a travel grant from the National Science Foundation

February 1995, Attended Calculus Reform Conference, University of Texas at Arlington

April 1994, Attended "Mathematics and Computing: from Remediation to Research" at City College, New York, NY

March 1994, Attended Regional AMS meeting in Brooklyn, NY

June 1990, Attended Nevanlinna Colloquium, International Conference on Complex Analysis held in Helsinki, Finland

January 1988, Attended the annual American Mathematical Association of America meeting in Atlanta GA

March 1987, Attended a conference in honor of Lars Ahlfors, University of Michigan, Ann Arbor, MI