SCOTT THOMAS CHAPMAN

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PERSONAL

Born: May 9, 1959 in Pittsburgh, Pennsylvania.

EDUCATION

Ph.D. in Mathematics, The University of North Texas, Denton, Texas, 1987. Dissertation, *Invertible ideals and the strong two-generator property in some polynomial subrings*, directed by Dr. N. H. Vaughan.

M.S. in Mathematics, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, 1984. Master's project, *Algebraic Number Theory in* $\mathbf{Q}[\sqrt{-5}]$, directed by Dr. W. W. Smith.

B.S. (cum laude) in Mathematics and Politics, Wake Forest University, Winston-Salem, North Carolina, 1981. Senior honors paper in Mathematics, *Polya's Theory of Counting*, directed by Dr. F. T. Howard.

POSITIONS HELD

Professor, Trinity University, 1999- .

Associate Professor, Trinity University, 1993-1999.

Assistant Professor, Trinity University, 1987-1993.

Teaching Fellow, The University of North Texas, 1984-1987.

Research Assistant under the direction of Dr. R. D. Mauldin, The University of North Texas, 1985-1987.

Graduate Teaching Assistant, The University of North Carolina at Chapel Hill, 1981-1984.

Research Assistant under the direction of Dr. W.W. Smith, The University of North Carolina at Chapel Hill, Summer 1982.

Summer Intern, Office of Governor James B. Hunt, Jr. of the State of North Carolina, Summer 1981.

Teaching Assistant under the direction of Dr. F.T. Howard at Wake Forest University, Fall 1980.

HONORS

Educational Grant, Baldwin-Whitehall Education Association, 1977.

National Academic Grant, Alpha Sigma Phi Fraternity, 1980-1981.

President, Treasurer, and Secretary, Alpha Sigma Phi Fraternity, Beta Mu Chapter, Wake Forest University, 1977-1981.

Graduated with departmental honors in Mathematics, Wake Forest University, 1981.

President, Graduate Mathematics Association, The University of North Carolina at Chapel Hill, 1983.

Elected to the honor society of Phi Kappa Phi, The University of North Texas, 1986.

Summer Teaching Assistant/Research Assistant Scholarship, The University of North Texas, Summer 1986.

Outstanding Teaching Assistant/Teaching Fellow, The University of North Texas, 1987.

John M. Bennett Fellow, Trinity University, 1987-1990.

Nominated for a National Science Foundation Presidential Young Investigator Award, 1988.

Named an Outstanding Centennial Alumnus of the College of Arts and Sciences at the University of North Texas, April 1990.

J. William Fulbright Research Scholar, 1995.

PROFESSIONAL ORGANIZATIONS

American Mathematical Society, 1981-present.

Mathematical Association of America, 1985-present.

Fulbright Association, 1995-present.

PAPERS PRESENTED

- Meetings of the American Mathematical Society

  830th meeting, Denton, Texas, October 1986.

  831st meeting, San Antonio, Texas, January 1987.

  839th meeting, Atlanta, Georgia, January 1988.

  847th meeting, Phoenix, Arizona, January 1989.

  854th meeting, Louisville, Kentucky, January 1990.

  861st meeting, Denton, Texas, November 1990 (special session; commutative algebra)

863rd meeting, San Francisco, California, January 1991.

871st meeting, Baltimore, Maryland, January 1992.

878th meeting, San Antonio, Texas, January 1993 (special session on commutative algebra).

879th meeting, Knoxville, Tennessee, March 1993 (special session on commutative algebra).

909th meeting, Iowa City, Iowa, March 1996 (special session on commutative algebra).

915th meeting, Chattanooga, Tennessee, October 1996 (special session on commutative algebra).

936th meeting, Winston-Salem, North Carolina, October 1998 (special session on commutative algebra).

949th meeting, Charlotte, North Carolina, October 1999 (special session on commutative algebra).

970th meeting, Chattanooga, Tennessee, October 2001 (special session on commutative algebra).

977th meeting, Pisa, Italy, June 2002 (special session on commutative rings and integer-valued polynomials).

- Meetings of the Mathematical Association of America

  Texas Section, Eastfield College, Dallas, Texas, April 1986.

  Texas Section, Tarleton State University, Stephenville, Texas, April 1987.

  Texas Section, Trinity University, San Antonio, Texas, April 1988.

  Texas Section, Texas Lutheran College, Seguin, Texas, April 1989.

- 1994 John H. Barrett Memorial Lectures, Commutative Algebra Mini-Conference, The University of Tennessee at Knoxville, April 1994.
- 1996 Factorization in Integral Domains, Commutative Algebra Mini-Conference, The University of Iowa, Iowa City, Iowa, March 1996.
- Algebra Meeting, Faculté des Sciences de Saint-Jérôme, Marseille, France, June 1997.
- Commutative Algebra Workshop, Universitá degli Studi, Roma Tre, Rome, Italy, June 1999.
- Commutative Algebra Conference in honor of James A. Huckaba, The University of Missouri, Columbia, Missouri, December 1999.
- Second International Encounter on Integer-Valued Polynomials, CIRM (Luminy, France), May-June 2000.
- Algebra Conference Venezia 2002, Venice, Italy, June 2002.

SELECTED COLLOQUIA

Universitá degli Studi di Roma "LA SAPIENZA", Rome, Italy, May 1990, June 1990, and June 1991.

Karl-Franzens-Universität Graz, Institut für Mathematik, Graz, Austria, June 1990, April 1995, July 1996 and February 2000.

The University of Tennessee, Knoxville, Tennessee, January 1991 and May 1992.

Universität Bremen, Mathematisches Kolloquium, Bremen, Germany, June 1991, June 1995 and June 1996.

Florida State University, Tallahassee, Florida, March 1994.

The University of California at Riverside, August 1994.

The University of North Texas, December 1994.

Terza Universitá degli Studi di Roma, Rome, Italy, February 1995 and March 1995.

Saint-Jérome Université d'Aix-Marseille III, Marseille, France, March 1995.

Wake Forest University, Winston-Salem, North Carolina, October 1996.

Allegheny College, Meadville, Pennsylvania, November 1999.

Universidad de Granada, Granada, Spain, March 2000.

Loyola Marymount University, Los Angeles, California, March 2001.

Texas Christian University, Fort Worth, Texas, January 2002.

St. Mary's University, San Antonio, Texas, February 2002.

University of Texas-Pan American, Edinburg, Texas, February 2002.

GRANTS AND FELLOWSHIPS

John M. Bennett Junior Faculty Fellowship at Trinity University, Summers of 1988, 1989, and 1990.

Summer Stipend Grant from the Trinity University Faculty Development Committee, Summer 1991.

Fellowship for Foreign Mathematicians for study at Terza Universit á degli Studi di Roma from the Consiglio Nazionale delle Ricerche (CNR), December 1994 - April 1995.

J. William Fulbright Senior Foreign Research Scholarship for study at Karl-Franzens Universität, Graz, Austria, April 1995 - June 1995.

Fellowship for a Study Visit to Universität Bremen from Deutscher Akademischer Austauschdienst (DAAD), June 1996 - July 1996.

Summer Stipend Grant from the Trinity University Faculty Development Committee, Summer 1997.

Co-Principal Investigator on National Science Foundation Research Experience for Undergraduates grant "Undergraduate Research Experiences in Mathematics" at Trinity University, Summer 1997–Summer 1999.

Principal Investigator on National Science Foundation Research Experience for Undergraduates grant "Undergraduate Research Experiences in Mathematics" at Trinity University, Summer 2001–Summer 2003.

Summer Stipend Grant from the Trinity University Faculty Development Committee, Summer 2002.

OTHER PROFESSIONAL ACTIVITIES

Associate Editor for the *International Journal of Commutative Rings* (first issue Spring 2001).

Author for *Mathematical Reviews*.

Referee for *The Journal of Number Theory* (1991), *Communications in Algebra* (1991, 1995, 1996, 1997, 1998, 1999, 2000, 2001), *The Journal of Natural Sciences and Mathematics* (1992, 1993, 1994), *The Proceedings of the Fes Conference in Commutative Ring Theory* (1993, 1995, 1996, 1998), *The Houston Journal of Mathematics* (1995), *The Pacific Journal of Mathematics* (1998), *Discrete Mathematics* (1998, 2001), *Arabian Journal of Science and Engineering* (2000), *Ideal Theoretic Methods in Commutative Algebra* (2000), *Journal of Symbolic Computation* (2001), and the National Science Foundation (1994).

Chaired AMS contributed papers session on Number Theory, Rings, and Algebras at the 854th meeting of the AMS in Louisville, Kentucky, January 1990.

Co-chaired and co-organized special session on Commutative Algebra at the 861st meeting of the AMS in Denton, Texas, November 1990.

Chaired AMS contributed papers session on Commutative Algebra at the 871st meeting of the AMS in Baltimore, Maryland, January 1992.

Chaired and organized special session on Commutative Algebra at the 878th meeting of the AMS in San Antonio, Texas, January 1993.

Co-chaired and co-organized special session on Commutative Algebra at the 928th meeting of the AMS in Albuquerque, New Mexico, November 1997.

Chaired and organized special session on Commutative Algebra at the 939th meeting of the AMS in San Antonio, Texas, January 1999.

Co-chaired and co-organized special session on Commutative Rings and Monoids at the 962nd meeting of the AMS in New Orleans, Louisiana, January 2001.

Reader for the AP Calculus Exam, June 1992, June 1993, June 1994 and June 1997.

Textbook reviewer for Harper and Row, Prentice Hall, McGraw-Hill, Brooks/Cole, and John Wiley and Sons.

UNIVERSITY SERVICE

Chairman, Athletic Department Self-Study for 1997 Southern Association of Colleges Accreditation.

Member, University Steering Committee for 1997 Southern Association of Colleges Accreditation.

Trinity University Faculty Representative to the National Collegiate Athletic Association, 1990 - 1999.

Elected to Executive Committee of the Faculty Athletics Representatives Association (1994 - 1996).

Chairman, University Athletic Council, 1989 - 1990, 1997-1998.

Chairman, Head Football Coach Search Committee, 1990.

Elected to Trinity University Faculty Senate, 1990.

Member of Search Committees for Faculty appointments in Mathematics (1989, 1990, 1997, 1999, 2000), Engineering (1989), and Chemistry (2000).

Also member of Search Committees for the appointment of the Head Men's Basketball Coach (1989), Head Men's Soccer Coach (1991), and Athletic Director (1993).

UNDERGRADUATE RESEARCH PROJECTS DIRECTED

Trinity University Honors Theses in Mathematics.

- William Thill, *On the Davenport Constant and Cross Number of a Finite Abelian Group*, 1994.
- Andrew Crabbe, *Generalized Factorial Functions and Binomial Coefficients*, 2001.

Trinity University Research Experience for Undergraduates in Mathematics Program.

- Kala Schrager (University of Oregon), *Equivalence Classes of Minimal Zero-Sequences*, 1997.
- Jeremy Herr (University of Oklahoma) and Natalie Rooney (University of Texas at Austin), *A Factorization Formula for Class Number Two*, 1998.
- Victor DeLorenzo (Grove City College) and Holly Swisher (University of Oregon), *On the Asymptotic Behavior of Irreducibles in Block Semigroups*, 1999.
- Paul Baginski (Carnegie Mellon University), Kathryn McDonald (University of Oregon) and Lara Pudwell (Valparaiso University), *On Cross Numbers of Minimal Zero-Sequences in Certain Cyclic Groups*, 2001.
- Matt Holden (Pomona College) and Terri Moore (University of Washington), *Asymptotic Elasticity and the Full Elasticity Property in Atomic Monoids*, 2002.

REFEREED PUBLICATIONS

(*Asterisks denote undergraduate co-authors)

[1] "Integer-valued polynomials and almost division algorithms," *J. Nat. Sci. Math.* **28**(1988), 239-256.

[2] "On a characterization of algebraic number fields of class number less than three," (with W.W. Smith) *J. Algebra* **135**(1990), 361-366.

[3] "Factorization in Dedekind domains with finite class group," (with W.W. Smith) *Israel J. Math.* **71**(1990), 65-95.

[4] "Characterizing strong two-generators in K$[x^2, x^3]$," *Houston J. Math.* **16**(1990), 217-229.

[5] "A Theorem on generating ideals in certain semigroup rings," (with N. Vaughan) *Boll. U.M.I.* **5-A**(1991), 41-49.

[6] "On the HFD, CHFD, and k-HFD properties in Dedekind domains," (with W.W. Smith) *Comm. Algebra* **20**(1992), 1955-1987.

[7] "A simple example of non-unique factorization in integral domains," *Amer. Math. Monthly* **99**(1992), 943-945.

[8] "On the k-HFD property in Dedekind domains with small class group," (with W.W. Smith) *Mathematika* **39**(1992), 330-340.

[9] "Rational elasticity of factorizations in Krull domains," (with D.D. Anderson, D.F. Anderson, and W.W. Smith) *Proc. Amer. Math. Soc.* **117**(1993), 37-43.

[10] "On the lengths of factorizations of elements in an algebraic number ring," (with W.W. Smith) *J. Number Theory* **43**(1993), 24-30.

[11] "An analysis using the Zaks-Skula constant of element factorizations in Dedekind domains," (with W.W. Smith) *J. Algebra* **159**(1993), 176-190.

[12] "Factorization in K$[x^2, x^3]$," (with D.F. Anderson, F. Inman*, and W.W. Smith) *Arch. Math. (Basel)* **61**(1993), 521-528.

[13] "Some factorization properties of Krull domains with infinite cyclic divisor class group," (with D.F. Anderson and W.W. Smith) *J. Pure Appl. Algebra* **96**(1994), 97-112.

[14] "Overrings of half-factorial domains," (with D.F. Anderson and W.W. Smith) *Can. Math. Bull.* **37**(1994), 437-442.

[15] "On Krull half-factorial domains with infinite cyclic divisor class group," (with D.F. Anderson and W.W. Smith) *Houston J. Math.* **20**(1994), 561-570.

[16] "Some factorization properties of the ring of integer-valued polynomials," (with D.F. Anderson, P-J. Cahen and W.W. Smith) *Lecture Notes in Pure and Applied Mathematics*, Marcel Dekker, **171**(1995), 125-142.

[17] "On the Davenport constant, the cross number, and their application to factorization theory," *Lecture Notes in Pure and Applied Mathematics*, Marcel Dekker, **171**(1995), 167-190.

[18] "Overrings of half-factorial domains, II," (with D.F. Anderson and W.W. Smith) *Comm. Algebra* **23**(1995), 3961-3976.

[19] "Factorization sets and half-factorial sets in integral domains," (with D.F. Anderson and W.W. Smith) *J. Algebra* **178**(1995), 92-121.

[20] "Finite cyclic groups and the k-HFD property," (with W.W. Smith) *Colloq. Math.* **70**(1996), 219-226.

[21] "On a generalization of a theorem of Zaks and Skula," (with W. Thill*) *Proc. Royal Irish Aca.* **96A**(1996), 79-83.

[22] "On cross numbers of minimal zero sequences," (with A. Geroldinger) *Australasian J. Comb.* **14**(1996), 85-92.

[23] "Two classes of ideals determined by integer-valued polynomials," (with P-J. Cahen, K. Roegner and W.W. Smith) *Rend. Mat. (Roma)* **16**(1996), 625-636.

[24] "A basis for the ring of polynomials integer-valued on prime numbers," (with J-L. Chabert and W.W. Smith) *Lecture Notes in Pure and Applied Mathematics*, Marcel Dekker, **189**(1997), 271-284.

[25] "Krull domains and monoids, their sets of length and associated combinatorial problems," (with A. Geroldinger) *Lecture Notes in Pure and Applied Mathematics*, Marcel Dekker, **189**(1997), 73-112.

[26] "Algebraic properties of the ring of polynomials integer-valued on prime numbers," (with J-L. Chabert and W.W. Smith) *Comm. Algebra* **25**(1997), 1945-1959.

[27] "Generalized sets of length," (with W.W. Smith) *J. Algebra* **200**(1998), 449-471.

[28] "Integral domains with highly non-unique factorization," (with D.D. Anderson and J. Kwak) *Results in Mathematics* **33**(1998), 22-29.

[29] "Criteria for unique factorization," (with D.D. Anderson, F. Halter-Koch, and M. Zafrullah) *J. Pure Appl. Algebra* **127**(1998), 205-218.

[30] "Generators of maximal ideals in the ring of integer-valued polynomials," (with W.W. Smith) *Rocky Mountain J. Math.* **28**(1998), 95-105.

[31] "The Skolem property in rings of integer-valued polynomials," (with J-L. Chabert and W.W. Smith) *Proc. Amer. Math. Soc.* **126**(1998), 3151-3159.

[32] "Minimal zero-sequences and the strong Davenport constant," (with M. Freeze and W.W. Smith) *Discrete Math.* **203**(1999), 271-277.

[33] "A factorization formula for class number two," (with J. Herr* and N. Rooney*) *J. Number Theory* **79**(1999), 58-66.

[34] "On the elasticities of Krull domains with finite cyclic divisor class group," (with D.F. Anderson) *Comm. Algebra* **28**(2000), 2543–2553.

[35] "Monoids determined by a homogenous linear Diophantine equation and the half-factorial property" (with U. Krause and E. Oeljeklaus) *J. Pure Appl. Algebra* **151**(2000), 107–133.

[36] "On generalized lengths of factorizations in Dedekind and Krull domains," (with M. Freeze and W.W. Smith) *Non-Noetherian Commutative Ring Theory*, Kluwer Academic Publishers, 117–138.

[37] "Half-factorial domains, a survey," (with J. Coykendall) *Non-Noetherian Commutative Ring Theory*, Kluwer Academic Publishers, 97–116.

[38] "100 Problems in commutative ring theory," (with S. Glaz) *Non-Noetherian Commutative Ring Theory*, Kluwer Academic Publishers, 459–476.

[39] "An arithmetical characterization of finite elementary 2-groups," (with W.W. Smith) *Comm. Algebra* **29**(2001), 1249–1257.

[40] "Equivalence classes of minimal zero-sequences modulo a prime," (with M. Freeze and W.W. Smith) *Lecture Notes in Pure and Applied Mathematics* Marcel-Dekker, **220**(2001), 133–146.

[41] "On the asymptotic behavior of irreducibles in block semigroups," (with V. DeLorenzo* and H. Swisher*) *Semigroup Forum* **63**(2001), 34–48.

[42] "Sets of lengths in $V + XB[X]$ domains," (with N. Gonzalez and S. Pellerin) *Arabian J. Sci. Engrg.* **26**(2001), 69–82.

[43] "Computing the elasticity of a Krull monoid," (with J.I. García-García, P.A. García-Sánchez and J.C. Rosales) *Linear Algebra Appl.* **336**(2001), 201–210.

[44] "The strong two-generator property in rings of integer-valued polynomials determined by finite sets," (with A. Loper and W.W. Smith) *Arch. Math. (Basel)* **78**(2002), 372–377.

[45] "On Davenport's constant of finite abelian groups," (with M. Freeze, W. D. Gao, and W. W. Smith) *Far East J. Math. Sci.* **5** (2002), no. 1, 47–54.

[46] "On Diophantine monoids and their class groups," (with U. Krause and E. Oeljeklaus) to appear in *Pacific J. Math.*

[47] "Strongly two-generated ideals in rings of integer-valued polynomials determined by finite sets," (with A. Loper and W. W. Smith) to appear in *C.R. Math. Rep. Acad. Sci. Canada*.

[48] "On cross numbers of minimal zero sequences in certain cyclic groups," (with P. Baginski*, K. McDonald* and L. Pudwell*) to appear in *Ars Combin.*

[49] "On the asymptotic values of length functions in Krull and finitely generated commutative monoids," (with J.C. Rosales) to appear in *J. Aust. Math. Soc.*

[50] "Inside factorial monoids and integral domains," (with F. Halter-Koch and U. Krause) to appear in *J. Algebra*.

[51] "On the number of factorizations of an element in an atomic monoid," (with J.I. García-García, P.A. García-Sánchez and J.C. Rosales) to appear in *Adv. in Appl. Math.*

PAPERS SUBMITTED OR IN PROGRESS

[1] "On Factorization in Block Monoids formed by $\{1, a\}$ in $\mathbb{Z}_n$," (with W.W. Smith) submitted.

[2] "On full elasticity and asymptotic elasticity in atomic monoids," (with M. Holden* and T. Moore*) in preparation.

[3] "Integer-valued polynomials and restricted elasticity," (with W. W. Smith) in preparation.

BOOKS

[1] *Non-Noetherian Commutative Ring Theory*, (edited with S. Glaz) Kluwer Academic Publishers, Boston, 2000.

COURSES TAUGHT

- Remedial Mathematics
- Precalculus
- Mathematical Concepts
- Structure of the Number System, I and II
- Introduction to Logic
- Introduction to Probability and Statistics
- Introduction to Statistical Analysis
- Calculus I, II and III
- Linear Algebra
- Combinatorial Analysis
- Abstract Algebra I and II
- Sets, Relations, and Functions
- Introduction to the Theory of Numbers
- Differential Equations
- Foundations of Mathematics