

CURRICULUM VITAE

[14 November 2008]

Richard Delaware **Associate Clinical Professor** (non-regular)

Contact

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Education

- Ph.D. 2000 Mathematics University of Missouri - Kansas City **Major Professor:** James Foran
- M.A. 1977 Mathematics University of Kansas
- B.S. 1974 Mathematics Santa Clara University (cum laude)

Certifications

- 2002-2005 State of Missouri Teacher Certification in Mathematics Grades 9-12
 - 2003-2005 State of Missouri Gifted and Talented Education Endorsement Grades K-12
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Awards/Honors

- 2005, 2006 Faculty & Staff Appreciation Certificate (Activity & Program Council) UMKC
 - 2004-2006 Who's Who Among America's Teachers (top 2%; nominated by student)
 - 2003 Founding Faculty Member Award, 19 years at the Mathematics and Physics Institute UMKC
 - 1995 Dean's Award for Outstanding Teaching (non-regular faculty) UMKC
 - 1990 Certificate of Appreciation (Inroads minority program) INROADS
 - 1989 Educational Partners Award (Inroads minority program) INROADS
 - 1989 Nominated for a Helen Kemper Doctoral Fellowship UMKC
 - 1984 Superior Teaching Award (One of 5 awarded out of ~200 Graduate Teaching Assistants) UMKC
 - 1983-1984 Graduate Teaching Assistant Department of Physics UMKC

 - 1975-77 U. G. Mitchell Scholarship (Fees) University of Kansas Department of Mathematics
 - 1974-77 Graduate Teaching Assistantship/Assist. Instructor University of Kansas Department of Mathematics
 - 1972-74 Wm. B. Turner Scholarship (Full) Santa Clara University
 - 1972-present Pi Mu Epsilon National Honorary Mathematics Fraternity
 - 1972-present Alpha Sigma Nu Jesuit National Honor Society
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Professional Employment

- 2004-present **Associate Clinical Professor** UMKC Department of Mathematics and Statistics
 - 1984-2004 Visiting Instructor UMKC Department of Mathematics and Statistics
 - 1998-2003 **Associate Director** UMKC Mathematics and Physics Institute
 - 1984-2003 Mathematics Coordinator UMKC Mathematics and Physics Institute

 - 1986-1990 Instructor Mathematics INROADS (minority program) - Kansas City, MO
 - 1987 Summer Instructor Mathematics Johnson County Community College
 - 1986 Summer Instructor Computer Science UMKC Computer Science Division
 - 1981-1984 Part-Time Lecturer Mathematics UMKC Department of Mathematics and Statistics
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Teaching Activity July 1, 2003 - June 30, 2008 (last 5 years)

Semester	Year	On-Campus Courses	VSI On-Campus	VSI in Rural High Schools
Fall	2003	Math 402 (3) Stat 436 (3) Math 444 (3)	Math 110 (3), 3 sections	-----
Winter	2004	Math 301 (3) Math 412 (3) Math 464 WI (3)	Math 110 (3), 1 section	Math 110 (3), 10 sections
Summer	2004	Math 220 (4)	Math 110 (3), 2 sections	-----
Fall	2004	Math 402 (3) Stat 436 (3) Math 444 (3)	Math 110 (3), 3 sections	-----
Winter	2005	Math 105 (3) Math 412 (3) Math 464 WI (3)	Math 110 (3), 1 section	Math 110 (3), 12 sections
Summer	2005	-----	-----	-----
Fall	2005	Math 105 (3) Math 301 (3) Math 402 (3)	Math 110 (3), 4 sections Math 210 (4), 1 section	-----
Winter	2006	Math 412 (3) Math 414 (3) Math 464 WI (3)	Math 110 (3), 1 section Math 210 (4), 1 section	Math 110 (3), 14 sections Math 210 (4), 1 section
Summer	2006	-----	-----	-----
Fall	2006	Math 402 (3) Math 407 (3) Math 424 (3)	Math 110 (3), 1 section Math 210 (4), 1 section	-----
Winter	2007	Math 464 WI (3) Math 414 (3) Math 5514 (3) Math 5510 (3)	Math 210 (4), 1 section	Math 110 (3), 8 sections
Summer	2007	-----	-----	-----
Fall	2007	Math 402 (3) Math 407 (3) Math 424 (3) Math 5524 (3)	Math 210 (4), 1 section	-----
Spring	2008	Math 220 (4) Math 464 WI (3) [+ Course release]	Math 210 (4), 1 section	Math 110 (3), 10 sections
Summer	2008	-----	Math 110 (3), 2 sections	-----

Undergraduate UMKC Courses Taught, 1981-present

- Math 100 Intermediate Algebra
- Math 105 The Language of Mathematics
- Math 110 College Algebra
- Math 150 Finite Mathematics
- Math 210 Calculus I
- Math 220 Calculus II
- Math 250 Calculus III
- Math 300 Linear Algebra I
- Math 301 On Solid Ground: Sets & Proof
- Math 345 Ordinary Differential Equations
- Math 402 Advanced Analysis I
- Math 407 Introduction to Complex Variables
- Math 412 Advanced Analysis II
- Math 414 Mathematics for Secondary Teachers: Algebra & Analysis
- Math 424 Mathematics for Secondary Teachers: Geometry
- Stat 436 Introduction to Mathematical Statistics I
- Math 444 Modern Geometries
- Math 464 History of Mathematics, Writing Intensive
- CS 301 Discrete Structures (now CS 191)
- Math 211 Fortran 77 Programming (no longer taught)

Graduate UMKC Courses Taught, 2007-present

- Math 5510 Complex Variables I
- Math 5513 Real Variables I
- Math 5514 Mathematics for Secondary Teachers: Algebra & Analysis
- Math 5524 Mathematics for Secondary Teachers: Geometry

Productivity

Research Areas: Hausdorff Measure, Real Analysis, Geometry of Fractal Sets

Other Interests: History of Mathematics, Undergraduate Mathematics Education

Publications - Research/Peer-Reviewed

1. "Sets Whose Hausdorff Measure Equals Method I Outer Measure," University of Missouri - Kansas City, Ph.D. Dissertation (2000).
2. "Graphs of Functions, Regular Sets and s-straight Sets," (with Larry Eifler), Real Analysis Exchange, 26(2), (2001), 885-892.
3. "Sets Whose Hausdorff Measure Equals Method I Outer Measure," Real Analysis Exchange, 27(2), (2002), 535-562.
4. "Graphs of Convex Functions are σ 1-straight," Rocky Mountain Journal of Mathematics, 33(3) (2003), 787-796.
5. "Every Set of Finite Hausdorff Measure is a Countable Union of Sets Whose Hausdorff Measure and Content Coincide," Proceedings of the American Mathematical Society, 131(8) (2003), August, 2537-2542.

Publications – Other

1. "Mathematics and Physics Institute (MPI) **Newsletter**," Editor/Writer, 1986-2003, **83 issues**, 680 pages total.
2. Problem solutions published in The College Mathematics Journal & American Mathematical Monthly, 1986-88.
3. "MPI - Calculus I: PC Notes and Labs," Derive **Laboratory Manual**, 1994-2003, 100 pages.
4. "MPI - Calculus II: PC Notes and Labs," Derive **Laboratory Manual**, 1994-2003, 70 pages.
5. "MPI - Calculator Manual," Sharp graphics **Calculator Manual**, 1995-2003, 25 pages.
6. "Math Mania" article, Focus (MAA Newsletter), December 1996, p.16.
7. "Every s-set is a Countable Union of s-straight sets," Summer Symposium in Real Analysis XXV Conference Reports, May 2001, Real Analysis Exchange, (2002), 21-24.

Video Series Created

- 1998 **VSI College Algebra** 39 videos (~43 hours) Written reviews from faculty at UM – Columbia, and Emporia State University are available.
- 2005 **VSI Calculus I** 31 videos (~28 hours)

Courses Created/Introduced

- **MPI Calculus I and II**, Math 210 and 220, designed over 1984 - 2003 for gifted and talented high school seniors incorporating the best of calculus reform, graphics calculators, a computer algebra system (Derive), writing assignments, active problem solving sessions, and special projects.
- **History of Mathematics, Writing Intensive**, Math 464 WI, designed 1998, first taught 2000, only WI course in mathematics; includes historical proof explication essays and a field trip to the Linda Hall Library Rare Book Room.
- **VSI College Algebra**, Math 110, video course, offered **since Fall 1998** off the UMKC campus to students at rural high schools, and on the UMKC campus to students requiring more time and assistance to succeed.
- **The Language of Mathematics**, Math 105, first offered Winter 2005.
- **Mathematics for Teachers** sequence of courses created 2004:
 - **Math 204** Mathematics for Teachers: Mathematical Immersion
 - **Math 214** Mathematics for Teachers: Algebra
 - **Math 224** Mathematics for Teachers: Geometry
 - **Stat 234** Mathematics for Teachers: Probability and Statistics
 - **Math 244** Mathematics for Teachers: Calculus
 - **Math 414/5514** Mathematics for Secondary Teachers: Algebra and Analysis
 - **Math 424/5524** Mathematics for Secondary Teachers: Geometry
- **VSI Calculus I**, Math 210, video course, offered **since Fall 2005** to students at rural high schools, and on the UMKC campus to students requiring more time and assistance to succeed.

Expository Mathematics Talks

(53 different talks; 70 presentations of these talks)

- 1. e and π are Irrational.**
Jan. 20, 1988, UMKC Expository Talks Series.
- 2. Two World Class Series: $\Sigma 1/n$ and $\Sigma 1/n^2$.**
Feb. 17, 1988, UMKC Expository Talks Series.
Apr. 3, 1990, Kappa Mu Epsilon (Mathematics Honor Society) Banquet Speaker, Wm. Jewell College.
- 3. Polya's Orchard Problem.**
Apr. 6, 1988, UMKC Expository Talks Series.
- 4. e is Transcendental.**
Sept. 7, 1988, UMKC Expository Talks Series.
- 5. Measuring Voting Power in a Presidential Election.**
Sept. 21, 1988, UMKC Expository Talks Series.
- 6. Question: Can an Arbitrary Angle be Trisected? Answer: Yes, No, Almost, and Who Cares?**
Jan. 25, 1989, UMKC Expository Talks Series.
- 7. The Leslie Matrix Model of Population Projection: A UMAP Module.**
Sept. 7, 1989, UMKC Expository Talks Series.
- 8. The Jordan Curve Theorem: A Proof of the Piecewise Smooth Case.**
Oct. 19, 1989, UMKC Expository Talks Series.
- 9. En Route to Chaos: Sarkovskii's Theorem.**
Jan. 24, 1990, UMKC Expository Talks Series.
Apr. 28, 1993, Avila College, Mathematics Dept., National Mathematics Awareness Week.
Feb. 16, 1994, Univ. of Missouri - Columbia, Mathematics Dept., Arts & Sciences Week.
Sept. 30, 2005, UMKC Expository Talks Series.
- 10. 1-1+1-1+1-...And All That: Coming to Terms with Divergent Series.**
Sept. 27, 1990, UMKC History of Mathematics Course Guest Speaker.
- 11. The Cayley-Hamilton Theorem: History and Proofs.**
Nov. 30, 1990, UMKC Expository Talks Series.
- 12. Fermat's 'Last Theorem' c.1637-1993 (pre-Wiles): The Most Famous Marginal Note in Mathematical History.**
Mar. 22, 1991, UMKC Expository Talks Series.
Feb. 26, 1993, University of Iowa, Iowa City, IA, Mathematics Dept.
- 13. There is NO Finite Projective Plane of Order 10: A Computer-Aided 'Proof'.**
Dec. 6, 1991, UMKC Expository Talks Series.
- 14. Pascal's Triangle Before Pascal: An Historical Picturebook.**
Feb. 21, 1992, UMKC Expository Talks Series.
Sept. 27, 1994, Park University, Mathematics Dept.
- 15. Will All N Become One? The Collatz Problem c.1930 - 1992.**
Apr. 24, 1992, UMKC Expository Talks Series.
Apr. 26, 1995, Avila College, Mathematics Dept., National Mathematics Awareness Week.
- 16. I Tell You 5 Times: Primes On Their Heads In A Sum Won't Converge!**
Dec. 4, 1992, UMKC Expository Talks Series.
- 17. Mathematical Cranks and Their Obsessions.**
Mar. 6, 1993, Kansas City Skeptical Society.
- 18. There are Infinitely Many Carmichael Numbers: An 82 Year Old Problem Solved.**
Apr. 23, 1993, UMKC Expository Talks Series.
- 19. As the Worm Turns c.1966 - 1993: What is the Area of the Smallest Convex Blanket That Will Cover Every Worm of Length 1?**
Sept. 10, 1993, UMKC Expository Talks Series.
Apr. 26, 1994, Avila College, Mathematics Dept., National Mathematics Awareness Week.
- 20. Borsuk's Question 1933 - 1993: Can You Partition Each Set in R^N of Diameter 1 Into $N + 1$ Sets of Diameter Less?**
Feb. 4, 1994, UMKC Expository Talks Series.
- 21. The Dinitz Conjecture 1978 - 1994: Partial Latin Squares Always Exist!**
Nov. 18, 1994, UMKC Expository Talks Series.
- 22. Kepler's Sphere-Packing Conjecture 1611-1995: What's The Best Way to Stack Oranges?**
Apr. 14, 1995, UMKC Expository Talks Series.
- 23. What's the Densest Way to Pack Equal Circles in a Square? c.1964-1995.**
Dec. 1, 1995, UMKC Expository Talks Series.
Apr. 25, 1996, Avila College, Mathematics Dept., National Mathematics Awareness Week.

24. **Can a Light in a Reflecting Room Always be Seen from Every Spot? Any Spot?**
 Feb. 9, 1996, UMKC Expository Talks Series.
 Mar. 27, 1996, Benedictine College, Discovery Day mathematics speaker, Kappa Mu Epsilon.
25. **Blind Statistics and the Challenger Accident.**
 May 19, 1996, Dedication Event of the Center for Inquiry - Midwest, Defending Science.
26. **Morley's Trisector Theorem c.1899: History and Proofs.**
 Nov. 21, 1996, Central Missouri State University, Kappa Mu Epsilon.
27. **Cascades, Fountains, and Showers: The Mathematical Patterns of Juggling.**
 Dec. 6, 1996, UMKC Expository Talks Series.
28. **Inner Reflections Upon Ellipses.**
 Mar. 21, 1997, UMKC Expository Talks Series.
29. **A Lesson in Dissection: Dehn Settles Hilbert's Third Problem.**
 Sept. 12, 1997, UMKC Expository Talks Series.
30. **$\sqrt{2}$: History and Proofs of Irrationality.**
 Jan. 30, 1998, UMKC Expository Talks Series.
31. **Fermat's Little Theorem is a One-Way Street Infinitely Often: The Prime Evasion of 561.**
 Apr. 4, 1998, Kappa Mu Epsilon Convention Keynote Speaker at Wm. Jewell College.
32. **Hippocrates of Chios Squares a Lune, ... But Can't Square a Circle!**
 Apr. 29, 1998, KCATM (Kansas City Area Teachers of Mathematics) Awards Banquet Speaker.
33. **It's All Corners!...The Failure of Intuition: Functions Continuous Everywhere But Differentiable Nowhere.**
 Sept. 11, 1998, UMKC Expository Talks Series.
 Nov. 17, 1998, Invited Speaker, Colloquium Series, Johnson County Community College.
34. **The Year 1000: What Mathematics Was Being Done at the Last Turn of the Millennium?**
 Apr. 9, 1999, Invited Address, Spring Meeting, MAA Missouri Section, Rockhurst University.
35. **From the 'Method' of Archimedes: The Area of a Parabolic Segment, By Levers and By Series.**
 Apr. 16, 1999, UMKC Expository Talks Series.
36. **Kissing Numbers: How Many Congruent Regular Polygons Can Kiss Another of Their Kind?**
 Nov. 30, 1999, Kappa Mu Epsilon, Benedictine College.
 Dec. 3, 1999, UMKC Expository Talks Series.
 Mar. 20, 2007, Kappa Mu Epsilon, University of Central Missouri
37. **Some Islamic Mathematics of The Year 1000**
 Mar. 27, 2000, Invited speaker, Emporia State University.
 Nov. 7, 2005, Invited speaker, William Jewell College
38. **The Area of an Enigmatic Ellipse: Holditch's Theorem.**
 Sept. 8, 2000, UMKC Expository Talks Series.
 Feb. 13, 2001, Invited Speaker, Colloquium Series, Johnson County Community College.
39. **Arrow's Impossibility Theorem: Is the Only Fair Voting System a Dictatorship?**
 Apr. 20, 2001, UMKC Expository Talks Series.
40. **The Tangential Triangle and Rectangle Problem: Erdos, Grunwald, and Polya.**
 Sept. 7, 2001, UMKC Expository Talks Series.
41. **Helge von Koch's 1904 paper on his famous "snowflake" curve: On a Continuous Curve without Tangents Constructible from Elementary Geometry.**
 Feb. 22, 2002, UMKC Expository Talks Series.
42. **The Longest Curve with Increasing Chords (Whose Endpoints are a Unit Apart) Has Length $2\pi/3$.**
 Sept. 27, 2002, UMKC Expository Talks Series.
43. **From Bishop Berkeley's 1734 Complaint to Colin MacLaurin's 1742 Response: The Calculus Finds Its Footing.**
 Nov. 8, 2002, UMKC Expository Talks Series.
44. **Quintessence of Dust: Georg Cantor Teases Apart the Real Number Line.**
 Mar. 7, 2003, UMKC Expository Talks Series.
45. **The Birth of Geometric Probability: The Needle Problem of Georges Louis le Clerc, Comte de Buffon.**
 Sept. 12, 2003, UMKC Expository Talks Series.
 Apr. 4, 2004, Midwest Junto for the History of Science, 47th Annual Meeting, Kansas City, MO.
46. **Some Proofs from Abraham de Moivre's *The Doctrine of Chances: A Method of Calculating the Probabilities of Events in Play* (1738, 2nd Ed.).**
 Mar. 19, 2004, UMKC Expository Talks Series.
47. **Are There 12 or 13 Kissing Spheres? The 1694 Isaac Newton – David Gregory Disagreement.**
 Sept. 3, 2004, UMKC Expository Talks Series.
 Apr. 14, 2005, Invited Colloquium Speaker, Northwest Missouri State University

48. **The 1673 ‘Transmutation Theorem’ of Leibniz: How he found area with Calculus, and proved $\pi/4 = 1 - 1/3 + 1/5 - 1/7 + \dots$**
Feb. 25, 2005, UMKC Expository Talks Series
 49. **Digging Test Pits into the History of Mathematics: How “Proof Explication” can build student confidence.**
Mar. 31, 2006, Keynote Address, MOMATYC/KAMATYC Annual Spring Conference
 50. **How Explicating Historical Arguments Can Engage Students: Digging Archaeological Test Pits into the History of *Algebra***
Mar. 3, 2007, Whatcom and Skagit Mathematics Partnership Mini-Conference, Bellingham, WA.
 51. **How Explicating Historical Arguments Can Engage Students: Digging Archaeological Test Pits into the History of *Probability***
Mar. 3, 2007, Whatcom and Skagit Mathematics Partnership Mini-Conference, Bellingham, WA
 52. **Your Chance to See Original, Historical, Classic, and Rare Mathematics Books**
Oct. 25, 2007, Highlight Session, Minicourse, NCTM Regional Conference and Exposition, Kansas City, MO
 53. **Training Your Students to Present Stylish, Commanding, and Complete Board Expositions of Proof, Thereby Offering an Audience the Chance to Comprehend a Mathematical Argument in Real Time!**
Apr. 18, 2008, Missouri Section of the MAA Spring Meeting, Missouri NExT, Springfield, MO
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Talks by Type (some of the list above is repeated in different contexts below)

Graduate/Research Mathematics Talks (not listed elsewhere)

1. **Automorphisms of Matrix Algebras.**
Jan. 14, 1994, UMKC Graduate Mathematics Talks Series.
2. **Sets Whose Hausdorff Measure Equals Method I Outer Measure.**
July 12, 2000, UMKC Doctoral Dissertation Defense.
3. **The Graph of a Convex Function in the Plane is the Countable Union of '1-straight' Sets.**
Oct. 27, 2000, UMKC Graduate Mathematics Talks Series.
4. **An Introduction to s-straight Sets.**
Mar. 9, 2001, UMKC Graduate Mathematics Talks Series.

Conference Talks (not including Mathematics Technology EXPO talks, listed separately below)

■ = Invited Talk

1. **Math/Physics Institute: A University/Public High School Cooperative Effort.**
Oct. 24, 1985, NCTM (National Council of Teachers of Mathematics) Regional Meeting, co-presenter.
2. **The Mathematics and Physics Institute: An Exemplary University-School Districts Partnership.**
Mar. 17, 1986, NASULGC (National Association of State Universities and Land Grant Colleges) Urban School Collaborative Conference, co-presenter.
Nov. 7, 1986, STOM (Science Teachers of Missouri) Fall Conference.
3. **Teaching Calculus I and II: The Mathematics and Physics Institute.**
Apr. 3, 1987, MAA (Mathematical Association of America) Missouri Section Meeting.
Oct. 31, 1987, AMATYC (American Mathematical Association of Two-Year Colleges) National Conference.
4. **A View from the Border Between High School and College.**
Jan. 23, 1988, KCATM (Kansas City Area Teachers of Mathematics) Winter Meeting.
5. **Mathematical Induction.**
Feb. 6, 1989, Conference of Independent School Educators.
6. **Discerning the Landscape of Mathematics: The Crooked Curriculum of History.**
Oct. 24, 1989, KCATM/KATM (Kansas City Area Teachers of Mathematics/Kansas Association of Teachers of Mathematics) Fall Conference.
7. ■ **Two World Class Series: $\sum 1/n$ and $\sum 1/n^2$.**
Apr. 3, 1990, Kappa Mu Epsilon (Mathematics Honor Society) Banquet Speaker, Wm. Jewell College.
8. ■ **Blind Statistics and the Challenger Accident.**
May 19, 1996, Dedication Event of the Center for Inquiry - Midwest, Defending Science.
9. **Derive Visualizations: What You Might Not Know You Can Do!**
Oct. 10, 1996, Central Regional NCTM Conference (National Council of Teachers of Mathematics).

10. ■ **Mathematics for the 21st Century: How Must Mathematics Curricula Change To Accommodate Affordable Hand-Held Symbolic Manipulatives, World-Wide Web Access, Computer Multi-Media Capabilities, etc.?**
Nov. 7, 1996, 9th Annual ICTCM (International Conf. on Tech. in Collegiate Math.), Discussion Group Co-Moderator.
11. ■ **Fermat's Little Theorem is a One-Way Street Infinitely Often: The Prime Evasion of 561.**
Apr. 4, 1998, Kappa Mu Epsilon Convention Keynote Speaker at Wm. Jewell College.
12. ■ **Hippocrates of Chios Squares a Lune, ... But Can't Square a Circle!**
Apr. 29, 1998, KCATM (Kansas City Area Teachers of Mathematics) Awards Banquet Speaker.
13. ■ **The Year 1000: What Mathematics Was Being Done at the Last Turn of the Millennium?**
Apr. 9, 1999, Invited Address, Spring Meeting, MAA Missouri Section, Rockhurst University.
14. ■ **Writing Assignments in Modern Geometries Math 444.**
Dec. 10, 1999, UMKC Writing Across the Curriculum Conference Workshop, 'Issues in Assessing Writing: Teaching with Writing Across the University.'
15. **Sets Whose Hausdorff Measure Equals Method I Outer Measure.**
Mar. 30, 2001, 14th Mini-Conference in Real Analysis, Univ. of Louisville, Louisville, KY.
16. **Every s-set is a Countable Union of Sets Whose Hausdorff Measure Equals Method I Outer Measure.**
May 23, 2001, Summer Symposium in Real Analysis XXV, Weber State Univ., Ogden, UT.
17. ■ **Resources for Teaching with the History of Mathematics.**
Jan. 11, 2003, KCATM (Kansas City Area Teachers of Mathematics) Winter Conference.
18. **The Birth of Geometric Probability: The Needle Problem of Georges Louis le Clerc, Comte de Buffon.**
Apr. 4, 2004, Midwest Junto for the History of Science, 47th Annual Meeting, Kansas City, MO.
19. ■ **VSI in Mathematics and History: Behaviors for Success.**
June 4, 2004, 3rd International Conference on Supplemental Instruction, Boston, MA.
20. ■ **Digging Test Pits into the History of Mathematics: How "Proof Explication" can build student confidence.**
Mar. 31, 2006, Keynote Speaker, MOMATYC (Missouri Math. Asso. of Two-Year Colleges) Ann. Spring Conf., KC, MO
21. ■ **How Explicating Historical Arguments Can Engage Students: Digging Archaeological Test Pits into the History of *Algebra***
Mar. 3, 2007, Whatcom and Skagit Mathematics Partnership Mini-Conference, Bellingham, WA.
22. ■ **How Explicating Historical Arguments Can Engage Students: Digging Archaeological Test Pits into the History of *Probability***
Mar. 3, 2007, Whatcom and Skagit Mathematics Partnership Mini-Conference, Bellingham, WA.
23. ■ **Your Chance to See Original, Historical, Classic, and Rare Mathematics Books**
Oct. 25, 2007, Highlight Session, Minicourse, NCTM Regional Conference and Exposition, Kansas City, MO.
24. ■ **Training Your Students to Present Stylish, Commanding, and Complete Board Expositions of Proof, Thereby Offering an Audience the Chance to Comprehend a Mathematical Argument in Real Time!**
Apr. 18, 2008, Missouri Section of the MAA Spring Meeting, Missouri NExT , Springfield, MO
25. ■ **Mathematical Literacy is not an Oxymoron: Writing, Reading, & Speaking Mathematics, High School to College.**
June 10, 2008, Kansas City Missouri School District Summer Literacy Institute, Kansas City, MO.

Colloquium Talks Given Away from UMKC (All included in the Expository Talks list above)

1. **Fermat's 'Last Theorem' c.1637-1993 (pre-Wiles): The Most Famous Marginal Note in Mathematical History.**
Feb. 26, 1993, University of Iowa, Iowa City, IA, Mathematics Dept.
2. **Mathematical Cranks and Their Obsessions.**
Mar. 6, 1993, Kansas City Skeptical Society.
3. **En Route to Chaos: Sarkovskii's Theorem.**
Apr. 28, 1993, Avila College, Mathematics Dept., National Mathematics Awareness Week.
Feb. 16, 1994, Univ. of Missouri - Columbia, Mathematics Dept., Arts & Sciences Week.
4. **As the Worm Turns c.1966 - 1993: What is the Area of the Smallest Convex Blanket That Will Cover Every Worm of Length 1?**
Apr. 26, 1994, Avila College, Mathematics Dept., National Mathematics Awareness Week.
5. **Pascal's Triangle Before Pascal: An Historical Picturebook.**
Sept. 27, 1994, Park University, Mathematics Dept.
6. **Will All N become One? The Collatz Problem c.1930 - 1992.**
Apr. 26, 1995, Avila College, Mathematics Dept., National Mathematics Awareness Week.
7. **Can a Light in a Reflecting Room Always be Seen from Every Spot? Any Spot?**
Mar. 27, 1996, Benedictine College, Discovery Day mathematics speaker, Kappa Mu Epsilon.
8. **What's the Densest Way to Pack Equal Circles in a Square? c.1964-1995.**
Apr. 25, 1996, Avila College, Mathematics Dept., National Mathematics Awareness Week.

9. **Morley's Trisector Theorem c.1899: History and Proofs.**
Nov. 21, 1996, Central Missouri State University, Kappa Mu Epsilon.
10. **It's All Corners!...The Failure of Intuition: Functions Continuous Everywhere But Differentiable Nowhere.**
Nov. 17, 1998, Invited Speaker, Colloquium Series, Johnson County Community College.
11. **Kissing Numbers: How Many Congruent Regular Polygons Can Kiss Another of Their Kind?**
Nov. 30, 1999, Kappa Mu Epsilon, Benedictine College.
Mar. 20, 2007, Kappa Mu Epsilon, University of Central Missouri
12. **Some Islamic Mathematics of The Year 1000**
Mar. 27, 2000, Invited Speaker, Emporia State University.
13. **The Area of an Enigmatic Ellipse: Holditch's Theorem.**
Feb. 13, 2001, Invited Speaker, Colloquium Series, Johnson County Community College.
14. **Are There 12 or 13 Kissing Spheres? The 1694 Isaac Newton – David Gregory Disagreement.**
Apr. 14, 2005, Invited Colloquium Speaker, Northwest Missouri State University

Other Mathematics Talks/Panels (not listed elsewhere)

1. **Distinguished Teaching Panel (immediately after winning Superior Teaching Award).**
Aug. 21, 1984, UMKC School of Graduate Studies GTA Orientation.
2. **High School Mathematics: Keeping Your Options Open.**
May 20, 1987, Englewood Christian High School.
3. **A Mathematics Potpourri.**
May 10, 1988, Palmer Junior High School.
4. **Speakers' Bureau Panel.**
Feb. 6, 1989, Conference of Independent School Educators.
5. **Mathfest Talk.**
Apr. 25, 1990, UMKC Dept. of Mathematics and Statistics.
6. **Innumeracy and the Use of Mathematics in Reasoning about Pseudoscience.**
Oct. 9, 1990, "The Voice of Reason" local radio talk show, KKFI, 90.1 FM.
7. **Seeing How to Turn a Sphere Inside-Out (without tearing it).**
Jan. 20, 1995, UMKC Expository Talks Series, a presentation of two video tapes.
8. **Mathematics Dinner Talk.**
Aug. 2, 1997, Center for Inquiry - Midwest.
9. **'The Institute for Pi', a Video Spoof.**
Oct. 25, 1997, Center for Inquiry - Midwest Conference, session entitled 'Mathematics, Medicine and the Culture Wars'.
10. **Student Expository Papers in History of Mathematics.**
Oct. 21, 1998, UMKC Writing Across the Curriculum Committee Lunch Meeting.
11. **Writing Assignments in Calculus I.**
Apr. 28, 2000, UMKC High School/College Program Conference.
12. **Writing in History of Mathematics Math 464 WI.**
Apr. 13, 2001, UMKC Writing Across the Curriculum Writing Intensive Faculty Forum.
13. **One Small Peer Review Assignment in History of Mathematics Math 464 WI.**
Oct. 26, 2001, UMKC Writing Across the Curriculum Writing Intensive Faculty Forum.
14. **AMATYC, MAA, & NCTM Standards Panel.**
Mar. 31, 2006, MOMATYC/KAMATYC Annual Spring Conference.
15. **History of Mathematics - Writing Intensive -- Design & Implementation of Writing Intensive Courses**
Dec. 11, 2006, FaCET (Faculty Center for Excellence in Teaching)
16. **Assessment in the Department of Mathematics & Statistics**
Feb. 19, 2008, UMKC Student Learning Group Meeting (at FaCET)

Mathematics Technology Talks/Workshops 1991-1996 (not listed elsewhere)

1. **Annual Workshop on Derive, Microcalc, and graphics calculators.**
1991-1996, MPI (Mathematics and Physics Institute) high school mathematics/physics faculty.
2. **Invited Workshop on Mathematics Computer Software (Derive, Microcalc, etc.)**
Apr. 5, 1991, Metropolitan Community Colleges mathematics in-service training, Penn Valley Community College.
3. **Workshop on Derive and Microcalc.**
Sept. 27, 1991, UMKC Mathematics Dept. faculty and staff, held in Miller Nichols Library.
4. **Invited Workshop on Derive.**
Apr. 14, 1992, UMKC Education class 489DF Special Topics: Algebra for Teachers (Vena Long).

5. **Using Mathematics Software and Technology in Secondary School Mathematics Courses.**
Sept. 3, 1992, Invited Lecture, Truman High School, Independence, MO.
 6. **Invited Workshops on Derive.**
Sept. 14, 23, 1992, Independence School District secondary school mathematics teachers.
 7. **Derive and Algebra.**
May 18, 1993, Invited Workshop Nowlin Middle School.
 8. **Invited Lecture/Workshops on the SHARP EL-9300C Graphics Calculator.**
July 1, 1994, UMKC HSSMTI (High School Science, Mathematics, and Technology Institute).
 9. **Introduction to Derive.**
Sept. 9, 1994, UMKC Physics Dept. faculty preparing for student PC lab installation.
 10. **Workshop on Derive.**
Mar. 1, 1995, 8th grade Algebra students from Nowlin Middle School.
 11. **Workshop on Derive & Graphics Calculators.**
Mar. 1, 1995, 3 hours, UMKC Education class 568R (Vena Long).
 12. **Workshop in Derive and Univ. of AZ programs.**
Mar. 15, 1995, students from Southwest High School.
 13. **Hosted a working visit from Linda Crabtree of Longview Community College.**
May 5, 1995, How the MPI uses computers in teaching calculus.
 14. **An Introduction to the TI-92.**
Jan. 9, 1996, 2 hour workshop, Johnson County Community College.
 15. **Hosted a working visit from Richard Stein of Casper College, WY.**
Winter 1996, How the MPI uses computers and graphics calculators in teaching calculus.
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Kansas City Regional Mathematics Technology EXPO - Annual Participation (18 years)

- (1) **1991** (First EXPO)
Talk: **How to Use and Not Use Derive.**
Workshop: **Practice & Exploration: MicroCalc, TrueBasic Calculus, & Derive.**
- (2) **1992** Steering Committee: **Member**, & Author: **Sources for Software, Graphics Calculators, Books.**
Workshop: **Advanced Derive Workshop: Calculus I & Calculus II.**
Discussion: **What High Schools Will Prepare For and What Colleges Will Expect.**
- (3) **1993** Steering Committee: **CHAIR**, & Author: **Sources for Software, Graphics Calculators, Books.**
- (4) **1994** Steering Committee: **CHAIR**, & Author: **Sources for Software, Graphics Calculators, Books.**
Workshop: **The Eclectic Lab: Six Unusual PC/Calculator Labs for Calculus I & II.**
- (5) **1995** Steering Committee: **Member.**
Talk: **Derive Visualizations: What You Might Not Know You Can Do!**
Showcase: **A Comparison of the TI-82, SHARP EL-9300c, & HP 38G Graphics Calculators.**
Showcase: **A Comparison of the HP 48GX and the New TI-92 Graphics Calculators.**
- (6) **1996** Steering Committee: **Member.**
Talk: **A Newly-Discovered Property of Ellipses: Is Star Trek's PHASER Imminent?**
Workshop: **Interactive Notebooks on a Graphics Calculator: The New HP 38G & Aplets.**
Showcase: **A Comparison of Derive for Windows with 'Classic' Derive.**
Discussion: **What Will We Do with the TI-92? A Discussion of the Future.**
- (7) **1997** Steering Committee: **Member.**
Showcase: **Useful Mathematics Freeware/Shareware.**
Showcase: **Comparison between the New SHARP EL-9600c & the TI-83 Graphics Calculators.**
Discussion: **Algebra Topics: What Do We Throw? What Do We Keep?**
- (8) **1998** Steering Committee: **Member.**
Talk: **Stop, Go, & Actively Engage: College Algebra on Videotape in 1998.**
Talk: **Alternate Office Hours: Blackboard & Chalk to Internet Whiteboard & Digital Pen.**

- (9) 1999 Steering Committee: **Member**.
 Talk: **Virtual Office Hours and More: Year One of the University of Missouri Project**.
 Discussion: **Differentiating Student Skills With Respect to Online Courses**.
- (10) 2000 Steering Committee: **Member**.
- (11) 2001 Steering Committee: **Member**.
 Discussion: **What Do We Need to Know About Online Teaching?**
- (12) 2002 Steering Committee: **Member**.
- (13) 2003 Steering Committee: **Member**.
 Discussion: **Where Do We Go From Here? Guiding the EXPO through its “Teens”**
- (14) 2004 Steering Committee: **Member**.
 Talk: **“Voices of the Partner Disciplines”: What mathematics and associated technology do our clients say their students need?**
- (15) 2005 Steering Committee: **Member**.
 Discussion: **Placement Testing – Searching for the Grail, but Working in the Real World**
- (16) 2006 Steering Committee: **Member**.
- (17) 2007 Steering Committee: **Member**.
- (18) 2008 UMKC Site Coordinator, & Steering Committee: **Member**.
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Virtual Office Hours Project

1997-2000 Participated in a University of Missouri system-wide effort to create a way for students in mathematics to find tutorial help on line, using both audio and whiteboard software, as well as a digital pad and pen.

Funding

- **1987** UMKC Teaching Enhancement Funds for summer conference travel (**\$200**)
 - **1996** Organized, with a colleague (Kay Weiss) from Kansas City Kansas Community College (KCKCC), and presided over an all day **Math Mania mathematics event** held Oct. 3 at KCKCC for over 300 high school/college students and their teachers from all over Kansas and Missouri. **\$10,000** was provided by the MAA (Mathematical Association of America) and the Mary P. Dolciani Halloran Foundation. The speakers were **Frank Morgan**, and **Colin Adams** of Williams College, and **Bill Thayer** of St. Louis Community College at Meramec. (Report published in the Dec. 1996 MAA Focus newsletter, p.16.)
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Referee For:

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|--|--------------------------------|
| • Journal of Mathematical Analysis and Applications | • Nonlinearity |
| • Journal of Online Mathematics and its Applications | • Pi Mu Epsilon Journal (1996) |
| • Journal of Physics A: Mathematical & General | • Real Analysis Exchange |
| • Missouri Journal of Mathematical Sciences | |
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Acknowledgements or Quotations (in Books, Magazines, Newspapers, DVDs, etc.)

1. Dec. 1, 1990 **Quoted** in the Independence Examiner article "**Area Students Challenge Prediction**", p. 3: "It was a lesson on how one judges conjecture in science. How one tells a good one from a bad one."
 2. 1991 **Acknowledged** in the preface to "**Fundamentals of Real Analysis**" by James Foran, Marcel Dekker, Pub., p. vi: "Richard Delaware...read the entire book and (his) suggestions and corrections...are greatly appreciated."
 3. Summer 1994 **Quoted extensively** in Perspectives, The Newsmagazine of the University of Missouri - Kansas City, Vol. 4, No. 2, pp. 20-21, "**Breakfast of Champions**" MPI article (Mathematics and Physics Institute).
 4. 1995 **Acknowledged** in the preface to "**Introduction to Fractals and Chaos**" by Richard Crownover of UM - Columbia, Jones and Bartlett, Pub., p. ix: "I thank Richard Delaware for sharing his lecture notes on the topic of Sarkovskii's Theorem."
 5. June 1, 1996 **Quoted** in **Scientific American** magazine, p. 103, Mathematical Recreations, Feedback section, regarding the "Worm Problem".
 6. 1996 **Acknowledged** in the new MPI **Physics Lab Manual**: "The author expresses his gratitude to Richard Delaware for his help with Derive, and in proofreading several drafts of the laboratory manual."
 7. Nov. 7, 1996 **Quoted** in a Kansas City Star Eastern Jackson County/Independence edition article entitled "**Labyrinth**": "There's no psychological or spiritual import connected with these numbers [Golden Ratio, etc.] except in the minds of people who wish to think that way."
 8. Summer 2002 **Featured** in the Linda Hall Library of Science, Engineering, and Technology newsletter Hedgehog, No. 19, Summer 2002, pp. 3-4, an article titled: "**The Mathematics and Physics Institute Annual Visit.**"
 9. Fall 2004 **Acknowledged** in the 2003-2004 **UMKC Sosland Journal** preface: "A special thanks to Richard Delaware for his assistance with the essays that focus on mathematics."
 10. Fall 2004 **Quoted** in "**How to Read and Do Proofs**", 4th Edition by Daniel Solow, Wiley, Pub., on the back cover, "His already fine book becomes more usable by having the four subject-targeted appendices.", and on p. xviii, **Acknowledgements** for the Fourth Edition: "I am especially grateful for the thorough and thoughtful comments of Richard Delaware at the University of Missouri, Kansas City, many of which have been incorporated in this edition".
 11. May 21, 2006 **Featured** in the Kansas City Sunday **STAR Magazine** with a Math 464 History of Mathematics class visiting the newly remodeled Rare Book Room of the Linda Hall Library of Science and Technology.
 12. Oct. 22, 2007 **Featured** in Kansas City **STAR newspaper** article (p. B-2) "Rare old books will be on display" as NCTM Regional Conference speaker.
 13. Jan. 2008 **Acknowledgement, Preface**, Elementary Real Analysis, 2nd Ed, Thomson, Bruckner & Bruckner: "We would like to make special mention of Richard Delaware...[who]...went through the entire first edition, made many helpful suggestions, and found numerous errors."
 14. Sept. 2008 **Appeared** in **DVD** for Southwest Early College Campus, produced by PREP-KC.
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Conferences Attended

AMS = American Mathematical Society; ICTCM = International Conference on Technology in Collegiate Mathematics ;
KATM = Kansas Association of Teachers of Mathematics; KCATM = Kansas City Area Teachers of Mathematics ;
MAA = Mathematical Association of America; NASULGC = Nat. Assoc. of State Universities & Land Grant Colleges;
NCTM = National Council of Teachers of Mathematics; SIAM = Society for Industrial and Applied Mathematics

1. Jan. 15-19, 1974 AMS/MAA Joint National Meeting, San Francisco, CA.
2. Jan. 7-13, 1985 AMS/MAA Joint National Meeting, Anaheim, CA.
3. Feb. 28-Mar. 1, 1985 Reasoning and Higher Education Meeting, Boise, ID.
4. Apr. 12-13, 1985 MAA Missouri Section Meeting, Warrensburg, MO.
5. July 22-25, 1985 LOGO 85 Meeting, Massachusetts Institute of Technology, Boston, MA.
6. Oct. 24, 1985 NCTM Regional Meeting, Kansas City, MO.
7. Mar. 17, 1986 NASULGC Urban School Collaborative Conference, Kansas City, MO.
8. Aug. 3-11, 1986 International Congress of Mathematicians, Berkeley, CA.
9. Aug. 5-6, 1986 Pi Mu Epsilon National Meeting, Berkeley, CA
10. Oct. 24-25, 1986 ADAPT (Accent on Developing Abstract Processes of Thought), Independence, MO.
11. Nov. 7, 1986 STOM (Science Teachers of Missouri) Fall Conference, Kansas City, MO.
12. Apr. 3, 1987 MAA Missouri Section Meeting, Kirksville, MO.
13. Apr. 8-11, 1987 NCTM National Meeting, Anaheim, CA.
14. July 31-Aug. 3, 1987 1st Boston Workshop for Mathematics Faculty, Wellesley College, Boston, MA.

15. Oct. 31, 1987 AMATYC (American Association of Two Year Colleges) National Meeting, Kansas City, MO.
16. Jan. 5-9, 1988 AMS/MAA Joint National Meeting, Atlanta, GA.
17. Jan. 23, 1988 KCATM Winter Meeting, Kansas City, MO.
18. Feb. 6, 1989 Conference of Independent School Educators, Kansas City, MO.
19. Apr. 12-15, 1989 NCTM National Meeting, Orlando, FL.
20. Oct. 24, 1989 KCATM/KATM Fall Conference, Kansas City, MO.
21. Jan. 8, 1990 Conference on Calculus Revision, William Jewell College, Liberty, MO.
22. Oct. 4, 1991 Kansas City Regional Mathematics Technology EXPO, Overland Park, KS.
23. Oct. 16-17, 1992 Kansas City Regional Mathematics Technology EXPO, Kansas City, KS.
24. Nov. 12-15, 1992 ICTCM, Rosemont (nr. Chicago), IL.
25. Feb. 12-13, 1993 Harvard Calculus Conf. & Math. & Tech. Workshop, Oklahoma State Univ., Stillwater, OK.
26. Mar. 31-Apr. 3, 1993 NCTM National Meeting, Seattle, WA.
27. Oct. 1-2, 1993 Kansas City Regional Mathematics Technology EXPO, Kansas City, KS.
28. Apr. 26, 1994 KCATM Annual Dinner Meeting, Overland Park, MO.
29. Oct. 7-8, 1994 Kansas City Regional Mathematics Technology EXPO, Kansas City, KS.
30. Aug. 7-8, 1995 Hewlett Packard workshop on the new HP 38G graphics calculator, Kansas City, MO.
31. Oct. 6-7, 1995 Kansas City Regional Mathematics Technology EXPO, Kansas City, KS.
32. Jan. 6, 1996 KCATM/KATM Winter Meeting, Kansas City, MO.
33. May 19, 1996 Dedication Event, Center for Inquiry - Midwest, Defending Science, Kansas City, MO.
34. July 23, 1996 SIAM Annual Meeting, "Toy Story: Character-Driven Mathematics", Kansas City, MO.
35. Oct. 3, 1996 Organizer, MAA/Dolciani-Halloran Foundation "Math Mania" event, Kansas City, KS.
36. Oct. 4-6, 1996 Kansas City Regional Mathematics Technology EXPO, Kansas City, KS.
37. Oct. 10, 1996 NCTM Central Regional Conference, Kansas City, MO.
38. Nov. 7-10, 1996 ICTCM, Reno, NV.
39. Oct. 3-4, 1997 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
40. Oct. 25, 1997 Center for Inquiry - Midwest conference, Kansas City, MO.
41. Nov. 5-9, 1997 ICTCM, Chicago, IL.
42. Mar. 27-28, 1998 AMS section meeting, Manhattan, KS.
43. Oct. 2-3, 1998 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
44. Apr. 9, 1999 Joint Spring Meeting, Missouri section MAA, KCATM, et. al., Kansas City, MO.
45. July 19, 1999 "Presenting Data and Information", Edward Tufte, Kansas City, MO.
46. Oct. 1-2, 1999 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
47. Dec. 10, 1999 UMKC Writing Across the Curriculum conference, Kansas City, MO.
48. Apr. 28, 2000 UMKC High School/College conference, Kansas City, MO.
49. Oct. 6-7, 2000 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
50. Jan. 9-14, 2001 AMS/MAA Joint National Meeting, New Orleans, LA.
51. Mar. 30-31, 2001 Real Analysis Mini-Conference, University of Louisville, Louisville, KY.
52. May 22-26, 2001 Summer Symposium in Real Analysis XXV, Weber State University, Ogden, UT.
53. Oct. 5-6, 2001 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
54. Oct. 4-5, 2002 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
55. Jan. 11, 2003 KCATM Annual Conference, Kansas City, MO.
56. Oct. 3-4, 2003 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
57. Apr. 2-4, 2004 Midwest Junto for the History of Science, 47th Annual Meeting, Kansas City, MO.
58. June 2-4, 2004 3rd International Conference on Supplemental Instruction, Boston, MA.
59. Oct. 1-2, 2004 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
60. Jan. 8, 2005 KCATM Annual Conference, Kansas City, MO.
61. Oct. 7-8, 2005 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
62. Mar. 31, 2006 MOMATYC/KAMATYC Annual Spring Conference, Kansas City, MO.
63. Sept.29-30, 2006 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
64. Mar. 3, 2007 Whatcom & Skagit Mathematics Partnership Mini-Conference, Bellingham, WA
65. Oct. 5-6, 2007 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
66. Oct. 25, 2007 NCTM Regional Conference, Kansas City, MO.
67. Feb. 16, 2008 KCATM Winter Conference, Kansas City, MO.
68. Apr. 18-19, 2008 MAA Missouri Section Spring Meeting, Springfield, MO.
69. May 2, 2008 FaCET Symposium: Academic Freedom & Inclusion, Kansas City, MO
70. May 28-29, 2008 Woodrow Wilson Foundation Convening, Princeton, NJ.
71. Oct. 3-4, 2008 Kansas City Regional Mathematics Technology EXPO, Kansas City, MO.
72. Oct. 23-24, 2008 Woodrow Wilson Foundation Convening, Princeton, NJ.

Service

**Organizer, Expository Talks Series
(Winter 1988-Fall 2008 21 years)**

270 talks through Fall 2008
(42 talks by me)

Brief Description of the Series

- In January 1988, I created the UMKC Dept. of Mathematics and Statistics Expository Talks Series to present a series of lively 50 minute expository mathematics talks. Speakers are generally from regional states.
- There are now about 10 talks per academic year, pitched at the undergraduate level.
- The rule is: **Every talk must contain a mathematical proof.**
- On average, each talk is attended by about 15 faculty, graduate, or undergraduate students from UMKC and surrounding Colleges and Universities contributing to a vibrant sense of mathematical community.

Administrative Responsibilities

- Find, schedule, and make all arrangements for about 10 expository speakers each academic year.
 - Post announcements on web page, print some flyers, and maintain the mailing list.
 - Organize & buy refreshments.
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Created Department Web Site – January 2004 (with E. Hall)

- Over 100 web pages now, constantly maintained.
 - Information rich, and acclaimed for ease of use by students, faculty, advisors, and community users.
-

Student Talks Coached & Prepared (25 total), Department Expository Talks Series (20 minute talks)

- **April 11, 2003**, Sarah Vaughn, **Falling Down: The Proof of Galileo's Nearly Correct Path of Quickest Descent**, for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **April 11, 2003**, Christina Miller, **Albert Girard 1629: The First Statement of the Fundamental Theorem of Algebra**, for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **April 16, 2004**, Karla Childs, **A Lesson from Fibonacci: Leonardo Pisano's Liber Abaci (Book of Calculation) 1202**, for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **April 16, 2004**, Louis Schenck, **Erdos' Simple 1932 Proof of Bertrand's Postulate: For any integer $n > 2$ there is a prime p such that $n < p < 2n$.**
- **November 19, 2004**, Carol Hanson, **A Proof of Darboux's Theorem: Every Derivative has the Intermediate Value Property**, for **Math 402** (Advanced Analysis I).
- **November 19, 2004**, John Nangle, **The Compactness Theorem: You Too can Color an Infinite Map with Only 4 Crayons**, for **Math 490** (Set Theory and Models) an individual study course taught by Eric Hall.
- **April 22, 2005**, Melanie Meyer, **A 1779 Theorem of 72 year old Leonhard Euler: "The solution of a Curious Question: Given any series of n letters..., to find how many ways they can be rearranged so that none returns to the position it initially occupied"**, for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **April 22, 2005**, Joel Hess, **An 1881 Theorem of 21 year old Vito Volterra: "No continuous function on the real numbers takes rationals to irrationals and irrationals to rationals"**, for **Math 412** (Advanced Analysis II).
- **November 11, 2005**, Pinar Tulay, **Leonhard Euler's 1770 "Proof" that: "It is impossible to find any two cubes, whose sum or difference is a cube"**, for **Math 402** (Advanced Analysis I).

- **November 11, 2005**, David Jackson, **Joseph Liouville's 1851 Exhibition of the First Transcendental Number**, for **Math 402** (Advanced Analysis I).
 - **November 17, 2006**, Lindsey Ramsey, **Weierstrass' Proof that his 1872 "Pathological" Function is Everywhere Continuous but Nowhere Differentiable**, for **Math 402** (Advanced Analysis I).
 - **November 17, 2006**, Bill Gessley, **A Proof of Euler's Formula for Polyhedra $V - E + F = 2$ and its Application to Pick's Theorem**, for **Math 402** (Advanced Analysis I).
 - **December 1, 2006**, Sam Butler-Hunziker, **A Proof of the Fundamental Theorem of Algebra using D'Alembert's Lemma of 1746**, for **Math 407** (Introduction to Complex Variables).
 - **December 1, 2006**, Tony Botello, **A 1995 Proof and Algorithm for a 4 Person Envy-Free Cake-Cutting Protocol**, for **Math 402** (Advanced Analysis I).
 - **April 13, 2007**, Tera Smith, **A Proof of the 'Law of Quadratic Reciprocity'**, for **Math 410** (Modern Algebra).
 - **April 13, 2007**, Dan Brigham, **At Most 4 Colors are Needed to Color any Plane Map: Kempe's Incorrect 1879 'Proof' and the Error Found by Heawood 10 Years Later!**, for **Math 464 WI** (History of Mathematics, Writing Intensive).
 - **November 16, 2007**, Whitney Berard, **Benko's new 2007 proof that: A given $a \times b$ rectangle R can be decomposed into finitely-many rectangles which can be translated to compose another given parallel $c \times d$ rectangle R' if and only if $\text{area}(R) = \text{area}(R')$ and a/c is rational**, for **Math 402** (Advanced Analysis I).
 - **November 16, 2007**, Brian Johnson, **Saari's 1981 proof that: In any election with $n > 2$ candidates, given $j < n$ voting vectors $W(1), \dots, W(j)$, there exist voter profiles so that when the voters vote for j of the candidates using the voting vector $W(j)$, then the j th candidate wins**, for **Math 402** (Advanced Analysis I).
 - **November 30, 2007**, Jamie Spenard, **Courant's 1941 Pancake Theorem proof: Two bounded, open, connected plane sets can be cut by a single line that divides each set in half by area**, for **Math 402** (Advanced Analysis I).
 - **November 30, 2007**, Tom Scott, **A Proof of Lebesgue's 1903 Criterion: A function f from $[a,b]$ to \mathbb{R} is Riemann-integrable if and only if f is bounded and the set of points of $[a,b]$ at which f is not continuous has measure zero**, for **Math 402** (Advanced Analysis I).
 - **November 30, 2007**, Yawo Ekpoh, **Koksma's 1949 proof that: e^r is irrational for all non-zero rational exponents r (with Sondow's new 2006 geometric proof that e is irrational)**, for **Math 402** (Advanced Analysis I).
 - **April 25, 2008**, Vivian Bozikis, **Leonhard Euler's 1734 and 1743 Proofs that $[\text{The } 1/k^2 \text{ series}] = (\pi^2)/6$** , for **Math 464 WI** (History of Mathematics, Writing Intensive).
 - **April 25, 2008**, Tracey Davidson, **Abraham DeMoivre's 1718 Proof of a Gambler's Ruin Problem**, for **Math 464 WI** (History of Mathematics, Writing Intensive).
 - **November 21, 2008**, Dan Krulewich, **A Continuous function with zero derivative "almost everywhere" on $[0, 1]$ which is nevertheless strictly increasing there!**, for **Math 402** (Advanced Analysis I).
 - **November 21, 2008**, James Slaughter, **Using Combinatorial Games (like dominoes) to prove $\frac{1}{2} + \frac{1}{2} = 1$** , for **Math 490** (Numbers and Games), an independent study course with Dr. Hall.
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Student Expository Paper Publications

UMKC Sosland Journal (Department of English)

- **Fall 2002**, Kristin DeBolt, book review essay, **Fermat's Enigma: The Book that Proves Mathematics is Anything but Boring**, written Winter 2002 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2003**, Melissa Menning, expository paper, **A Revolution in Astronomy**, about Kepler, written Winter 2003 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2004**, Carrie Andersen, expository paper, about the famous Konigsberg Bridge problem, **The Origination of Euler's Path**, written Winter 2004 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2004**, Heath Yates, expository paper, **An Emanji Temple Geometry Tablet**, written Winter 2004 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2005**, Samantha Reynolds, expository paper, **Maria Gaetana Agnesi: Female Mathematician and Brilliant Expositor of the 18th Century**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2005**, Newlyn Walkup, expository paper, **The Perspective of Girard Desargues**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2008**, Jace Ferguson, **Early Binary: History and Application**, written Winter 2007 for **Math 464 WI** (History of Mathematics, Writing Intensive).

UMKC Lucerna (Undergraduate Honors Journal)

- **Fall 2007**, Samuel Butler-Hunziker, expository paper, **George Berkeley's Mathematical Philosophy and the Calculus**, written Winter 2007 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2007**, Lisa Erickson, expository paper, **Polygonal Numbers**, written Winter 2007 for **Math 464 WI** (History of Mathematics, Writing Intensive).

HOMSIGMAA Web Site [History of Mathematics Special Interest Group of the Mathematical Association of America]

- **May, 2004**, Heath Yates, expository paper, **An Emanji Temple Geometry Tablet**, written Winter 2004 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **May, 2005**, Newlyn Walkup, expository paper, **Eratosthenes and the Mystery of the Stades**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **May, 2006**, Samantha Reynolds, expository paper, **Maria Gaetana Agnesi: Female Mathematician and Brilliant Expositor of the 18th Century**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).

Convergence - Online Magazine [Mathematical Association of America]

- **May, 2005**, Newlyn Walkup, expository paper, **Eratosthenes and the Mystery of the Stades**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).

Student Awards/Honors

UMKC Ilus W. Davis Writing Competition (Department of English)

- **Fall 2002**, Kristin DeBolt, **2nd Place prize**, book review essay, **Fermat's Enigma: The Book that Proves Mathematics is Anything but Boring**, written Winter 2002 for **Math 464 WI** (History of Mathematics, Writing Intensive).

- **Fall 2003**, Melissa Menning, **3rd Place prize**, expository paper, **A Revolution in Astronomy**, about Kepler, written Winter 2003 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2005**, Samantha Reynolds, **Advanced Category winner**, expository paper, **Maria Gaetana Agnesi: Female Mathematician and Brilliant Expositor of the 18th Century**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **Fall 2008**, Jace Ferguson, **Advanced Category winner**, expository paper, **Early Binary: History and Application**, written Winter 2008 for **Math 464 WI** (History of Mathematics, Writing Intensive).

HOMSIGMAA contest for History of Mathematics papers

[History of Mathematics Special Interest Group of the Mathematical Association of America]

- **May, 2004**, Heath Yates, **1st Place co-winner**, expository paper, **An Emanji Temple Geometry Tablet**, written Winter 2004 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **May, 2005**, Newlyn Walkup, **1st Place winner**, expository paper, **Eratosthenes and the Mystery of the Stades**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **May, 2006**, Samantha Reynolds, **1st Place co-winner**, expository paper, **Maria Gaetana Agnesi: Female Mathematician and Brilliant Expositor of the 18th Century**, written Winter 2005 for **Math 464 WI** (History of Mathematics, Writing Intensive).
- **April 2008**, Tracey Davidson, **Finalist**, expository paper, **Nicole Oresme: The Kinematics of Celestial Motion**, written Winter 2008 for **Math 464 WI** (History of Mathematics, Writing Intensive).

MAA Kansas Section Meeting. Graduate Student Paper Competition [Mathematical Association of America]

- **March 20, 2004**, Karla Childs, **Outstanding Paper Award**, at Benedictine College, Atchison, KS, **The Rise of Algebra**, written as an expository paper Winter 2004 for **Math 464 WI** (History of Mathematics, Writing Intensive).

Student Mathematics Competitions Participation

- 1986-2002, 2005 **MATHCOUNTS** annual national mathematics **Contest** for middle school students; Review and write out solutions each year for all 100+ contest problems for local region.
- 1989-1992 **TEAMS Contest** (Tests of Engineering Aptitude, Mathematics and Science); Coach for a team of 6-8 MPI (Mathematics and Physics Institute) students annually, who in the Large/Selective Schools Division won **4th Place** each of 1989, 1990, and 1991, and **3rd Place** on Feb. 14, 1992.
- March 2004 Judge for the national **HOMSIGMAA** (History of Mathematics Special Interest Group of the Mathematical Association of America) **contest** for papers written in History of Mathematics courses.
- 2001-2002, 2005-2008 **UMKC High School/College Program (HSCP) Mathematics Competition**; Write problems and solutions; Advisory committee; Competition Moderator, and Judge.

Kappa Mu Epsilon National Mathematics Honorary (Student) Society Talks/Events

- April 3, 1990 William Jewell College, Banquet Speaker, **Two World Class Series: $\Sigma 1/n$ and $\Sigma 1/n^2$** .
- Spring 1995 Central Missouri State University, and William Jewell College, lent personal copies of two different mathematics video tapes on **Everting a Sphere** to their separate chapters.
- March 27, 1996 Benedictine College, Discovery Day Mathematics Speaker, **Can a Light in Reflecting Room Always be Seen from Every Spot? Any Spot?**

- Nov. 21, 1996 Central Missouri State University, Invited Speaker,
Morley's Trisector Theorem c.1899: History and Proofs.
 - April 4, 1998 William Jewell College, Convention Keynote Speaker,
Fermat's Little Theorem is a One-Way Street Infinitely Often: The Prime Evasion of 561.
 - Nov. 30, 1999 Benedictine College, Invited Speaker,
Kissing Numbers: How Many Congruent Regular Polygons Can Kiss Another of Their Kind?
 - Mar. 20, 2007 University of Central Missouri (updated version of talk)
Kissing Numbers: How Many Congruent Regular Polygons Can Kiss Another of Their Kind?
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Other Student-Related Activities

- May 1989 Judge for an Education Ph.D. student project
 - Oct.-Nov., 1990 **Coach** for the MPI "**Earthquake Team**" of 6 MPI students, investigating the Iben Browning New Madrid Earthquake prediction, and **featured on television, radio, and in several print articles.**
 - 1991-1992 Annually prepared and **coached** 11/14 presentations by 20/21 MPI students to local 8th graders at 5 local junior high and middle schools for **National Mathematics Awareness Week.**
 - 2004-2005 **Outside portfolio reviewer**, secondary mathematics education students, UMKC School of Education.
 - 1999-present Organize **annual Math 464 WI** (History of Mathematics, Writing Intensive) student **Field Trip to the Rare Book Room** of Linda Hall Library of Science, Engineering, and Technology.
 - Apr. 19, 2007 **Poster Judge**, University of Saint Mary Science and Math Undergraduate Research Forum
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Associate Director (1998-2003) and Mathematics Coordinator (1984-2003, 19 years)

Mathematics and Physics Institute (MPI)

[Program terminated in 2003 by UMKC]

Brief Description of the MPI program

The MPI for high school seniors gifted or talented in science and mathematics was a special collaborative program between the University of Missouri - Kansas City (UMKC) School of Arts and Sciences and several Missouri public school districts such as in **Year 2001-2002:** Fort Osage, Independence, and Kansas City, Missouri, and in **Year 2002-2003:** Fort Osage, Independence, Hickman Mills, and North Kansas City.

After being recommended by their high schools and passing an entrance test (Mathematical Association of America Calculus Readiness Test) about 40-50 students from 5-11 high schools came to the UMKC Truman campus in Independence daily from 7 - 8:45 am, **before** their regular high school classes, for two periods of college Calculus (UMKC Math 210 or 220) and college Physics (UMKC Phys 210 or 240). These were full university courses spread out over the period of the academic year, for which students received both high school and free UMKC college credit, and included extensive regular problem-solving, lecture, and laboratory sessions. For calculus, graphics calculators and a computer algebra system (Derive) were appropriately included. In addition, every two weeks science, mathematics, or engineering professionals appeared as enrichment speakers, and one field trip was taken each year.

MPI students were an elite group in competition with talented peers not used to the rigors of college classes and from whom a high quality of work was expected. Any students surviving our courses were to be commended, and those excelling were exceptional. MPI Calculus students were divided into four sections. Three sections took Calculus I (Math 210) distributed over two semesters. The fourth section took Calculus I (Math 210) first semester and Calculus II (Math 220) second semester. Two high school mathematics teachers assisted Richard Delaware in teaching three of these four sections.

Some MPI Benefits to Students and Districts

- **Free UMKC College Credit** (8-13 hours) for students (in 2003 saving \$1800-\$2400+)
- A stimulating mix of **40-50 talented students** from 5-11 high schools
- Work with **UMKC instructors** and several **talented High School instructors** from different schools, including three Ph.D.s and a Presidential Teaching Award winner
- A challenging introduction to **college demands, study habits, and independence** away from the high school setting and atmosphere
- **Cost to School Districts substantially reimbursed** through State of Missouri Gifted & Talented Funds

- Five UMKC Chancellor's Scholar Awards available only to students who finished the MPI program

Some MPI Facts from the Annual Reports

- **Number of Students Finishing the MPI, 1984-2003 (Years 1-19)** **846** Total, 518 Male (61%), 328 Female (39%)
- **Percentage (on average) of MPI Students Who Finished** 75% (846/1129)
- **634 Students Years 1-13** 583 (93%) Enrolled in College 466 Total College Degrees (minimum)
229 Degrees in Science, Mathematics, Engineering 247 total Bachelors of Science, 9 Medical Doctors, 3 Ph.D.s
- **Where Most MPI Alumni Went (53%)** 26% University of Missouri - Kansas City
16% University of Missouri – Columbia 11% University of Missouri - Rolla

Administrative Responsibilities as MPI Associate Director - A selection

- Prepare **weekly schedule** for the academic year for all four sections of Calculus, in order that all sections move at the same pace, share examination days, homework assignments, computer lab days, cover absent teachers, etc.
- **Write** all lecture notes, handouts, quizzes, examinations, answer sheets, computer laboratories, graphics calculator notes, calculus writing assignments, and special projects for the courses.
- Maintain **grades** for all students with grading software. Produce high school grades for each school as needed at quarters, trimesters (6 week periods), and semesters.
- **Supervise the two high school mathematics teachers** who assist in the teaching of Calculus, and train them in graphics calculator and mathematics software usage when necessary.
- **Maintain the MPI computers and all software**, including the PC Lab of 14 computers, and the computers used by the Director, Associate Director, and Secretary. Research, recommend purchase, or upgrade mathematics and physics software as necessary. Maintain, arrange purchase of, and write programs for the MPI graphics calculators.
- Maintain MPI e-mail correspondence with **MPI Alumni** and write letters of recommendation for students.
- Write, review, or proofread all **paperwork** generated by the MPI, such as announcements, lists, questionnaires, evaluation forms, letters, **Annual Report**, etc. Deliver and pick up all copies from UMKC printing, and mailroom.
- From 1986-2003, gather all the information for, edit and write the **MPI Newsletter "Mπ "**; 5 issues/year, about 10 pages/issue; final circulation: 900+.
- Locate, call, and make all technical arrangements for about half (approximately 7) **Enrichment Speakers** over the academic year, as well as organize the Linda Hall Library Rare Book Room field trip in the Spring.
- Appear at or organize **MPI events**: Annual Open House on a Sunday in November; Annual Panel Discussion in January; Two Recruitment Presentations to prospective MPI students in February; Annual MPI Breakfast and Awards Presentation in May; Annual report meeting with public school superintendents and UMKC administrators. On occasion, report to a School District Board of Education Meeting or accompany the Director in direct visits.
- Travel and give the MAA **Calculus Readiness Test** to about 100 students at 7-10 high schools in April/May.
- Other sporadic duties: Collaborate on and oversee the design and printing with UMKC Creative Services of the MPI brochure; Coach teams of MPI students for presentations or contests.

Previous Committee Work or Other Service

- 1986 **Advisory Council**, MPI Grant from the Missouri Coordinating Board for Higher Education.
- 1986 **Calculus Textbook Committee**, Department of Mathematics & Statistics.
- 1989-1990 **Task Force & Curriculum Committee**, Van Horn HS, KCMO District Magnet, Engin. & Technology.
- 1992 **Software Review Committee**, Department of Mathematics & Statistics.
- 1993-1994 **Chair**, annual Kansas City Regional Mathematics Technology EXPO.
- 1996-1997 **Executive Steering Committee**, ICTCM 9 & 10, International Conf. on Tech. in Collegiate Math.
- 1997 **Program Chair** for the "Beyond Calculus" strand, ICTCM 10, held Nov. 5-9, 1997
- 1997-2000 **CIDMath Virtual Office Hours Group**, University of Missouri system-wide internet service for students, and supervised the project at UMKC (**\$125,000 UM project**).
- 1998-2000 **Experimental Algebra Committee**, Department of Mathematics & Statistics.
- 2004-2005 **Search Committee**, Department of Mathematics and Statistics.
- 2004 **UM-System wide Mathematics Group**
- 2004-2008 Dept. of Mathematics & Statistics: **Scheduling Committee, Adjunct Lecturer Hiring & Supervisor**
- 2007 **Associate Chair** – Winter semester

Continuing Committee Work

- 1992-present **Steering Committee**, annual Kansas City Regional Mathematics Technology EXPO
 - 2003-present **Curriculum Design Team & Interviewer, Institute for Urban Education (IUE)**
 - 2004-present Department of Mathematics and Statistics:
 - **Department contact** for Math 105, 402, 407, 412, 444, 464 WI
 - **Summer GTA/Adjunct Workshop**
 - 2005-present Department of Mathematics and Statistics: **Undergraduate Program** Committee
 - 2005-present **Teacher Education Coordinating Council (TECC)**, School of Education, UMKC, & **TECC Technology** Committee
 - 2008-present Department of Mathematics and Statistics:
 - **Alumni** Committee
 - **GTA Supervisory** Committee
 - **Mathematics Curriculum** Committee
 - 2008-present **Mathematics Advisor/Liaison** Southwest Early College Campus (SWECC) & Interviewer
 - 2008-present **FaCET Teaching Enhancement Grants (TEG)** Committee (3 year appointment)
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Administrative/Coordinator Activities

- 2005-present Mathematics for Teachers Coordinator (Math 130, 140, 204, 214, 224, 244, 414/5514, 424/5524, Stat 234)
 - 2005-present Entrance Tests (Math 110, 120, 206, 210) Coordinator
 - 2005-present Department MAA Liaison, Mathematical Association of America
 - 2004-present Advisor Contact
 - 2004-present Editor, Undergraduate & Graduate Catalog
 - 2006-present Editor, Entrance Tests Column & Common Finals page, Registration & Enrollment Guide each semester
 - 2004-present Webmaster, Department Web Site (with E. Hall)
 - 1988-present Expository Talks Series Coordinator
 - 1999-present Video Series Coordinator
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Reports Written/Co-written, Award Nomination Packages, Slide Shows, etc. (since 2004)

- 2004-present Academic Advisors Reference Document (41 pages)
- Jan. 2004 Department flyers: “Welcome to the Semester”, “Math Minors”, “Math Videos”, etc.
- May 2004 **Nomination package** for Becky Roberts, Dean’s Award for Outstanding Teaching (she won)
- Aug. 24, 2006 Budget Committee Report
- Fall 2004 Student Data Survey
- Dec. 11, 2005 State-of-the-Department Powerpoint Slide Show
- Mar. 14, 2006 Co-writer: Additional GTA Positions Proposal
- Mar. 22, 2006 Co-writer: Department Progress Report
- Mar. 2006 **Nomination package** for Breanne Volkerding, SGS Superior Teaching Award (she won)
- June 22, 2006 Summary of Fall 2005 Department Faculty Communication Survey
- Sept. 24, 2006 Student Support Poster for “Celebrate UMKC” event
- Oct. 16, 2006 Additional Full-time Lecturers Proposal
- Oct. 20, 2006 M.S. Class Planner
- Feb. 20, 2007 Survey of Department Offices
- June 2, 2007 Entrance Tests – First Year Report (17 pages)
- July-Dec. 2007 Drafted Information for new A&S Department Flyers
- Aug. 27, 2007 Co-designer: Updated State-of-the-Department Powerpoint Slide Show
- Sept. 19, 2007 **Nomination package** for Carol Hanson, Graduate Student Award for “Perseverance” (she won)
- Jan. 14, 2008 Professional Development – Secondary Mathematics Teachers web page
- Feb. 2008 **Nomination package** for Samantha Reynolds, SGS Superior Teaching Award (she won)
- Apr. 30, 2008 Contributor: GTA Cost Analysis Report
- July 28, 2008 Contributor: Department Report AY07-08
- Aug. 25, 2008 Entrance Tests Report of the First Two Years (34 pages)

Recruitment/Outreach Activities (since 2003)

- Aug. 2003-2004 Meet incoming A&S Freshmen
 - Sept. 21, 2004 A&S Recruiters Meeting, Department representative
 - Sept. 1, 2006 A&S Recruiters Meeting, Department representative
 - Sept. 4, 2007 A&S Recruiters Meeting, Department representative
 - Oct. 28, 2005 Host, Emporia State University Faculty and Students
 - Feb. 15, 2006 Host, Pembroke Hill School Faculty and Students
 - Nov. 17, 2006 Host, Emporia State University Faculty and Students
 - Feb. 6, 2007 Host, Northwest Middle School 8th graders with UMKC Welcome Center
 - Sept. 14, 2007 Speaker, Visited Pembroke Hill Upper School, Careers in Mathematics
 - Nov. 2, 2007 Host, Emporia State University Faculty and Students
 - Nov. 7, 2008 Host, William Jewell College Faculty and Students
 - Nov. 21, 2008 Host, Emporia State University Faculty and Students
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Miscellaneous Professional Activities

- October 1985 Arranged for UMKC Dept. of Mathematics & Statistics **Colloquium Speakers** Peter Hilton and Jean Pedersen, and a meeting with local high school teachers afterwards.
 - May 1986 **Consultant** on Mathematics Testing, Nowlin Junior High School and Van Horn High School.
 - 1986 **Listed as a speaker** in "Science and Mathematics Professionals: Speakers' Bureau for Secondary School Classes", an MPI (Mathematics and Physics Institute) publication.
 - Oct. 29, 1987 Arranged for Dept. of Mathematics & Statistics **Colloquium Speaker** Peter Hilton.
 - 1987-1994 Presented twice-annual **EIT (Engineers in Training) Mathematics Review** lectures at UMKC.
 - March 1989 Arranged for Dept. of Mathematics & Statistics **Colloquium Speaker** Richard Friedlander.
 - April 30, 1992 **Arranged** for the visit to the MPI of the Crowder College solar car STAR II.
 - Oct. 30, 1995 **Respondent** to a history of mathematics paper at William Jewell College, Liberty, MO.
 - August 1996 **Beta tester** for Soft Warehouse's software "Derive for Windows" released in October 1996.
 - Dec. 4, 1998 Arranged for Dept. of Mathematics & Statistics **Colloquium Speaker** Doug Bullock, Boise State Univ.
 - 1999-2000 **Consultant** to Doug Bullock on starting an MPI-like program at Boise State University.
 - May 2004 **First round reader** for the UMKC Sosland Journal.
 - May 2005 **Final reader** for the UMKC Sosland Journal.
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