

William Mark Faucette

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Education

May, 1988: Ph.D. in Mathematics, Brown University
May, 1987: Sc.M. in Mathematics, Brown University
June, 1983: M.A. in Mathematics, The University of Georgia
June, 1983: B.S. in Mathematics, The University of Georgia
Summer, 1981: Attended classes at Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, West Germany.

Honors:

Graduated from The University of Georgia as First Honor Graduate, With Highest Honors and With Honors in Mathematics.
First undergraduate mathematics major ever to write an undergraduate honors thesis at The University of Georgia.
Member of Pi Mu Epsilon and Kappa Mu Epsilon mathematics honor societies.
Member of Phi Alpha Phi honor society.
Elected Phi Beta Kappa, 1982.
Awarded University Fellowship for Graduate Study, Brown University, 1983–1984.
In the 1989–1990 academic year, selected as one of twelve semifinalists for the Educator of the Year award at Northeast Missouri State University (now Truman State University).
Granted tenure and promoted to the rank of associate professor of mathematics in the fall of 1998.

Professional Organizations:

American Mathematical Society, 1981–2004

Mathematical Association of America, 1988–2004

Scholarly Articles and Books:

Some Remarks on a Result of R. Smith and Tapia-Recillas: C is Isomorphic to C_a in the Universal g^1_d , in preparation.

Some Remarks on a Result of R. Smith and Tapia-Recillas: The Homology Class of the Multiple Locus of a Universal g^1_d , in preparation.

Variation of Harmonic Volume With Moduli, in preparation.

Analysis of the Zero Locus of Harmonic Volume In Dimension One, in preparation.

Ceva's Theorem and Its Applications, completed 2007.

The Euler Line of a Triangle, completed 2007.

The Nine-Point Circle, completed 2007.

A Poor Man's Derivation of the Double Angle Formula for Sine, completed 2006, submitted.

Around the Cubic Curve in Fifty Minutes, completed 2005, unpublished.

Pascal's Theorem in Degenerate Cases, completed 2004, submitted.

Trisecting an Angle . . . By Cheating, with Wendy C. Davidson, completed 2003, submitted.

Generalized Geometric Series, The Ratio Comparison Test and Raabe's Test, The Pentagon, vol. 67, no. 1, Fall 2007.

Divisibility Rules for 7 and 13, completed 2003, submitted.

The Generalized Torelli Problem: Reconstructing a Curve and its Linear Series From its Canonical Map and Theta Geometry, completed 2002, submitted.

The Miracle Substitution: How and Why It Works, completed 2002, submitted.

Circling Up the Wagons: Unifying Mathematics for the Calculus Student, completed 1988, revised 2001, unpublished.

The Descendants of William E. Faucett and Elizabeth Wallis, University of West Georgia Press, 1998.

How Not To Prove Fermat's Last Theorem, completed April, 1996, unpublished.

Geometric Interpretation of the Reduction of the General Quartic by Galois Theory, **Amer. Math. Monthly**, vol. 103, no. 1, January 1996.

Harmonic Volume, Symmetric Products, and the Abel-Jacobi Map, **Transactions of the Amer. Math. Soc.**, vol. 335, no. 1, January 1993.

Higher Dimensional Harmonic Volume Can Be Computed As An Iterated Integral, **Canadian Mathematical Bulletin**, vol. 35(3), 1992.

Seminars and Conferences

April, 1989, Presented research results at Missouri regional meeting of the MAA.

June, 1989, Presented research results in three lectures to the geometry seminar at The University of Georgia.

February, 1990, Presented research results in two lectures to the geometry seminar at The University of Missouri–Columbia.

Spring Semester, 1990, Conducted an algebraic geometry seminar intended as an introduction to algebraic geometry. The primary text was *Algebraic Curves*, by W. Fulton, but supplementary material on the relation between very ample line bundles and embeddings in projective space was taken out of *Principles of Algebraic Geometry*, by P. Griffiths and J. Harris.

Spring Semester, 1991, Conducted an algebraic geometry seminar. The primary text was chapter zero of *Principles of Algebraic Geometry*, by P. Griffiths and J. Harris.

March, 1991, Presented research results to the mathematics faculty of California State University – Hayward.

Fall Semester, 1991, Taught an introductory course/seminar in algebraic geometry to students and members of the faculty. The primary text was *Algebraic Curves*, by W. Fulton.

April, 1992, Presented paper *Geometric Interpretation of the Reduction of the General Quartic by Galois Theory* at the regional meeting of the Mathematical Association of America.

1992 to present, Writing a text on modern algebraic geometry. I am also in the process of writing an undergraduate point-set topology text, which will use the Moore method of instruction.

Fall Semester, 1992, Participated in a computer science programming seminar on the C programming language.

Spring Semester, 1993, Presented a lecture on the definition and basic properties of schemes.

Spring, 1994, Presented paper *Geometric Interpretation of the Reduction of the General Quartic by Galois Theory*, at the Southeastern regional meeting of the MAA at Carson-Newman University, Knoxville, Tennessee.

Spring, 1995, Presented paper *How Not To Prove Fermat's Last Theorem*, at the Southeastern regional meeting of the MAA at The University of North Carolina at Asheville, in Asheville, North Carolina.

Spring Quarter, 1995, Presented a lecture at Math Day.

Spring, 1996, Attended the Southeastern regional meeting of the MAA at The University of Alabama at Huntsville, Huntsville, Alabama.

Spring, 1998, Attended the Southeastern regional meeting of the MAA at The College of Charleston in Charleston, South Carolina.

Spring, 1999, Attended the Southeastern regional meeting of the MAA at The University of North Carolina at Charlotte, in Charlotte, North Carolina.

Spring, 2000, Attended the Southeastern regional meeting of the MAA at Huntingdon College in Montgomery, Alabama.

Fall, 2001, Presented a seminar in commutative algebra. The text was *Commutative Algebra*, by M. F. Atiyah and I. G. MacDonal.

Spring, 2002, Presented a lecture for Math Day at the University of West Georgia. The subject was algebraic coding theory and the title was *The FBI, the CIA, the NSA and You: The Trish Gibbs Memorial Lecture*.

Fall, 2003, Presented a lecture for the Department of Physics. The title was *Math Makes the World(s) Go 'Round: A Mathematical Derivation of Kepler's Laws of Planetary Motion*

Spring, 2004, Presented a lecture for Math Day at the University of West Georgia. The subject was basic number theory and the title was *How Many Ways Can 945 Be Written as the Difference of Squares?: An Introduction to the Mathematical Way of Thinking*

Fall, 2004, Presented the paper *Pascal's Theorem in Degenerate Cases* in the Geometry Seminar at the University of West Georgia.

Fall, 2004, Made presentation *Cryptography: Public Key vs. Private Key Cryptosystems* in the Mathematics Seminar at the University of West Georgia.

Fall, 2004, Made presentation *Public Key Cryptography: The RSA Cryptosystem* in the Mathematics Seminar at the University of West Georgia.

Spring, 2005, Presented paper *Pascal's Theorem in Degenerate Cases* at the Southeastern Regional meeting of the Mathematical Association of America at Meredith College, Raleigh, North Carolina.

Spring, 2005, Presented paper *Around the Cubic Curve in Fifty Minutes* to the mathematics faculty at the State University of New York at Potsdam.

Spring, 2006,Served as a referee for the journal *Applied Mathematics Letters*.

Area of Specialization: Algebraic Geometry

Thesis Topic: Harmonic volume and the algebraic inequivalence of homologous cycles in the Jacobian of a Riemann surface.

Thesis Adviser: Bruno Harris

Teaching Experience

2005: Mentored a student, David Yarbrough, in an undergraduate research project in algebraic coding theory.

2004–2005: Mentored a student, Khrysti Cash, in an undergraduate research project in algebraic coding theory and encouraged her to present her results at the Southeastern Regional meeting of the Mathematical Association of America at Meredith College, Raleigh, North Carolina.

1998–present: Associate Professor of Mathematics at the University of West Georgia. From Fall 1998 to Spring 2005, taught College Algebra; Plane Trigonometry; Precalculus; Survey of Calculus; Calculus I, II, and III; Complex Analysis; Introduction to Topology; Senior Seminar; Advanced Calculus; Abstract Algebra I and II; Survey of Modern Algebra; Real Analysis; and College Geometry

1996–1998: Assistant Professor of Mathematics at the University of West Georgia. From Fall 1996 to Spring 1998, taught College Algebra; Plane Trigonometry; Calculus I, II, III, and IV; Discrete Structures and College Geometry.

Summer 1996: Taught in the Governor's Honors Program, a statewide program for gifted high school students, for the State of Georgia.

1993–1996: Assistant Professor of Mathematics at West Georgia College. From Fall 1993 to Spring 1996, taught College Algebra; Plane Trigonometry; Calculus I, II, III, and IV; Real Analysis; and College Geometry.

1988–1993: Assistant Professor of Mathematics at Northeast Missouri State University (now Truman State University). From Fall 1988 to Spring 1993, taught Calculus I, II, and III; Plane Trigonometry; College Algebra; Advanced Calculus II; Topology; a year-long sequence in abstract algebra at the undergraduate level; and graduate courses in real analysis, complex analysis, point-set topology, differential topology, and algebra.

Summer 1988: Taught in the Governor's Honors Program, a statewide program for gifted high school students, for the State of Georgia.

1984–1988: Teaching Assistant at Brown University.

Fall 1987: Duties included teaching Advanced Placement Calculus with special emphasis on applications to physics and engineering.

Summer 1987: Duties included teaching differential calculus to minority premedical students through the Brown University Medical School.

Fall 1986: Duties included teaching Advanced Placement Calculus.

Fall 1985 to Spring 1986: Duties included teaching a sequence of two courses in calculus designed for slower students.

Fall 1984 to Spring 1985: Duties included conducting recitation sessions for a freshman calculus course and grading exams.

1983–1988: Tutor at Brown University.

1980–1983: Math Lab instructor at The University of Georgia. Duties included helping calculus and pre-calculus students with their homework.

University Service

2006–present: Served on the Freshman Math Committee

2005–2006: Served on the Faculty Senate at the University of West Georgia

2005–2006: Member of the Post Tenure Review Appeals Committee

2005–: Faculty Adviser for the UWG Paintball Team

2004: Served on the Post Tenure Review Committee for Professor Karen Smith

2004: Served on the Post Tenure Review Committee for Professor Bobby Powell

2004–2005: Member of the Post Tenure Review Appeals Committee

2004–present: Member of the Undergraduate Curriculum Committee

2003–2006: Adviser of the UWG Gamers at the University of West Georgia.

2002: Elected to the Faculty Senate at the University of West Georgia

2001–2006: Chair of the Library Committee in the Department of Mathematics

2001–2002: Chair of the Undergraduate Curriculum Committee in the Department of Mathematics

2001–2002: Member of the Faculty Evaluation and Teaching Load Committee in the Department of Mathematics

2001–2002: Member of the Applied Mathematics Hiring Committee in the Department of Mathematics

2000-2001: Elected member of the University Post-Tenure Review Appeal Committee

2000–2001: Member of the Department of Mathematics Hiring Committee

1999: Served on the Post Tenure Review Committee for Professor Edith Maxwell

1999–2001: Member of the College of Arts and Science Promotion and Tenure Advisory Committee

1999–2001: Chair of the Department of Mathematics Promotion and Tenure Committee

1999–2001: Member of the Department of Mathematics Advisory Committee

1999–2000: Served on hiring committee to fill three assistant professorships and several instructorships.

1998: Served on the Post Tenure Review Committee for Professor Joe Sharp

1998–present: Member of the Department of Mathematics Promotion and Tenure Committee

1997–1998: Member of the Teacher Education Advisory Committee

1997–1999: Member of the College of Arts and Science Executive Committee

1997–2003: Adviser of the Gay, Bisexual, Straight Alliance at the University of West Georgia

1998–1999: Served on hiring committee to fill three assistant professorships and several instructorships.

1994–1999: Served on the Executive Committee in the Department of Mathematics.

Chaired a subcommittee that designed an applied mathematics option for the Bachelor of Science Degree in Mathematics and constituted a subcommittee that designed a mathematical modeling course as part of this option

1993–2006: Coadviser to Kappa Mu Epsilon mathematics honor society

1997–1998: Served on hiring committee to fill one assistant professorship and several instructorships

1996–1997: Served on hiring committee to fill two assistant professorships

1995–1997: Member of the Advisory Committee to the Dean of the School of Arts and Sciences. Served on subcommittee that selected slate of candidates for school-wide elections

1995–1996: Served on hiring committee to fill two assistant professorships

1994–1995: Served on hiring committee to fill three instructorships. Recommended hiring of Kae Harrison, Leslie Redwine, and Paul Lupica

1991–1993: Served on the Undergraduate Committee in the Division of Mathematics and Computer Science overseeing the degree programs in mathematics. During the year 1991–1992, served as chair of the committee. Under my leadership the committee added an undergraduate course in topology, a second semester of advanced calculus, and a second semester of abstract algebra to the undergraduate curriculum. Further, the curriculum was changed to require completion of one sequence of two courses

Fall, 1991: Served as faculty representative on the Coeducational Housing Committee. As a member of this committee, I chaired a subcommittee that was responsible for devising plans for expanding coeducational housing opportunities on campus. One of these plans was implemented in the 1992–1993 academic year

1988–1991: Served on the Graduate Committee in the Division of Mathematics and Computer Science overseeing the Master of Arts program in mathematics at Northeast Missouri State University (now Truman State University). I am the primary author of a Five-Year Planning Document for the Master of Arts Program in Mathematics and the designer of an integrated five-year, bachelor/master program in mathematics, allowing exceptional undergraduates to complete both degrees in five years

1990–1992: Elected to represent the Division of Mathematics and Computer Science on the Faculty Senate and the Graduate Council, a university-wide committee overseeing the graduate program. As a member of the Faculty Senate, I represented the faculty on the

university-wide Coeducational Housing Committee during Fall Semester, 1991. As a member of the Graduate Council, I was the primary author of the Graduate Student Grievance Policy, which was adopted by the University

1988–1991: Faculty Associate in Missouri North Residential College. This program is designed to integrate the classroom experience with the residential experience for a complete learning environment

Community Service

1994–1999: Member of the McDaniel-Curtis Camp of the Sons of Confederate Veterans.

1994–present: Member of the St. Margaret's Episcopal Church.

1990–1993: Member of the vestry and junior warden of Trinity Episcopal Church. Elected to serve as a representative to the conventions of the Episcopal Diocese of Missouri. Participated in the Special Convention of the Diocese of Missouri for the election of a Bishop Coadjutor in October, 1990.

1989–1991: Member of the Board of Directors of Planned Parenthood of Northeast Missouri.

References

Theodore Shifrin (The University of Georgia)

Thomas F. Banchoff (Brown University)

Bruno Harris (Brown University)

Thomas J. Sharp (University of West Georgia)

Karen H. Smith (University of West Georgia)

Wendy C. Davidson (Georgia Perimeter College & State University)

Anthony J. Giovannitti (Clayton State University)