

CURRICULUM VITAE : Steven B. Damelin

June 26, 2008

Short Bio

My Ph.D (1996) advisor was Doron Lubinsky (Georgia Tech) and my Alma-Mater is the University of the Witwatersrand, South Africa. I am Founding and Present Director of the Unit for Advances in Mathematics and its Applications, GSU (Georgia Southern University), and an Honorary Professor of Computational and Applied Mathematics, WITS (University of the Witwatersrand). My research is sponsored by NSF, the Airforce Office of Scientific Research and EPSRC. My research interests include Harmonic Analysis, Approximation Theory, Random Matrices, Differential Geometry, Computer Vision, Imaging, Signal Processing and Inverse Problems. I have over 65 research papers and 3 books accepted, submitted or in preparation and have given over 103 talks in 4 continents.

I was a 2005 IMA (Institute for Mathematics and its Applications), University of Minnesota, New Directions Professor and hold numerous other teaching and research awards. My list of undergraduate and graduate research students at GSU, WITS, University of Leicester and the University of Michigan can be found at <http://math.georgiasouthern.edu/~damelin/students.html>. From 2008-present, I have been involved in advising high school and minority students mathematics in Bulloch County Schools and in GSA, Georgia Southern Student Multicultural Center. I am a senior member of IEEE and an EPSRC fellow till the end of 2008. I served on the Georgia Southern Senate from 2005-2007. I have held visiting research and teaching positions at The University of the Witwatersrand, The University of South Florida, The Katholieke Universiteit, Belgium, The Pennsylvania State University and the University of Minnesota. Details of my research, awards, students and service can be found in my vita and on the homepages below:

- Personal homepage: <http://math.georgiasouthern.edu/~damelin>.
- UAIM homepage: <http://math.georgiasouthern.edu/~damelin/appcenter.html>.
- Cyber homepage: <http://math.georgiasouthern.edu/~damelin/greg/cyber.html>.

PERSONAL

Contact Details

- Department of Mathematical Sciences, Georgia Southern University, Postoffice Box 8093, Statesboro, GA 30460-8093, U.S.A. Phone: 912-681-5309; Fax: 912-681-0654.
- School of Computational and Applied Mathematics, University of the Witwatersrand, Private Bag 3, Wits, 2050, South Africa. Phone: 27-11-717-6138; Fax: 27-11-717-6149.
- email: damelin@georgiasouthern.edu; steve.damelin@gmail.com.
- Personal homepage: <http://math.georgiasouthern.edu/~damelin>.
- UAIM homepage: <http://math.georgiasouthern.edu/~damelin/applcenter.html>.
- Cyber homepage: <http://math.georgiasouthern.edu/~damelin/greg/cyber.html>.

Personal Information

Date of Birth: 1 November 1968
Permanent Resident, USA: June 2004-Present.
Children: Ora, Gabriel and Tal

Education

- (1996) Ph.D., Mathematics, (Advisor Doron Lubinsky, Georgia Tech).
Alma Mater, University of the Witwatersrand.
- (1993) M.Sc (with distinction), Mathematics, University of the Witwatersrand.
- (1991) B.Sc (Honors)(with distinction), Mathematics-Physics, University of the Witwatersrand.

Professional Experience

- (February 2008-Present) Honory Professor of Applied and Computational Mathematics, University of the Witwatersrand.

- (Spring 2007-Present) Founding and Present Director, Unit for Advances in Mathematics and its Applications (UAIM), <http://math.georgiasouthern.edu/~damelin/applcenter.html>.
- (April 2004-Present) Associate Professor of Mathematics, Georgia Southern University, U.S.A.
- (August 2000-April 2004) Assistant Professor of Mathematics, Georgia Southern University, U.S.A.
- (January 1997-August 2000) Lecturer, Mathematics Department, University of the Witwatersrand, South Africa.
- (January 1996-January 1997) Junior Lecturer, Mathematics Department, University of the Witwatersrand, South Africa.

Visiting Positions

- (August 2007-December 2007) Research Professor of Mathematics and Seasonal Lecturer, University of the Witwatersrand, South Africa.
- (August 2005-July 2006) New Directions Professor in Imaging, Institute for Mathematics and its Applications, University of Minnesota, U.S.A.
- (August 1999-August 2000) Visiting Professor, Mathematics Department, Penn State University, U.S.A.
- (August 1996-December 1997) Visiting Professor, University of South Florida, Visiting Professor, Katholieke Universiteit, Leuven, Belgium, Research Associate, John Knopmacher centre for Applicable Analysis and Number Theory, University of the Witwatersrand.

Research

Honors and Awards

- 2007, Senior Member, IEEE.
- Summer 2007: Airforce Office of Research Summer Fellow.
- August 2005-July 2006: 2005 New Directions Professor in Imaging (IMA, University of Minnesota).
- April 2005-April 2008: EPSRC Fellow.

- January 1997-December 1997: Freda Lawenski Fund for Academic Excellence recipient.
- January 1996-December 1997: Rosterholtz Memorial Scholar.
- January 1995-December 1997: FRD Post Doctorial Fellow.
- Listed in Marquis, "Who's Who in America", "Who's Who in American Education", "Who's Who in the World", Inaugural Member of the IBC Leading Educators of the World.

Research Interests

I work in the research areas below and the interplay between them:

- Harmonic analysis, Minimal energy configurations (which occur for example in crystal structure), Orthogonal Polynomials, Random Matrices.
- Discrepancy, Numerical analysis, Differential Geometry, Approximation theory, Combinatorial/graph designs.
- Computer Vision, Imaging (for example Tomography/Segmentation Physics), Recognition/Feature Extraction Problems (which occur in medical imaging and target and sensor recognition), Networks (in particular self healing networks, bioinformatic networks), Clustering, Sampling, Gene/protein interaction, Computational intelligence, Inverse problems.

Scientific Research-by Subject

All work can be found on the homepages below:

- Personal homepage: <http://math.georgiasouthern.edu/~damelin>.
- Cyber homepage: <http://math.georgiasouthern.edu/~damelin/greg/cyber.html>.

Discrepancy, Numerical analysis, Differential Geometry, Approximation theory, Combinatorial/graph designs**Books**

- (1) "Linear independent vectors and applications", in preparation with G. Michalski and A. Sills.

Papers

- (1) S.B. Damelin and D.S. Lubinsky, Necessary and sufficient conditions for mean convergence of Lagrange interpolation for Erdős weights, *Canad. Math. J.*, (40)(1996), pp 710–736.
- (2) S.B. Damelin and D.S. Lubinsky, Necessary and sufficient conditions for mean convergence of Lagrange interpolation for Erdős weights II, *Canad. Math. J.*, (40) (1996), pp 737–757.
- (3) S.B. Damelin, Converse and smoothness theorems for Erdos weights in L_p , *J. Approx. Theory.*, Volume 93, (3)(1998), pp 349-398.
- (4) S.B. Damelin and D.S. Lubinsky, Jackson theorems for Erdos weights in L_p , *J. Approx. Theory.*, Volume 94, (3) (1998), pp 333-382.
- (5) S.B. Damelin, The Lebesgue constant of Lagrange interpolation for Erdos weights, *J. Approx. Theory.*, Volume 94, 2, (1998), pp 235-262.
- (6) S.B. Damelin, Smoothness theorems for Erdos Weights II, *J. Approx. Theory.*, Volume 97, (1999), pp 220-239.
- (7) S.B. Damelin, The weighted Lebesgue constant of Lagrange interpolation for exponential weights on $[-1,1]$, *Acta-Mathematica (Hungarica)*., 81(3) (1998), pp 211-228.
- (8) S.B. Damelin and K. Diethelm, Interpolatory Product quadratures for Cauchy principal value integrals with Freud weights, *Numer. Math.* 83 (1999), pp. 87-105.
- (9) S.B. Damelin, A characterisation of smoothness for Freud weights, *Journal of Computational and Applied mathematics.*, 99(1998), pp 463-473.
- (10) S.B. Damelin, Smoothness theorems for generalized symmetric Pollakzek weights on $[-1,1]$, *Journal of Computational and Applied mathematics.*, 101 (1999), pp 87-103.

- (11) S.B. Damelin, Marchaud inequalities for a class of Erdős weights, *Approximation Theory VIII-Vol I (1995)*, Approximation and Interpolation, Chui et al, pp 169–175.
- (12) S.B. Damelin, Lagrange interpolation for non Szegő weights on $[-1,1]$, in the *Proceedings of the International Workshop on Approximation Theory and Numerical Analysis*, Dedicated to Prof. M. R. Occorsio.
- (13) S.B. Damelin, Weighted approximation for Erdos weights, *Diss. Math.*, Vol 1 (1996), pp 163–171.
- (14) S.B. Damelin, H.S Jung and K.H Kwon, Necessary conditions for mean convergence of Lagrange interpolation for exponential weights, *Journal of Computational and Applied Mathematics*, Volume 132(2)(2001), pp 357-369.
- (15) S.B. Damelin and K. Diethelm, Boundedness and uniform approximation of the weighted Hilbert transform on the real line, *Numer. Funct. Anal. and Optimiz.*, 22(1 and 2) (2001), pp 13-54.
- (16) S.B. Damelin, H.S. Jung and K.H. Kwon, On mean convergence of Hermite-Fejér and Hermite interpolation for Erdős weights on the real line, *Journal of Computational and Applied Math*, Volume 137 (2001), pp 71-76.
- (17) S.B. Damelin, H.S. Jung and K.H. Kwon, A note on mean convergence of Lagrange interpolation in L_p , *Journal of Computational and Applied mathematics*, 133 (1-2) (2001), pp 277-282.
- (18) S.B. Damelin, H.S. Jung and K.H. Kwon, Mean convergence of Hermite-Fejér and Hermite interpolation of higher order for Freud weights, *Journal of Approximation Theory*, 113 (2001), pp 21-58.
- (19) S.B. Damelin, H.S. Jung and K.H. Kwon, Converse quadrature sum estimates for weights on the real line, *Analysis*, 22(2002), pp 33-55.
- (20) S.B. Damelin, The Hilbert transform and orthonormal expansions for exponential weights, *Approximation Theory X: Abstract and Classical Analysis*, Chui, Schumaker and Stoekler (eds), Vanderbilt Univ. Press (2002), pp 117-135.
- (21) S.B. Damelin, Marcinkiewicz-Zygmund inequalities and the Numerical approximation of singular integrals for exponential weights: Methods, Results and Open Problems, some new, some old; *Journal of Complexity*, 19(2003), pp 406-415.
- (22) S.B. Damelin, H.S. Jung and K.H. Kwon, Mean convergence of extended Lagrange interpolation for exponential weights, *Acta Applicandae Mathematicae*, 76(2003), pp 17-36.

- (23) S.B. Damelin, Pointwise bounds of orthogonal expansions on the real line via weighted Hilbert Transforms, *Advances in Computational Mathematics* (2006), pp 1-21.
- (24) S.B. Damelin and H.S. Jung, Pointwise convergence of derivatives of weighted Lagrange interpolation polynomials, *Journal of Computational and Applied Mathematics*, Volume 173, (2)(2005), pp 303-319
- (25) S.B. Damelin and K. Diethelm, Numerical solution of Fredholm integral equations on the line, *Journal of Integral equations and Applications*, Volume 13(3), 2004, pp 273-292
- (26) S.B. Damelin and K. Diethelm, Weighted polynomial approximation and Hilbert Transforms: Their connections to the numerical solution of singular integral equations, *Proceedings of Dynamic Systems and Applications*, Volume 4 (2004), pp 20-26 Ed. G. S. Ladde, N.G. Medhin. M. Sambandham
- (27) S.B. Damelin and P. Grabner, Numerical integration, energy and asymptotic equidistribution on the sphere, *Journal of Complexity*, 19(2003), pp 231-246. (Postscript) Corrigendum, *Journal of Complexity*, (20)(2004), pp 883-884.
- (28) S.B. Damelin, J. Levesley and X. Sun, Energy estimates and the Weyl criterion on compact homogeneous manifolds, *Algorithms for Approximation*, A. Iske and J. Levesley (eds.), Springer-Verlag, Heidelberg, pp 359-368.
- (29) S. B. Damelin, A discrepancy theorem for harmonic functions on the d dimensional sphere with applications to point cloud scatterings, submitted
- (30) B. Bajnok, S.B. Damelin, J. Li and G. Mullen, A constructive method of scattering points on d dimensional spheres using finite fields, *Computing (Springer)*, 68 (2002), pp 97-109.
- (31) S.B. Damelin, G. Michalski, G. Mullen and D. Stone, On the number of linearly independent binary vectors of fixed length with applications to the existence of completely orthogonal structures, *Monatsh Math*, (1)(2003), pp 1-12.
- (32) S. B. Damelin, G. Michalski and G. Mullen, The cardinality of sets of k independent vectors over finite fields, *Monatsh. Math*, 150(2007), pp 289-295.
- (33) S. B. Damelin, J. Levesley, D. Ragozin and X. Sun, Energies, Group Invariant Kernels and Numerical Integration on Compact Manifolds, submitted.
- (34) S. B. Damelin, F. Hickernell, D. Ragozin and X. Zeng, On energy, discrepancy and G invariant measures on measurable subsets of Euclidean space, submitted.

- (35) S. B. Damelin, A Walk through Energy, Discrepancy, Numerical Integration and Group Invariant Measures on Measurable Subsets of Euclidean Space, accepted, numerical algorithms.
- (36) S. B. Damelin, J. Leversley, D. Ragozin and X. Sun, A discrepancy theorem for 2 point homogeneous spaces, submitted.

Harmonic analysis, Minimal energy configurations (which occur for example in crystal structure), Orthogonal Polynomials, Random Matrices.

Books

- (1) Hilbert Space, Boundary Value Problems and Orthogonal Polynomials by A. Krall, 2002. (Editor).
- (2) (with W. Xu-Ma (University of South Florida)): "Topics in Integrable Systems, Special Functions, Orthogonal Polynomials and Random Matrices", Journal of Computational and Applied Mathematics, Special Volume, 202, (1), May 2007, pp 1-154.

Papers

- (1) S.B. Damelin, Asymptotics of recurrence coefficients for orthonormal polynomials on the line-Magnus's method revisited, Mathematics of Computation, 73(2004), pp 191-209.
- (2) S.B. Damelin and A. Kuijlaars, The support of the extremal measure for monomial external fields on $[-1, 1]$, Trans.Amer.Math. Soc. 351 (1999), 4561-4584.
- (3) S.B. Damelin, P. Dragnev and A. Kuijlaars, The support of the equilibrium measure for a class of external fields on a finite interval, Pacific Journal of Mathematics, Volume 199 (2)(2001), pp 303-321.
- (4) S.B. Damelin, The distribution of general interpolation arrays for exponential weights, Electronic Transactions of Numerical Analysis, Volume 12, 2002, pp 12-20.
- (5) S.B. Damelin, Weighted polynomial approximation on discrete sets, Monatshefte für Mathematik, (138)(2)(2003), pp 111-131.

- (6) S.B. Damelin, On the maximum modulus of weighted polynomials in the plane, a theorem of Rakhmanov, Mhaskar and Saff revisited, *Journal of Computational and Applied Mathematics*, vol. 155 (2003), pp 455-459.
- (7) S. B. Damelin and V. Maymeskul, On Point Energies, Separation Radius and Mesh Norm for s -Extremal Configurations on Compact Sets in R^n , *Journal of Complexity*, Volume 21(6), pp 845-863.
- (8) D. Benko, S. B. Damelin and P. Dragnev, On the support of the equilibrium measure for arcs of the unit circle and real intervals, *Electronic Transactions on Numerical Analysis*, (25)(2006), pp 27-40
- (9) S. B. Damelin and V. Maymeskul, Minimal Discrete Energy Problems and Numerical Integration on Compact Sets in Euclidean Spaces, *Algorithms for Approximation*, A. Iske and J. Levesley (eds.), Springer-Verlag, Heidelberg, pp 369-378.
- (10) S. B. Damelin, Advances on regularity and dislocation properties of energy minimizing configurations, discrepancy, manifold learning and their applications, submitted.
- (11) S. B. Damelin and V. Maymeskul, On dislocation and mesh norm of s extremal configurations, *Acta Math (Hung)*, to appear.
- (12) D. Benko, S. B. Damelin and P. Dragnev, On supports of equilibrium measures with concave signed equilibria and the Iterated Balayage Algorithm, submitted.

Computer Vision, Imaging, Recognition/Feature Extraction Problems, Signal Processing, Computational Intelligence, Inverse problems.

Books

- (1) "Topics in Applied Mathematics, Computer Vision, Imaging and Wavelets", in preparation with W. Miller (U Minnesota).

Papers

- (1) D. Greenblatt and S.B. Damelin, Laminar boundary layers subject to high frequency travelling-wave fluctuations, *AJAA Journal.*, Vol. 31, 5 (1993), pp 957-959.

- (2) L. H. Damelin, S. Volles, J. M. Whitcutt, S. B. Damelin, J. J. Alexander, Hormesis: A stress response in cells exposed to low levels of heavy metals, *Human and Experimental Toxicology*, Volume 19 (2000), pp 420-430.
- (3) Y. Ma, S. B. Damelin, O. Masoud and N. Papanikolopoulos, Activity Recognition via Classification Constrained Diffusion Maps, *ISCV (International Symposium of Computer Vision)*, 2006, pp 1-8.
- (4) S. B. Damelin and A. J. Devaney, Local Paley Wiener theorems for analytic functions on the unit sphere, *Inverse Problems*, (23)(2007), pp 1-12.
- (5) S. B. Damelin, On Bounds for Diffusion, Discrepancy and Fill Distance Metrics, *Principal Manifolds*, Springer Verlag 2007, Editor, A. Gorban, pp 32-42.
- (6) S. B. Damelin and A. J. Devaney, Local Paley Wiener theorems, to appear in *Proceedings of Inverse Problems Symposium*, East Lansing, Michigan, 11-12 June 2007.
- (7) J. H. Ann, P. Bigeleisen and S. B. Damelin, Image segmentation of nerves by ultrasound using modified Mumford-Shah and prior information methods, submitted.
- (8) Y. Keller and S. B. Damelin, Classification via Diffusion maps, *IEEE SSP*, Madison, submitted.
- (8) Rui Xu, Steven Damelin, and Donald C. Wunsch II, "Applications of diffusion maps in gene expression data-based cancer diagnosis analysis," In *Proceedings of the 29th Annual International Conference of IEEE Engineering in Medicine and Biology Society*, Lyon, France, pp. 4613-4616, August, 2007.
- (9) Rui Xu, Steven Damelin, B. Nadler, and Donald C. Wunsch II, Clustering of high-dimensional gene expression data with feature filtering methods and diffusion maps, *Proceedings of the International Conference on Biomedical Engineering and Informatics*, Sanya, China, May, 2008.
- (10) R. Xu, S. B. Damelin and D. Wunsch, Clustering of Cancer Tissues using Diffusion Maps and Fuzzy ART with Gene Expression Data, submitted.
- (11) Kerry-Anne Cawse, Steven Damelin, Richard McIntyre, Michael Mitchley, Louis du Plessis and Michael Sears, An Investigation of data compression for Hyperspectral core image data, submitted for publication.

Research Funding History

- EP-C000285 (Principal Investigator): 01/01/08-05/31/08: "Approximation on Spheres" (\$10000.00).

- 2007 Air Force Summer Faculty Fellowship (Principle Investigator) Model-Based Object Recognition (\$14673.11).
- NSF-DMS-REU-0653331 (Principle Investigator): 05/01/07-08/01/07: Approximation, Equilibrium Measures and Discrepancy over Domains, Finite Fields and Smooth Manifolds (\$6,805.00).
- NSF-DMS-0555839(Principle Investigator): 07/01/06-07/01/09: Approximation, Equilibrium Measures and Discrepancy over Domains, Finite Fields and Smooth Manifolds (\$94549.00).
- NSF-DMS-0439734(New Directions Professorship): 9/1/05-6/30/06: Institute for Mathematics and its Applications (\$35106.00).
- EP-C000285(Principal Investigator): 05/01/05-12/30/07: "Approximation on Spheres" (\$15000.00).
- **Co-Principal Investigator:** CLEC-2005-09: November 2005. Georgia Southern Distinguished CLEC (Campus Life Enrichment Committee) series talk grant: "Richard Varga,-Ken State University" (\$1090.00).
- **Principle Investigator:** CLEC-2004-03: November 2004. Georgia Southern Distinguished CLEC (Campus Life Enrichment Committee) series grant: "Doron S. Lubinsky-Gatech" (\$1260.00).
- **Principle Investigator:** CTE-2004(B): October 2004-October 2005: Georgia Southern Center for Excellence in Teaching: "Travel to the Eleventh International Conference in Approximation Theory". (\$1000.00).
- **Principle Investigator:** Department of Mathematical Sciences, Georgia Southern, Foundation Grants: (November 2000, October 2001, February 2002, November 2002, October 2003, March 2005): (\$2060.00).
- **Principle Investigator:** CTE-2003(A): October 2003-October 2004: Georgia Southern Center for Excellence in Teaching: "Linear independence and Finite Fields". (\$1299.00).
- **Principle Investigator:** GAP-2002-645: September 2002-September 2003: Georgia Southern University: "Distribution of points on spheres and Numerical Integration". (\$4500.00).
- **Principle Investigator:** GAP-2001-987: September 2001-September 2002: Georgia Southern University: "Numerical integration and polynomial approximation". (\$1750.00).
- **Principle Investigator:** CS-2001-07: October 2001-June 2002: Georgia Southern COST: "Numerical integration and its complexity". (\$300.00).
- **Principle Investigator:** CS-2000-23: October 2000-June 2001: Georgia Southern COST: "Numerical integration and its complexity". (\$4500.00).

- **Principle Investigator:** WCI-99-199900: August 1999- August 2000: Center for Applicable Analysis, WITS: "Collaborative Research with Pennsylvania State University". (R32000.00).
- **Principle Investigator:** WC-01-98-067452: January 1998- January 1999: University of the Witwatersrand, Research Grant: "Numerical integration on unbounded intervals and supports of equilibrium measures" (R6530.00)
- **Funded by:** NSF-DMS-95-456-7894: August 1996-March 1997: "Minimal Discrete Energy Problems and Approximation Theory" (\$6000.00).
- **Funded by:** FW-92-09234568: January 1995-September 1998: Belgium FWO Research "Orthogonal Polynomials and their Applications" (BF 250000.00).
- **Principle Investigator:** WCI-97-02: August 1996-August 1997:Center for Applicable Analysis, WITS: "Potentials and Approximation Theory". (R5000.00).
- **Principle Investigator:** WC-96-896234: August 1996-June 1997:University of the Witwatersrand Council Research Grant: "Collaborative Research with the University of South Florida". (R42000.00).
- FRP (Focused Research Proposal) (with Francesco Fedele, Gatech-Sav and Antonio Yezzi, Gatech Atlanta)-submitted.

Distribution of papers amongst journals-appeared, accepted

- (1) Journal of Approximation theory;
- (2) Transactions of AMS;
- (3) Pacific Journal of Mathematics;
- (4) Canadian Journal of Mathematics;
- (5) Journal of Computational and Applied Mathematics;
- (6) Numerische Mathematik;
- (7) Acta Math (Hung);
- (8) Numerical Functional Analysis;
- (9) Analysis;
- (10) Computing (Springer-Verlag);

- (11) Human and Experimental Toxicology;
- (12) American Journal of Aeronautics and Astronautics;
- (13) Dissertations in Mathematics;
- (14) Vanderbilt Press;
- (15) Electronic Transactions of Numerical Analysis;
- (16) Monatshefte für Mathematik;
- (17) Journal of Complexity;
- (18) Mathematics of Computation;
- (19) Acta Applicandae Mathematicae;
- (20) Journal of Integral equations and Applications;
- (21) Advances in Computational Mathematics;
- (22) Dynamic Systems and Applications;
- (23) Inverse Problems;
- (24) IEEE EMBC, IEEE WWCE, IEEE ISCV;
- (25) Numerical Algorithms.

Talks

- (1) Department of Mathematics, University of Haifa, Israel, April 1994: "K functionals in Approximation Theory".
- (2) The Eighth International Conference of Approximation Theory at College Station, Texas, January 1995: "Marchaud Inequalities in Approximation Theory".
- (3) Department of Mathematics, University of South Florida, Tampa, U.S.A (invited talk) January 1995: "The role of the Mhaskar-Rakhmanov-Saff number in Jackson-Bernstein Theorems on the line".
- (4) Department of Mathematics, The University of the Witwatersrand, South Africa, Colloquium, February 1995: "On Nevai's M class of measures".
- (5) Department of Mathematics, Technion, Haifa (invited talk), December 1995: "On Erdos Weights and their effect on Approximation by Polynomials".

- (6) Department of Mathematics, University of Tel-Aviv (invited talk), December 1995: "Pollaczek Weights in Jackson-Bernstein Theorems".
- (7) Department of Mathematics, The University of the Witwatersrand, South Africa, Colloquium, June 1996: "Moduli of continuity for approximation on the line".
- (8) Department of Mathematics, University of Cape Town, South Africa, (invited talk), June 1996: "Recent advances on how we approximate functions with strong singularities at the endpoints of finite intervals".
- (9) The Seventh International Conference on Computational and Applied Mathematics, Leuven, July 1996: "Lagrange interpolation for exponential weights on the line".
- (10) Department of Mathematics, Katholieke Universiteit, Leuven, Belgium (invited talk), July 1996: "Rates of convergence of polynomial approximation-What can be said for unbounded intervals?"
- (11) Department of Mathematics, University of South Florida, Tampa, U.S.A, August 1996: "Approximation by weighted polynomials I."
- (12) Department of Mathematics, The Ohio State University, Columbus, U.S.A (invited talk), October 1996: "Lagrange Interpolation, Bernstein Theorems and Beyond."
- (13) Department of Mathematics, University of South Florida, Tampa, U.S.A, August 1996: "Approximation by weighted polynomials II."
- (14) Department of Mathematics, University of South Florida, Tampa, U.S.A, February 1997: "Towards a generalization of Rakhmanov's conjecture for Discrete polynomials."
- (15) Department of Mathematics, Katholieke Universiteit, Leuven, Belgium (invited talk), February 1997: "Weighted Polynomials on Discrete Sets."
- (16) Institut für Mathematik, Universität Hildesheim, Hildesheim, Germany, (invited talk) February 1997: "Quadrature on unbounded intervals."
- (17) The Joint SAMS/AMS International Mathematics Conference, Pretoria, June 1997: " Balayage and a resolution of a conjecture of P. Deift."
- (18) Invited speaker at the International Workshop on Approximation Theory and Numerical Analysis, Vico Equense, Italy, September 1997. Presented a paper entitled "Constrained Approximation and its Applications". Organiser: Guiseppe Mastroianni.
- (19) The Eighth International Symposium of Orthogonal Polynomials and its Applications, Sevilla, Spain, September 1997: "On n th root asymptotics of discrete orthogonal polynomials."

- (20) Invited speaker, Approximation Theory Summer School, Potenza University, Italy, September 1997 and presented a seminar series entitled "Orthogonal Polynomials on the Real Line". Organiser: Guiseppe Mastroianni.
- (21) Department of Mathematics, University of Madrid-Carlos III (invited talk), September 1997: "On the support of the equilibrium measure for non convex external fields."
- (22) First International Pacific Rim Conference on Mathematics, Hong-Kong, January 1998: "Numerical Approximation of Singular operators."
- (23) Department of Mathematics, The University of the Witwatersrand, South Africa, March 1998: "On weighted Lebesgue Constants."
- (24) Department of Mathematics, Courant Institute, New York, U.S.A, (invited talk) April 1998: "On Constrained Equilibrium Problems and Minimizers."
- (25) Department of Mathematics, Princeton University, Princeton, U.S.A (invited talk), April 1998: "On supports of equilibrium measures."
- (26) The Pennsylvania-State University, U.S.A (invited talk), April 1998: "Orthogonal Polynomials and Approximation of Functions which have fast growth."
- (27) Drexel University, Philadelphia, U.S.A, (invited talk) April 1998: "Hermite interpolation and Lebesgue Constants in Numerical Analysis."
- (28) Department of Mathematics, The Ohio State University, Columbus, U.S.A (invited talk), April 1999: "Necessary conditions for mean convergence of Lagrange interpolation-an extension of a theorem of Nevai."
- (29) The Pennsylvania-State University, U.S.A, September 1999: "Discrepancy and Finite Fields I."
- (30) The Pennsylvania-State University, U.S.A, October 1999: "Discrepancy and Finite Fields II."
- (31) The Pennsylvania-State University, U.S.A, November 1999: "Discrepancy and Finite Fields III."
- (32) Joint National American Mathematical Society meetings in Washington DC, January 2000, Special Session on Coding and its Applications, "Finite Fields and Points on Spheres."
- (33) Department of Mathematics, Indiana-Purdue University, U.S.A, colloquium, (invited talk), March 2000: "Numerical approximation of Hilbert Transforms."

- (34) Department of Mathematics and Computer Science, Georgia Southern University, U.S.A, colloquium, (invited talk), March 2000: "A walk through weighted polynomial approximation, numerical quadrature and potential theory."
- (35) Seventh National SIAM conference on Applied Linear Algebra, Raleigh, North Carolina, October 2000: "Combinatorial designs and linear independence."
- (36) Department of Mathematics, Indiana-Purdue University, U.S.A, (invited talk), November 2000: "On Constrained Minimizers in Mathematical Physics."
- (37) Department of Mathematics, Georgia Southern University, U.S.A, colloquium, September 2000: "Fourier Expansions and weighted Hilbert Transforms."
- (38) Department of Mathematics, University of South Carolina, U.S.A, colloquium, (invited talk), November 2000: "Mean convergence of weighted orthonormal expansions."
- (39) Department of Mathematics, Georgia Southern University, U.S.A, colloquium, February 2001: "Discrepancy theorems on Spheres."
- (40) Invited speaker, AMS sectional meeting in South Carolina, March,16-18 2001: "The distribution of interpolation points for exponential weights". Organisers: K. Oskolkov, P. Petrushev and V. Temlyakov.
- (41) Tenth International Approximation theory conference, St Louis, March 2001: "Interpolation arrays and Equilibrium Measures."
- (42) Department of Mathematics, Emory University, U.S.A, colloquium, (invited talk), September 2001: "Discrepancy theorems on Spheres and Energy."
- (43) Department of Mathematics, Georgia Southern University, U.S.A, colloquium, September 2001: "Approximation with Energy."
- (44) Invited Speaker, AMS meeting in Chatanooga, October 15-16th 2001-to give: "Distribution of points on d-dimensional spheres using finite fields." Organiser: L. Schumaker.
- (45) Department of Mathematics, Braunschweig, Germany, colloquium, (invited talk), November 2001: "Marcinkiewicz-Zygmund inequalities and the numerical approximation of singular integrals for exponential weights."
- (46) Invited Speaker, Prestigious Mathematical Institute in Oberwolfach, Germany, (Numerical integration and its complexity), (November 2001): Talk: "Numerical integration on d spheres". Organisers: Henryk Wozniakowski, Grzegorz Wasilkowski and Knut Petras.

- (47) Department of Mathematics, Georgia Southern University, U.S.A, colloquium, September 2001: "Fun with Continued Fractions."
- (48) Department of Mathematics, Armstrong State University, U.S.A, colloquium, (invited talk), December 2001: "Supports of weighted Polynomials in the Plane."
- (49) Department of Mathematics, Texas A&M, U.S.A, colloquium, (invited talk) February 2002: "Pseudo-Differentiable Operators on Spheres."
- (50) Department of Mathematics, Georgia Southern University, U.S.A, colloquium, February 2002: "Net design and finite fields."
- (51) Special Session in Numerical Linear Algebra, AMS South Eastern Meeting, Atlanta, GA, March 2002: "Asymptotics of Recurrence Coefficients for Orthogonal Polynomials for Exponential Weights with one point of Non Analyticity."
- (52) The Pennsylvania-State University, U.S.A, (invited talk), July 2002: "Linear independence and combinatorial designs."
- (53) Invited Participant, Institute for Mathematics and its Applications, University of Minnesota, 'Special functions in the Digital age', July 2002. (International conference). Organisers: George Andrews (PSU), Richard Askey (Madison).
- (54) Invited Speaker, FOCM workshop on 'Numerical integration and Complexity', Institute for Mathematics and its Applications, University of Minnesota, August 2002. (International Conference): "Construction of points that are well distributed on spheres using ones and zeroes" Organisers: Erich Novak and Henryk Wozniakowski (Columbia).
- (55) Invited Speaker, Differential equations National conference in honor of Allan Krall, Professor Emeritus, Penn State University, Knoxville, TN, October 2002: Talk "Orthogonal Polynomials and Constrained Minimizers revisited", Organiser: Lance Littlejohn.
- (56) Department of Mathematics, California State University, U.S.A, February 2003 (invited talk): Talk "Counting linear independent Vectors and their Applications."
- (57) Invited Speaker, Special Session in Spherical designs and coding theory, National Meetings, Baltimore, January 2003: Talk "Finite Fields and constructions of Codes" Organiser: B. Bajnok.
- (58) Department of Mathematics, Georgia Tech, U.S.A, colloquium (invited talk), March 2003: Talk "Discrepancy using Potentials."
- (59) Invited Speaker, "International conference for Dynamic systems and differential equations", Atlanta, May 2003: Talk "Numerical solution of Fredholm integral equations on the line", Organiser: Angelo Mingarelli.

- (60) International conference, Advances in Constructive Approximation, Vanderbilt University, May 2003: Talk "Tractibility Theorems on Manifolds", organisers: M. Neamtu, Larry Schumaker.
- (61) Invited Participant, "Computational Analysis on the Sphere" (International Workshop), Vanderbilt, December 2003.
- (62) (1 hour) Invited talk, "Theory and Application of Orthogonal polynomials", Special Session, National AMS Conference, Phoenix, January 2004: Talk "Bounds on Discrete Polynomials and Discrete Extremal Problems", Organiser: Barry Simon (Caltech).
- (63) Department of Mathematics, Georgia Tech, U.S.A, colloquium (invited talk), March 2004: Talk "Bounds on Discrete Christoffel Functions."
- (64) Department of Mathematics, Purdue University, Fort Wayne, U.S.A, colloquium (invited talk), April 2004: Talk "Approximation on smooth manifolds and its applications to sphere packing."
- (65) Department of Mathematics, University of Michigan, Ann Arbor, U.S.A, Analysis seminar (invited talk), April 2004: Talk "A Random Walk through discrepancy, sphere packing and some of their fascinating applications."
- (66) Department of Mathematics, University of Michigan, Ann Arbor, U.S.A, Graduate seminar (invited talk), April 2004: Talk "A Warm up to discrepancy, sphere packing and some of their fascinating applications."
- (67) Department of Mathematics, George Washington University, U.S.A, colloquium and Analysis seminar (invited talk), April 2004: Talk "Potentials on Spheres."
- (68) Department of Mathematics, George Washington University, U.S.A, Analysis seminar (invited talk), April 2004: Talk "Discrete polynomial approximation."
- (69) Department of Mathematics, University of Maryland, College Park, U.S.A, Analysis Seminar (invited talk), Spring 2004: Talk "Riesz Energy on Spheres."
- (70) "Eleventh International Conference in Approximation Theory", Gatlinburg, TN, May 2004, Speaker: Talk "Extremal configurations on spheres."
- (71) Participant: Workshop on Random Matrix Methods and Applications, Providence, RI, August 2004. Organisers, MAA-Fest, Eldeman (MIT).
- (72) "Constructive Functions, International Conference, Georgia Tech, November 2004, Talk "Approximation methods and stability of singular equations on the line".

- (73) Department of Mathematical Sciences, Georgia Southern University, November 2004-Colloquium. Talk: "Stability of singular equations on the line: A tale of several countries."
- (74) Special Session, American Mathematical Society, National Meetings, January 2005, "Special functions and integrable systems", Talk: "Weighted polynomial approximation on discrete sets."
- (75) Special Session, American Mathematical Society, Bowling Green, Kentucky, March 2005, "Numerical Analysis, Approximation and Computational Complexity: Interdisciplinary Aspects" (Organisers S. B. Damelin and D. Benko). Talk: " Numerical solution of integral equations on domains."
- (76) "International Conference on Algorithms for Approximation 5", University of Leicester, England, 18 July-23 July 2005. Talk: "Discrepancy on smooth manifolds."
- (77) "International Conference on the Interactions between Wavelets and Splines", UGA, May 16-19, 2005, Special Session in Approximation Theory (Organiser, D. Lubinsky), Invited Speaker: Talk: "Extremal configurations on smooth manifolds."
- (78) Department of Mathematics, Georgia State University, Atlanta, U.S.A, "A random walk through sphere packing and energy", April 7th, 2005.
- (79) "IMA Midwest Numerical Analysis Conference", Iowa, May 2005. Talk: " Approximation methods and stability of singular integral equations for Freud exponential weights on the line."
- (80) Department of Mathematics, Yale University, Colloquium (invited talk), October 2005: Talk "A random walk through Numerical integration and Riesz Configurations on rectifiable sets."
- (81) Institute for Mathematics and Applications, October 2005: Talk "Applications of nonlinear approximation to imaging."
- (82) Institute for Mathematics and Applications, November 2005: Talk "Orthogonal polynomials, potential theory and weighted polynomial approximation."
- (83) Department of Mathematics, University of Minnesota, Applied mathematics (invited talk), November 2005: "Approximation and stability of integral equations."
- (84) Department of Mathematics, University of Minnesota, Colloquium (invited talk), November 2005: " Discretization versus reconstruction: A random walk through numerical integration and low discrepancy sequences on rectifiable sets."

- (85) Department of Electrical and Computer Engineering and IEEE CIS/IAS Colloquium, University of Missouri-Rolla, March 2006: "Some open problems in Diffusion, Vision and Power systems."
- (86) IMA, Postdoc seminar, April 2006: "Diffusion and Vision, some open problems and solutions."
- (87) Learning and Vision Workshop, IMA, May 2006: "Paley Wiener Theorems and Point Clouds in Scattering and Vision: Announcement of Results."
- (88) Large Data sets, GIS and Geometry of Data: Two coupled international research workshops, "Kernel methods in data analysis", University of Leicester, August, 2006.
- (89) Department of Biomedical Engineering, Georgia Tech, "Kernel methods in computer vision, integration, polynomial approximation and random matrices", October 2006.
- (90) Department of Mathematics, University of Minnesota, "Data analysis and kernels", October 2006.
- (91) 2006-2007 High Dimensional Inference and Random Matrices Workshop on Geometry, Random Matrices, and Statistical Inference January 16-19, 2007, "Kernels, Metrics and Energy."
- (92) Applications of the Fourier Transform in Imaging, MAA SE 2007, Georgia Southern University, March 15-17, 2007 (with Brandon Beevan, undergraduate poster).
- (93) Fourth International Conference on Multivariate Approximation and its Applications, Cancun, April 2007. "Applications of Energy, Discrepancy and Manifold Learning."
- (94) Invited participant, IMA workshop on Compressive Sampling, Organisers, E. Candese and R. Devore, 4-15 June 2007.
- (95) CMMSE, Computational Mathematical Methods in Science and Engineering, Illinois Institute of Technology, June 22-24, 2007 "On the equivalence of energy and discrepancy, parts 1-11" (jointly with Fred Hickernell).
- (96) CMMSE, Computational Mathematical Methods in Science and Engineering, Illinois Institute of Technology, June 22-24, 2007 "Hyperinterpolation on spheres" (with R. Randal, Graduate Student).
- (97) CMMSE, Computational Mathematical Methods in Science and Engineering, Illinois Institute of Technology, June 22-24, 2007 "X-band radar data for six points of a rotating octrahedron" (with T. Brooks, W. Tripplet, B. Beevan and M. Ferrara, Undergraduate Poster).

- (98) CMMSE, Computational Mathematical Methods in Science and Engineering, Illinois Institute of Technology, June 22-24, 2007 "Applications of the Fourier Transform in Imaging Highpass and Lowpass Filters" (with B. Beevan, Undergraduate Poster).
- (99) Department of Mathematics, Aiforce Institute of Technology, Colloquium, May 2007, "Manifold and radar learning".
- (100) SMART AFRL workshop, July 2007, "Spectral Diffusion as a means to extract features from nerve and radar images", (with G. Arnold (AFRL), M. Ferrara (AFRL), P. Bigeleisen (Pittsburg) and Y.Keller (Wietzman)).
- (101) Four lecture colloquia series, University of the Witwatersrand, Fall 2007, "Advances on Regularity and Dislocation properties of Energy Minimizing Configurations, Discrepancy, Manifold Learning and their Applications" parts 1-4."
- (102) Advances in Manifold Learning Theory, South African Mathematical Society, 50th Annual Congress, University of Cape Town, November 2007.
- (103) Compression of Hyperspectral Data, parts 1-2, MSIG, University of the Witwatersrand, January 2008. (With M. Sears).
- (104) Imaging techniques, Colloquium, Department of Physics, GSU, April 2008.
- (104) Interdisciplinary Mathematics, UAIM, University of the Witwatersrand, January 2008.

Joint Undergraduate Student Presentations

- (1) Applications of the Fourier Transform in Imaging, MAA SE 2007, Georgia Southern University, March 15-17, 2007 (with Brandon Beevan, undergraduate poster).
- (2) CMMSE, Computational Mathematical Methods in Science and Engineering, Illinois Institute of Technology, June 22-24, 2007 "X-band radar data for six points of a rotating octrahedron" (with T. Brooks, W. Tripplet, B. Beevan and M. Ferrara, Undergraduate Poster).
- (3) Mathematics Undergraduate seminar, Georgia Southern, April 2008 (with Andrew Haase). "Medical imaging."

Erdős Numbers

- Erdős number 3: Paul Erdős-Vilomos Totik-Doron Lubinsky-Steven Damelin (Analysis).

- Erdős number 3: Paul Erdős-Jozsef Denes-Gary Mullen- Steven Damelin (Number Theory).

Teaching

Undergraduate Research

- William Triplett, "Linear independent vectors", NSF, Spring 2006.
- Brandon Bevan, "Vision in imaging", NSF, Summer 2007.
- William Triplett, "Image Segmentation of the Brachial Plexus", NSF, Summer 2007.
- Tommy Rogers, "Image Registration of the Brachial Plexus", NSF, Summer, 2007.
- Andy Haas, Spring 2008, NSF, "Imaging and Segmentation."
- Michael Mitchley and Louis du Pressis, "Compression of Hyperspectral Mining Image Data", WITS (joint with M. Sears), 2008-present.

Masters

- Jeff Taylor, "Combinatorial designs", NSF, 2004-2006.
- Rochelle Randall, "Approximation and Numerical Integration on Compact subsets of Euclidean Space", NSF, 2006-2008.
- Michael Mitchley and Louis du Pressis, "Compression of Hyperspectral Mining Image Data", WITS (joint with M. Sears), 2008-present.
- Andy Haas, Summer 2008-present, NSF, "Imaging and Segmentation."
- Quin Cheng, Summer 2008-present, NSF, "Prim methods."
- Ryan Roman, Summer 2008-present, NSF, "Medical imaging."

Phd

- Sun Jin Hwang, "Prim Difussions and Applications" (with Al Hero), NSF, 2006-present.

- Rochelle Randall, "Hyperinterpolation on spheres", (with J. Leversley), EPSRC, 2007–present.
- John Lou (with Fedele Fransesco and Anthony Yezzi, Gatech Sav, Gatech), "Optical Tomography", Fall 2008-present.

Phd committees

- Xiaoyan Zeng, "Energy and Discrepancy", 2007 (IIT) [PhD committee].
- Kwong Liu, "Digital nets", 2007 (IIT) [PhD committee].

Work with Postdocs at other Institutions

- J. Ha Ann, 2006-2007 (Siemans, Princeton).
- H. Lao, 2006-2007 (IMA, University of Minnesota).
- R. Raich, 2007 (University of Michigan).
- R. Xu, 2006-present (University of Missouri Rolla).
- M. Kliger, 2007-present (University of Michigan).

Cyber work: Summary of Work with Students/Collaborators

- <http://math.georgiasouthern.edu/damelin/greg/cyber.html>.

Dept Texts/New Courses developed and/or taught

- (a) (with W. Miller), Applied Mathematics Notes: Imaging and Wavelets.
- (b) Introduction to Approximation Theory (For Teachers) (Math 407) (WITS).
- (c) Selected Topics in Mathematics-Methods of Mathematical Physics (Georgia Southern) (Math 5090/5090G).
- (d) Real Analysis (Georgia Southern) (Math 7331). [In collaboration with L. Fausett].
- (e) Analysis 1-II (Georgia Southern) (Math 5331G, Math 5332G)[In collaboration with L. Fausett and S. Ngai (Revised)]

- (f) Contributions to: Approximation Theory, Differential Geometry, Functional Analysis, Advanced Linear Algebra (In collaboration with Yan Wu and colleagues, Georgia Southern, Spring 2008).

Summary of all courses taught

- Boston City Campus-UNISA(1991-1994):
 - (1) Calculus 1 (Math 101);
 - (2) Geometry 1 (Math 122);
 - (3) Linear Algebra 1 (Math 104).
- University of the Witwatersrand (January 1995-August 1996; July 1997-August 1999):
 - (1) Calculus 1 (Math 100);
 - (2) Calculus 2 (Math 200);
 - (3) Calculus 3 (Math 300);
 - (4) Differential equations 2 (Math 201);
 - (5) Linear algebra 1 (Math 102);
 - (6) Advanced Math Methods (Math 403);
 - (7) Introduction to Approximation Theory (Math 407);
 - (8) Tutored: Differential equations 1, 3 (Math 101, 301); Calculus 2-3 (Engineering) (Math 202,302).
- University of South Florida (Fall 1996-Spring 1997):
 - (1) Calculus III (Math 300).
- The Pennsylvania State University (Fall 1999-Spring 2000):
 - (1) Calculus and Differential Geometry (Math 140).
- Georgia Southern University (Fall 2000-):
 - (1) Survey of Calculus (Math 1232);
 - (2) Calculus 3 (Math 2243);
 - (3) Calculus 1 Honours (Math 1441H);
 - (4) Calculus 2 (Math 2242);
 - (5) College Algebra (Math 1111);
 - (6) Advanced Differential equations (Math 7236);
 - (7) Selected Topics in Mathematics (Math 5090/5090G);

- (8) Analysis 1 (Math 3331);
 - (9) Analysis 2 (Math 5332/5332G);
 - (10) Complex Analysis (Math 5434);
 - (11) Calculus 3 Honours (Math 2242H);
 - (12) Calculus 2 Honours (Math 2243H);
 - (13) Calculus 1 (Math 1441H);
 - (14) Applied Mathematics (Math 7234);
 - (15) Mathematics Structures (Math 2234);
 - (16) Senior Research Project and Thesis (Math 87018,17203).
- University of the Witwatersrand (Fall 2007)
 - Math 1 Engineering (Math 1011);
 - Math 2 Engineering (Math 2011).

Teaching outreach in Bulloch County Schools

From 2008-present, I have been involved in tutoring high school and minority students mathematics in Bulloch County Schools.

Service

Professional Service

Conference Organisation

- Special Session, American Mathematical Society, South Eastern Meeting, Atlanta, GA, March, 12-14, 2002. (With M. Benzi(Emory) and J. Nagy (Emory)). Title: "Numerical Linear Algebra and its Applications."
- Special Session, American Mathematical Society, National Meetings, Atlanta, GA, January, 5-7, 2005. (With J. Baik(University of Michigan) and P. Miller (University of Michigan)). Title: "Orthogonal Polynomials-Random Matrices-Integrable Systems: Interdisciplinary Aspects."

- Special Session, American Mathematical Society, Bowling Green, Kentucky, March, 18-19, 2005. (With D. Benko(Western Kentucky University)). Title: "Numerical Analysis, Approximation and Computational Complexity: Interdisciplinary Aspects".
- Special Session, "International Conference on Algorithms for Approximation 5", University of Leicester, England, July 18-25, 2005: (With J. Leverley). Title: "Aspects of Approximation on Domains and Manifolds"
- International committee: "Large Data sets, GIS and Geometry of Data: Two coupled international research workshops", University of Leicester, August, 2006.
- Special Session, "'CMMSE (Computational Methods in Science and Engineering)'" , ITT, Chicago, June 2007 (with Fred Hickernell). Title: " On the curse of dimension in discrepancy and approximation: Methods and Advances."
- MSIG Workshop for Undergraduate and Graduate Students, University of the Witwatersrand, January 2008. (With M. Sears)
- Georgia Southern Southeastern AMS Conference, Oct. 9-10, 2010–(in prep).
- IEEE IGARSS09 (IEEE Geology and Remote Sensing 09) , Cape Town, Spring 2009–(in prep).

Grant Reviews

- NSF panel reviewer: January 2005, East Asia and Pacific Summer Institute student transfer program.
- NSF panel reviewer, March 2004, National Science Foundation's Computer Science, Engineering, and Mathematics Scholarships (CSEMS) program.
- NSF panel reviewer: July 2003: National Science Foundation: Course, Curriculum Laboratory Improvement (CCLI) program, Educational materials development (EMD) and National Dissemination (ND) tracks.
- South African National Research Foundation: National Research Ratings, Mail Review: June 2005
- NSF panel reviewer, January 2006, National Science Foundation's Computer Science, Engineering, and Mathematics Scholarships (CSEMS) program, invited.

Editorial Work

Books Reviewed

- (1) (2001): Quantitative Approximations by George Anastassiou, Chapman and Hall.
- (2) (2003): Contemporary College Algebra, A graphical approach, Tom Hungerford.

Research papers reviewed

- (1) (1999-Present) Reviewer American Mathematical Society

- Constructive Approximation;
- SIAM J. Math Analysis;
- SIAM J. Numerical;
- Analysis;
- Journal of Approximation Theory;
- BIT-Numerical Mathematics;
- East Journal of Approximation;
- Journal of Computational Applied Mathematics;
- Discrete Mathematics;
- Approximation Theory and its Applications;
- Computers and mathematics with applications;
- Annales Societatis Mathematicae;
- Duke Mathematical Journal;
- Revue D' Analyse Numerique et de theorie;
- Vanderbilt Press;
- Commun. Math. Physics;
- Notices of the American Mathematical Society;
- Bulletin of the American Mathematical Society.

- (2) (1998-Present) Referee

- Constructive Approximation;
- Journal of Approximation Theory;

- BIT-Numerical Mathematics;
- East Journal of Approximation;
- Journal of Computational Applied Mathematics;
- Electronic Journal of Numerical Analysis;
- Acta Math Hungarica;
- Journal of Complexity;
- Journal of Numerical Algorithms;
- Monatshefte Mathematic;
- Houston Journal of Mathematics;
- Analysis and Applications;
- Linear algebra and Applications;
- Journal of Differential Equations;
- SIAM Journal of Numerical Analysis;
- Transactions of AMS;
- Proceedings of AMS;
- Journal of Number Theory;
- Inverse Problems;
- Journal of London Mathematical Society.

Professional Organizations

- SIAM, AMS, IEEE.

Department/University Service

Georgia Southern University: Fall 2000-

University

- Fall 2004-Fall 2007: Member of the University Senate.
- Spring 2005-Spring 2006: Member of Provost Task Force- Sabbatical committee (with Associate Provost: Amy Heaston and Dean, Fred Whitt). Senate approval action: <http://academics.georgiasouthern.edu/cet/grants.htm>.
- Summer 2008-Present: Co-advisor to GSA, Georgia Southern Student Multicultural Center (with Kimberley Rowan).

College of Science and Technology

- Spring 2007-present: Founding and Present Director, Unit for Advances in Mathematics and its Applications (UAIM),
<http://math.georgiasouthern.edu/~damelin/applcenter.html>.

Department Service

Since Fall 2000-present, I have made ongoing, documented and significant contributions to: Department of Mathematical Sciences, Colloquium and Seminars, Electronic Journal access via Mathscinet which with others, I applied for and obtained, Department of Mathematical Sciences Governing Handbook, Department of Mathematical Sciences Graduate Committee via Courses and Graduate Students, Department of Mathematical Sciences Hiring and Department of Mathematical Sciences Undergraduate Research Students.

Committees Chaired

- Fall 2003-Spring 2003: Chair of Undergraduate Placement.
- Fall 2001-Spring 2003: Chair of Department Seminars and Colloquia.
- Spring 2003: Chair of Department Math Award Committee.

Other Committees

- Spring 2008: Dept of Mathematical Sciences Hiring Task force.
- Fall 2005, Spring 2005: Dept of Mathematical Sciences Tenure and Promotion Committee.
- Fall 2001-Spring 2002, Fall 2003-Spring 2004: Department of Mathematical Sciences Graduate Committee.
- Fall 2000-Present: University Graduate Faculty.
- Fall 2000: Coordinator: Department of Mathematical Sciences Analysis Seminar.
- Fall 2000-Spring 2001: Georgia Southern Karl Peace Endowed Chair Search committee.
- Fall 2001-Spring 2002: Department of Mathematical Sciences Chair Search.
- Fall 2000-Spring 2001: Department of Mathematical Sciences Undergraduate Committee.

- Fall 2003-Spring 2004: Department of Mathematical Sciences Mentor.
- Fall 2003: Department of Mathematical Sciences Graduate Task force.