

Short CURRICULUM VITAE

(full version available upon request)

Colm Mulcahy

- Address** Department of Mathematics
Spelman College, PO Box 953
Atlanta, Georgia 30314
Telephone : (404) 270 – 5837
Fax : (404) 270 – 5836
Email : colm@spelman.edu
URL : <http://www.spelman.edu/~colm>
- Education** Ph.D. in Mathematics, Cornell University, 1985
M.A. in Mathematics, Cornell University, 1982
M.Sc. in Mathematics, University College Dublin, 1979
B.Sc. in Mathematical Sciences, University College Dublin, 1978
- Employment** Spelman College, Associate Professor, 1996 –
(Chair, Dept. of Mathematics, 2003 – 2006)
Spelman College, Assistant Professor, 1988 – 1996
Emory University, Assistant Professor, 1987 – 1988
University of Hawaii at Manoa, Assistant Professor, 1985 – 1987

Professional memberships

MAA, SIAM, AWM, ACM, IEEE, AAAS, IMS (Irish Mathematical Society), IBM (International Brotherhood of Magicians)

Courses taught

Quantitative Reasoning, Precalculus, Calculus I, II & III, Introduction to Mathematics Seminar, Foundations of Mathematics, Linear Algebra I & II, Number Theory, Geometry, Numerical Analysis, Probability & Statistics I & II, Abstract Algebra I & II, Real Variables I & II, Senior Seminar

Awards

1. 2001 *Fannie Lou Hamer Award* (Spelman College Board of Trustees) for community service, awarded April 2001.
2. 1997 *Carl B. Allendoerfer Award* (Mathematical Association of America prize for excellence in exposition), for “Plotting and Scheming with Wavelets,” *Mathematics Magazine* (December 1996), awarded August 1997 at MAA Mathfest '97.

Book Chapters

MAA: *The Second Book of BAMA Talks* (2009), *The Edge of the Universe—Celebrating Ten Years of Math Horizons* (2006); A.K. Peters: *Mathematical Wizardry for a Gardner* (2009), *Homage to a Pied Puzzler* (2009), *A Lifetime of Puzzles* (2008), *Puzzlers' Tribute: A Feast for the Mind* (2002).

Refereed Print Publications

1. “An ESPeriment with Cards,” *Math Horizons*, 10–12, Mathematical Association of America (February 2007)
2. “Top 5 Reasons to Like Mathematical Card Tricks,” *Math Horizons*, 5–7, Mathematical Association of America (February 2004)
3. “Fitch Cheney’s Five Card Trick and Generalizations,” *Math Horizons*, 10–13, Mathematical Association of America (February 2003)
4. (with John Rossi) “A fresh approach to the Singular Value Decomposition,” *College Mathematics Journal*, **29**, 3, 199–207 (May 1998)
5. “Image Compression Using The Haar Wavelet Transform,” *Spelman Science & Mathematics Journal*, **1**, 1, 22–31 (Spring 1997)
6. “Plotting and Scheming with Wavelets,” *Mathematics Magazine*, **69**, 5, 323–343 (December 1996)
7. “The Curves and Surfaces of Computer Aided Geometric Design,” *Maple Tech*, **3**, 1, Birkhäuser/Springer, 65–73 (April 1996)
8. (with Eberhard Becker & Alex Rosenberg) “Fans, quasi-fans, and their reduced Witt rings of higher level,” *Algebra Berichte*, **68**, 1–36 (1992)
9. (with Eberhard Becker & Alex Rosenberg) “Ring theory of higher level reduced Witt rings,” *Algebra Berichte*, **68**, 37–66 (1992)
10. (with Murray Marshall) “The Witt ring of a Space of Signatures,” *Journal of Pure and Applied Algebra*, **67**, 179–188 (1990)
11. (with Murray Marshall) “The representation theorem for Spaces of Signatures,” in Proceedings of a Conference on Quadratic Forms and Real Algebraic Geometry, *Rocky Mountain Journal of Mathematics*, **19**, 807–810 (1989)
12. “A representation theorem for higher level reduced Witt rings,” *Journal of Algebra* **119**, 105–122 (1988)
13. “An abstract approach to higher level forms and rigidity,” *Communications in Algebra*, **16**(3), 577–612 (1988)

Online Publications

1. 28 bi-monthly *Card Colms* at MAA Online, starting October 2004, exploring mathematical card principles and effects (<http://www.maa.org/columns/colm/cardcolm.html>)
2. (with Sylvia Bozeman) “Experiences in Attracting Women to Mathematics at Spelman College” (based on a talk given at a special session on *Innovative Mathematics Majors in Small/Medium Departments*, MAA Mathfest, Albuquerque, New Mexico, August 4, 2005), at (<http://persweb.wabash.edu/facstaff/axtellm/Curriculum%20Special%20Session/Colm.html>)
3. “Mathematical Card Tricks,” as guest columnist AMS’s *What’s New in Mathematics*, October 2000 (<http://www.ams.org/featurecolumn/archive/mulcahy1.html>)
4. “Life By The Numbers—PBS series on Mathematics,” review for *MAA Online*, June 1998 (<http://www.maa.org/features/lifebyTV.html>)

Workshops/ Minicourses/ Short Courses

Presented (or co-presented) 35 two- to six-hour minicourses or workshops at local, regional and national MAA meetings, as well as at Project NExT sessions, summer REUs, etc., on “The Mathematical Basics of Cryptography,” “Mathematical Card Tricks,” “Alternative Approaches to Geometry,” “Introduction to Image Compression Using Wavelets,” and “The Curves and Surfaces of the Digital Age.”

Presentations

Gave 135 presentations since 1989. Invited talks include:

1. (to be given) “Mathemagic with a Deck of Cards on the Interval Between 5.700439718 and 80658175170943878571660636856403766975289505440883277824000000000000,” MAA Lecture for Students, MAA Mathfest 2009, Portland, Oregon, August 6, 2009
2. “New Mathemagical Principles Applied to Card Tricks,” Lecturer at MAA Alabama State Dinner, Jacksonville State University, Jacksonville, Alabama, February 27, 2009
3. “The Curves and Surfaces of the Digital Age,” University of St. Thomas, St. Paul, Minnesota, April 15, 2008
4. “Circular Reasoning in Mathematical Magic,” 22nd Clemson Mini-Conference on Discrete Mathematics and Algorithms, Clemson University, Clemson, South Carolina, October 11, 2007
5. “New Mathematical Principles in Card Magic,” (Mini-Lecture), Georgia Magic Club – International Brotherhood of Magicians Ring 9, Atlanta, Georgia, April 16, 2007
6. “Magic with Math—Eine Kleine Nachtmagie,” BAMA (Bay Area Mathematical Adventures) Lecture, Santa Clara University, Santa Clara, California, November 19, 2005
7. (Banquet Speaker) “Eine Kleine Nachtmagie,” MAA Seaway Section Meeting, SUNY Geneseo, Geneseo, New York, October 28, 2005
8. “Wavelets—a new tool for imaging, graphics and Hollywood”, 16th Annual Conference on Undergraduate Mathematics, Rose-Hulman Institute of Technology, Terre Haute, Indiana, March 19, 1999

Professional Service

Bi-monthly columnist (*Card Colm*) at MAA Online (2004–); Consultant for Project NExT (1997–2002 and 2008–); MAA Subcommittee on Short Courses (2007–); BIO SIGMAA Electronic Communications Manager (2006–2007); MAA Committee on Minority Participation in Mathematics (2006–); *MAA Online* Editorial Board (2003–2007); *MAA Focus* Editorial Board (2003–); MAA’s *Math Horizons* Editorial Board (2003–2008); MAA MathFest Program Committee, Providence (2004); MAA Minicourse Committee (2000–2006); Co-organized contributed paper session on “Geometry In The Classroom In The Next Millennium” at the Joint Winter Meeting, San Antonio (Jan 1999); Co-organized *Exploring New Frontiers in Geometry: in the World Around Us and in Our Classrooms*, a whole-day symposium at the AAAS Annual Meeting, Philadelphia (Feb 1998); Co-organized *Wavelets: The Latest Big Splash in Science, Engineering, Imaging and Graphics*, a half-day symposium at the AAAS Annual Meeting, Philadelphia (Feb 1998); Co-organized a special two-day session on “Quadratic Forms and Real Algebraic Geometry” during the AMS meeting at the University of Chicago (May 1989)

May 6, 2009