

CURRICULUM VITAE

THOMAS WANNER

Education:

Dr.rer.nat. (Ph.D.) 1993 Universität Augsburg (Germany), Mathematics
Diplom (M.S.) 1991 Universität Augsburg, Mathematics, Computer Science
Vordiplom (B.S.) 1989 Universität Augsburg, Mathematics, Computer Science

Experience in Higher Education:

2004- George Mason University, Associate Professor
2002-2004 George Mason University, Assistant Professor
2002-2004 University of Maryland, Baltimore County, Adjunct Assistant Professor
1998-2002 University of Maryland, Baltimore County, Assistant Professor
1997-1998 Universität Augsburg, Assistant Professor
1996-1997 Georgia Institute of Technology, Visiting Assistant Professor
1995-1996 Georgia Institute of Technology, Visiting Research Scholar
1993-1995 Universität Augsburg, Postdoctoral Fellow
1989-1993 Universität Augsburg, Teaching Assistant

Research Support and Fellowships:

2006-2011 National Science Foundation Grant (DMS-0639300, \$1,057,257),
*CSUMS: Development of an ongoing program of undergraduate computational
mathematics research* (PI: Timothy Sauer, co-PIs: Daniel Anderson,
Evelyn Sander, John Wallin, Thomas Wanner)
2005-2009 U.S. Department of Energy Grant (DOE-97889, \$297,833),
Multiscale analysis of nonlinear systems using computational homology
2004-2009 National Science Foundation Grant (DMS-0406231, \$100,002),
Complex transient patterns in phase-field models
2004 Provost's Tenure-Track Assistant Professor Leave, Spring Semester, GMU
2003 Provost's Award for Summer Research Funding, GMU
2001 Summer Support, DOE Grant (Curtis Menyuk, UMBC)
2000-2001 DRIF-RAS Grant, UMBC
1999 Summer Faculty Fellowship, UMBC
1996-1997 Research Fellowship Wa 960/3-2, Deutsche Forschungsgemeinschaft
1995-1996 Research Fellowship Wa 960/3-1, Deutsche Forschungsgemeinschaft
1991-1993 Ph.D. Fellowship, Deutsche Forschungsgemeinschaft
1989-1991 Fellowship of the Studienstiftung des deutschen Volkes

Publications:**Articles in refereed journals:**

1. Rigorous numerics for the Cahn-Hilliard equation on the unit square (with Stanislaus Maier-Paape, Ulrich Miller, Konstantin Mischaikow). *Revista Matemática Complutense* 21(2), pp. 351-426, 2008.
2. Second phase spinodal decomposition for the Cahn-Hilliard-Cook equation (with Dirk Blömker, Stanislaus Maier-Paape). *Transactions of the American Mathematical Society* 360(1), pp. 449-489, 2008.
3. Probabilistic and numerical validation of homology computations for nodal domains (with Sarah Day, William D. Kalies, Konstantin Mischaikow). *Electronic Research Announcements of the American Mathematical Society* 13, pp. 60-73, 2007.
4. Structure of the attractor of the Cahn-Hilliard equation on a square (with Stanislaus Maier-Paape, Konstantin Mischaikow). *International Journal of Bifurcation and Chaos* 17(4), pp. 1221-1263, 2007.
5. A Hermite spectral method for the computation of homoclinic orbits and associated functionals (with Valeriy Korostyshevskiy). *Journal of Computational and Applied Mathematics* 206(2), pp. 986-1006, 2007.
6. Probabilistic validation of homology computations for nodal domains (with Konstantin Mischaikow). *Annals of Applied Probability*, 17(3), pp. 980-1018, 2007.
7. Complex transient patterns on the disk (with Jonathan P. Desi, Evelyn Sander). *Discrete and Continuous Dynamical Systems, Series A*, 15(4), pp. 1049-1078, 2006.
8. Topological simplification of nonautonomous difference equations (with Bernd Aulbach). *Journal of Difference Equations and Applications*, 12(3-4), pp. 283-296, 2006.
9. Evolution of pattern complexity in the Cahn-Hilliard theory of phase separation (with Marcio Gameiro, Konstantin Mischaikow). *Acta Materialia*, 53(3), pp. 693-704, 2005.
10. Maximum norms of random sums and transient pattern formation. *Transactions of the American Mathematical Society*, 356(6), pp. 2251-2279, 2004.
11. Polarization decorrelation in optical fibers with randomly varying elliptical birefringence (with Brian S. Marks, Curtis R. Menyuk, John Zweck). *Optics Letters*, 28(19), pp. 1799-1801, 2003.
12. Pattern formation in a nonlinear model for animal coats (with Evelyn Sander). *Journal of Differential Equations*, 191(1), pp. 143-174, 2003.
13. Invariant foliations and decoupling of non-autonomous difference equations (with Bernd Aulbach). *Journal of Difference Equations and Applications*, 9(5), pp. 459-472, 2003.
14. Existence and uniqueness of risk-sensitive estimates (with James Lo). *IEEE Transactions on Automatic Control*, 47(11), pp. 1945-1948, 2002.
15. Enstrophy dynamics of stochastically forced large-scale geophysical flows (with Dirk Blömker, Jinqiao Duan). *Journal of Mathematical Physics*, 43(5), pp. 2616-2626, 2002.
16. Roughness in surface growth equations (with Dirk Blömker, Stanislaus Maier-Paape). *Interfaces and Free Boundaries*, 3(4), pp. 465-484, 2001.

17. Spinodal decomposition for the Cahn-Hilliard-Cook equation (with Dirk Blömker, Stanislaus Maier-Paape). *Communications in Mathematical Physics*, 223(3), pp. 553–582, 2001.
18. Surface roughness in molecular beam epitaxy (with Dirk Blömker, Stanislaus Maier-Paape). *Stochastics and Dynamics*, 1(2), pp. 239–260, 2001.
19. Slow motion in higher-order systems and Γ -convergence in one space dimension (with William D. Kalies, Robert C.A.M. VanderVorst). *Nonlinear Analysis: Theory, Methods, and Applications*, 44(1), pp. 33–57, 2001.
20. Unexpectedly linear behavior for the Cahn-Hilliard equation (with Evelyn Sander). *SIAM Journal on Applied Mathematics*, 60(6), pp. 2182–2202, 2000.
21. The Hartman-Grobman theorem for Carathéodory type differential equations in Banach spaces (with Bernd Aulbach). *Nonlinear Analysis: Theory, Methods, and Applications*, 40(1-8), pp. 91–104, 2000.
22. Spinodal decomposition for multicomponent Cahn-Hilliard systems (with Stanislaus Maier-Paape, Barbara Stoth). *Journal of Statistical Physics*, 98(3-4), pp. 871–896, 2000.
23. Spinodal decomposition for the Cahn-Hilliard equation in higher dimensions: Nonlinear dynamics (with Stanislaus Maier-Paape). *Archive for Rational Mechanics and Analysis*, 151(3), pp. 187–219, 2000.
24. Monte Carlo simulations for spinodal decomposition (with Evelyn Sander). *Journal of Statistical Physics* 95(5-6), pp. 925–948, 1999.
25. Dissipative quasigeostrophic dynamics under random forcing (with James R. Brannan and Jinqiao Duan). *Journal of Mathematical Analysis and Applications* 228(1), pp. 221–233, 1998.
26. Spinodal decomposition for the Cahn-Hilliard equation in higher dimensions. Part I: Probability and wavelength estimate (with Stanislaus Maier-Paape). *Communications in Mathematical Physics* 195(2), pp. 435–464, 1998.
27. Solutions of nonlinear planar elliptic problems with triangle symmetry (with Stanislaus Maier-Paape). *Journal of Differential Equations* 136(1), pp. 1–34, 1997.
28. Perturbation of doubly periodic solution branches with applications to the Cahn-Hilliard equation (with Paul C. Fife, Hansjörg Kielhöfer, Stanislaus Maier-Paape). *Physica D* 100(3-4), pp. 257–278, 1997.
29. Linearization of random dynamical systems. *Dynamics Reported* 4, pp. 203–269, 1995.
30. Supersolvable and modularly complemented matroid extensions (with Günter M. Ziegler). *European Journal of Combinatorics* 12(4), pp. 341–360, 1991.
31. On the chromaticity of certain subgraphs of a q-tree. *Journal of Graph Theory* 13(5), pp. 597–605, 1989.

Book chapters:

32. Phase separation in stochastic Cahn-Hilliard models (with Dirk Blömker, Stanislaus Maier-Paape). *Mathematical Methods and Models in Phase Transitions*, edited by A. Miranville, pp. 1–41. Nova Science Publishers, 2005.
33. Invariant foliations for Carathéodory type differential equations in Banach spaces (with Bernd Aulbach). *Advances in Stability Theory at the End of the 20th Century*, edited by A.A. Mar-

tynyuk, *Stability and Control: Theory, Methods and Applications*, Vol. 13, pp. 1–14. Taylor and Francis, London, 2003.

34. Integral manifolds for Carathéodory type differential equations in Banach spaces (with Bernd Aulbach). *Six Lectures on Dynamical Systems*, edited by B. Aulbach and F. Colonius, pp. 45–119. World Scientific, Singapore, 1996.

Articles in proceedings:

35. Polarization mode dispersion, decorrelation, and diffusion in optical fibers with randomly varying elliptical birefringence (with Brian S. Marks, Curtis R. Menyuk, John Zweck). *Optical Fiber Communication Conference 2003*, Technical Digest, pp. 370–372, 2003.
36. Spinodal decomposition: A survey of recent results (with Stanislaus Maier-Paape and Evelyn Sander). In: B. Fiedler, K. Gröger, and J. Sprekels (editors), *Equadiff 99, Proceedings of the International Conference on Differential Equations*, Volume 2, pp. 1288–1299, World Scientific, 2000.
37. Spinodal decomposition for the stochastic Cahn-Hilliard equation (with Dirk Blömker, Stanislaus Maier-Paape). In: B. Fiedler, K. Gröger, and J. Sprekels (editors), *Equadiff 99, Proceedings of the International Conference on Differential Equations*, Volume 2, pp. 1265–1267, World Scientific, 2000.
38. Spinodal decomposition in the linear Cahn-Hilliard model (with Stanislaus Maier-Paape). *Zeitschrift für Angewandte Mathematik und Mechanik* 78(S3), pp. S1003–S1004, 1998.
39. Qualitative behavior of random differential equations. In: D. Bainov and A. Dishliev (editors), *Proceedings of the Fifth International Colloquium on Differential Equations*, Volume 2, pp. 242–257, SCT Publishing, 1995.

Book reviews:

40. Review of *Computational Homology* by T. Kaczynski, K. Mischaikow, and M. Mrozek. *SIAM Review*, 48(1), pp. 202–204, 2006.

Theses:

41. Zur Linearisierung zufälliger dynamischer Systeme. *Ph.D. thesis*, Universität Augsburg, Germany, 172 pages, 1993.
42. Invariante Faserbündel und topologische Äquivalenz bei dynamischen Prozessen. *M.S. thesis*, Universität Augsburg, Germany, 135 pages, 1991.

Manuscripts submitted for publication:

43. Topology-guided sampling of nonhomogeneous random fields (with Konstantin Mischaikow).
44. Verified homology computations for nodal domains (with Sarah Day, William D. Kalies).

Manuscripts in preparation:

45. Homological characterization of microstructure response fields in polycrystals (with Edwin R. Fuller and David M. Saylor).
46. A high order test discretization for unsymmetric meshless methods (with Andrew Corrigan, John Wallin).
47. The dynamics of nucleation in stochastic Cahn-Morral systems (with Jonathan P. Desi, Hanein Edrees, Joseph J. Price, and Evelyn Sander).
48. A semi-implicit spectral method for stochastic nonlocal phase-field models (with Tina Hartley).

Graduate Students, Ph.D.:

- current Scott Cochran, in progress, GMU.
- current Andrew Corrigan, in progress, GMU.
- 2008 Tina R. Hartley: *An Analysis of Phase Separation Processes for Stochastic and Nonlocal Extensions of the Classical Phase-Field Model*, Ph.D. in Computational Mathematics, GMU.
- 2005 Valeriy R. Korostyshevskiy: *A Hermite Spectral Approach to Homoclinic Solutions of Ordinary Differential Equations*, Ph.D. in Applied Mathematics, UMBC.

Graduate Students, M.S.:

- 2008 Elan Rodan: *Successive Continuation for Locating Connecting Orbits*, M.S. in Mathematics, GMU.
- 2004 Jonathan P. Desi: *A Study of the Cahn-Hilliard Equation on the Unit Disk*, M.S. in Applied Mathematics, UMBC.
- 2002 Jennifer E. Deering: *Computation of the Bifurcation Structure of the Cahn-Hilliard Equation*, M.S. in Applied Mathematics, UMBC.

Undergraduate Students:

- 2008 Hanein Edrees: *The Dynamics of Nucleation in Stochastic Cahn-Morral Systems*, CSUMS Undergraduate Research Project, GMU.
- 2008 Jonathan Price: *The Dynamics of Nucleation in Stochastic Cahn-Morral Systems*, CSUMS Undergraduate Research Project, GMU.
- 2005 Ravi Kappiyoor: *Microstructure Response Isosurfaces for Low Thermal Expansion Polycrystals*, Summer Research Project, GMU & NIST.
- 2003 Eli Leyman: *Solidification Phenomena in Pure Materials*, Summer Research Project, GMU.
- 2003 Jonathan P. Desi: *A Numerical Study of Nucleation in Stochastic Cahn-Morral Systems*, Undergraduate Senior Thesis, UMBC.

Courses Taught:

George Mason University:

Fall 2008	Math 685	Numerical Analysis
Spring 2008	Math 214	Elementary Differential Equations
	Math 678	Partial Differential Equations
Fall 2007	Math 677	Ordinary Differential Equations
Summer 2007	Math 493	Topics in Applicable Mathematics
Spring 2007	Math 625	Numerical Linear Algebra
	Math 689	Nonlinear Functional Analysis
Spring 2006	Math 114	Analytic Geometry and Calculus II
	Math 686	Numerical Solution of Differential Equations
Fall 2005	Math 685	Numerical Analysis
Spring 2005	Math 108	Introductory Calculus with Business Applications
	Math 214	Elementary Differential Equations
Fall 2004	Math 113	Analytic Geometry and Calculus I
	Math 689	Computational Algebraic Topology
Fall 2003	Math 111	Linear Mathematical Modeling
	Math 675	Linear Analysis I
Spring 2003	Math 414	Modern Applied Mathematics II
	Math 673	Dynamical Systems
Fall 2002	Math 213	Analytic Geometry and Calculus III
	Math 446	Numerical Analysis I

University of Maryland, Baltimore County:

Spring 2002	Math 302	Introduction to Mathematical Analysis II
	Math 601	Measure Theory
Fall 2001	Math 301	Introduction to Mathematical Analysis I (two sections)
Spring 2001	Math 302	Introduction to Mathematical Analysis II
	Math 612	Ordinary Differential Equations and Dynamical Systems
Fall 2000	Math 221	Introduction to Linear Algebra
	Math 301	Introduction to Mathematical Analysis I
Spring 2000	Math 225	Introduction to Differential Equations
	Math 710	Nonlinear Functional Analysis
Fall 1999	Math 251	Multivariable Calculus
	Math 251	Multivariable Calculus (Honors section)
	Math 614	Partial Differential Equations
Spring 1999	Math 152	Calculus and Analytic Geometry II
	Math 611	Applied Analysis
Fall 1998	Math 151	Calculus and Analytic Geometry I

Professional Activities:

- Member of SIAM, AMS, DMV (German Mathematical Society).
- Editorial Board Member of the journal *Discrete and Continuous Dynamical Systems, Series S*.
- Referee for *Communications on Pure and Applied Mathematics, Discrete and Continuous Dynamical Systems, European Journal of Applied Mathematics, International Journal of Mathematics and Mathematical Sciences, Journal of Computational and Applied Mathematics, Journal of Differential Equations, Journal of Dynamics and Differential Equations, Journal of Graph Theory, Journal of Mathematical Analysis and Applications, Journal of Physics A, Journal of Sound and Vibration, Nonlinear Analysis, Physica D, Proceedings of the American Mathematical Society, Random & Computational Dynamics, SIAM Journal on Applied Dynamical Systems, SIAM Journal on Applied Mathematics, SIAM Journal on Mathematical Analysis, Stochastics and Dynamics, Stochastics and Stochastics Reports, Zeitschrift für Angewandte Mathematik und Mechanik*.
- Panelist for the *National Science Foundation*.
- Grant reviewer for *National Science Foundation, Department of Energy, Chilean Science Foundation, Dutch Science Foundation, Israel Science Foundation*.
- Co-organizer of a minisymposium on *Computational Topology and Dynamics*, ICIAM 07: 6th International Congress on Industrial and Applied Mathematics, Zürich, Switzerland (July 2007).
- Co-organizer of a minisymposium on *Stochastic Partial Differential Equations and Pattern Formation*, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah (May 2007).
- Co-organizer of a special session on *Formation and Dynamics of Patterns in Evolution Equations*, AIMS Conference on Dynamical Systems, Differential Equations and Applications, Poitiers, France (June 2006).
- Co-organizer of a workshop on *Computational Homology and Materials Science*, Georgia Institute of Technology, Atlanta, Georgia (February 2006).
- Co-organizer of a minisymposium on *Topological Analysis of Patterns*, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah (May 2005).
- Organizer of a minisymposium on *Stochastic Differential Equations: Dynamics and Applications*, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah (May 2001).
- Co-organizer of a minisymposium on *Pattern formation in the Cahn-Hilliard model*, SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah (May 1999).

- Invited lectures and conference presentations:

1. “Verified homology computations for nodal domains”. Computational Topology and Dynamics Workshop, Bozeman, Montana (August 12, 2008).
2. “Topology-guided sampling of complicated random patterns”. Foundations of Computational Mathematics, Hong Kong, China (June 16, 2008).
3. “Topology-guided sampling of complicated random patterns”. Rocky Mountain Conference on Dynamical Systems, Park City, Utah (May 16, 2008).
4. “Topology-guided sampling of complicated random patterns”. Oberseminar, Universität Augsburg, Germany (April 14, 2008).
5. “Counting holes in microstructures: Topology and materials”. Osher Lifelong Learning Institute, Fairfax, Virginia (April 1, 2008).
6. “Homological analysis of complicated random patterns”. Applied Dynamics Seminar, University of Maryland, College Park, Maryland (February 14, 2008).
7. “Topological quantification of complex microstructures”. US Food and Drug Administration, Silver Spring, Maryland (January 31, 2008).
8. “Homological analysis of complicated random patterns”. Mathematics Colloquium, Virginia Tech, Blacksburg, Virginia (November 30, 2007).
9. “Homological analysis of complicated random patterns”. CSUMS Lecture, College of William and Mary, Williamsburg, Virginia (November 12, 2007).
10. “Counting holes in microstructures: Topology and materials”. Science Showcase for High End High School Students, Fairfax, Virginia (October 19, 2007).
11. “Homological analysis of complicated random patterns”. GMU Applied and Computational Mathematics Seminar, Fairfax, Virginia (October 12, 2007).
12. “Uncertainty quantification for homology computations”. ICIAM 07: 6th International Congress on Industrial and Applied Mathematics, Zürich, Switzerland (July 20, 2007).
13. “Der Cahn-Hilliard Attraktor in zwei Raumdimensionen”. Oberseminar, Universität Augsburg, Germany (July 12, 2007).
14. “Determining the topology of complex stochastic patterns from finite discretizations”. SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah (May 30, 2007).
15. “Homological characterization of patterns”. Computational Homology and Fluid Dynamics Workshop, Atlanta, Georgia (March 1, 2007).
16. “Structure of the attractor of the Cahn-Hilliard equation on a square”. Seminar, Kyoto University, Kyoto, Japan (February 12, 2007).
17. “Homological analysis of complex transient patterns via discretizations”. Workshop on Topological and Computational Approaches to Dynamical Systems and Applications, Kyoto, Japan (February 9, 2007).
18. “Complex transient patterns and their topology”. Winter Meeting of the Canadian Mathematical Society, Toronto, Canada (December 11, 2006).
19. “Probabilistic and numerical validation of homology computations for nodal domains”. Dynamics and Control Seminar, Rutgers University, Piscataway, New Jersey (Octo-

- ber 24, 2006).
20. “Probabilistic and numerical validation of homology computations for nodal domains”. Workshop on Application of Topology in Science and Engineering, MSRI, Berkeley, California (September 18, 2006).
 21. “Zur Homologie von Knotengebieten zufälliger Fourierreihen”. Universität Augsburg, Germany (June 19, 2006).
 22. “On the accuracy of homology computations for nodal domains”. DyToComp 2006: Dynamics, Topology, and Computations, Bedlewo, Poland (June 6, 2006).
 23. “Topological quantification of complex microstructures”. Day of Computational Mathematics, Nowy Sacz, Poland (June 2, 2006).
 24. “Computational homology and the evolution of complex patterns”. Graduate Seminar, George Mason University, Fairfax, Virginia (April 26, 2006).
 25. “Complex transient patterns and their homology”. Duke University, Durham, North Carolina (April 3, 2006).
 26. “Computational homology and the evolution of complex patterns”. College of William and Mary, Williamsburg, Virginia (March 24, 2006).
 27. “Computational homology and the evolution of complex patterns”. New Jersey Institute of Technology, Newark, New Jersey (February 24, 2006).
 28. “Homological characterization of patterns in phase separation”. Workshop on Computational Homology and Materials Science, Atlanta, Georgia (February 4, 2006).
 29. “Computational homology tutorial: Accuracy of homology computations”. Workshop on Computational Homology and Materials Science, Atlanta, Georgia (February 2, 2006).
 30. “On the accuracy of homology computations for nodal domains”. Georgia Institute of Technology, Atlanta, Georgia (December 1, 2005).
 31. “Computational approaches to phase separation dynamics”. Third Pacific Rim Conference on Mathematics, Fudan University, Shanghai, China (August 18, 2005).
 32. “Evolution of complex transient patterns”. Mini-Symposium on Nonlinear Analysis and Applications, Augsburg, Germany (June 24, 2005).
 33. “The effects of noise on transient pattern formation”. SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah (May 26, 2005).
 34. “Residual stress networks in polycrystalline materials: Their origin and character”. SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah (May 23, 2005).
 35. “Long-term dynamics of the Cahn-Hilliard equation”. University of Maryland, Baltimore County, Maryland (May 2, 2005).
 36. “Algebraic topology and the evolution of complex patterns”. University of Maryland, Baltimore County, Maryland (April 15, 2005).
 37. Lecture series at the summer school on “Conley-Index and Computational Homology”. Pappenheim, Germany (September 19–24, 2004).
 38. “Stochastic Cahn-Hilliard dynamics”. Fifth International Conference on Dynamical Systems and Differential Equations, Pomona, California (June 16, 2004).
 39. “A probabilistic approach to transient pattern formation”. SIAM Conference on Math-

- emational Aspects of Materials Science, Los Angeles, California (May 26, 2004).
40. "Evolution of pattern complexity in Cahn-Hilliard models". SIAM Conference on Mathematical Aspects of Materials Science, Los Angeles, California (May 25, 2004).
 41. "Higher-dimensional Cahn-Hilliard-Cook dynamics". Georgia Institute of Technology, Atlanta, Georgia (April 19, 2004).
 42. "Cahn-Hilliard dynamics in higher dimensions". Hokkaido University, Sapporo, Japan (March 18, 2004).
 43. "Stochastic Cahn-Hilliard dynamics". US-Japan Workshop on Dynamics and Computation, Shonan, Japan (March 9, 2004).
 44. "Stochastic Cahn-Hilliard dynamics". University of Maryland, College Park, Maryland (February 26, 2004).
 45. "Pattern formation in Cahn-Hilliard-type models". NIST, Gaithersburg, Maryland (February 17, 2004).
 46. "Random sums and transient pattern formation". Michigan State University, East Lansing, Michigan (January 13, 2004).
 47. "Pattern formation in Cahn-Hilliard-type models". Laboratory for Computer Design of Materials, George Mason University, Fairfax, Virginia (October 6, 2003).
 48. "Transient pattern formation in the Cahn-Hilliard-Cook model". NSF-CBMS Conference on Stochastic Partial Differential Equations and their Applications, Chicago, Illinois (May 22, 2003).
 49. "Random sums and transient pattern formation". Georgia Institute of Technology, Atlanta, Georgia (March 27, 2003).
 50. "Polarization mode dispersion, decorrelation, and diffusion in optical fibers with randomly varying elliptical birefringence". Optical Fiber Communication Conference 2003, Atlanta, Georgia (March 26, 2003).
 51. "Random sums and transient pattern formation". Universität Augsburg, Germany (June 25, 2002).
 52. "Random sums and transient pattern formation". RWTH Aachen, Germany (June 18, 2002).
 53. "Stochastic phenomena in pattern formation mechanisms". George Mason University, Fairfax, Virginia (March 19, 2002).
 54. "Transient pattern formation in parabolic problems". Georgetown University, Washington, DC (October 12, 2001).
 55. "Pattern formation in metal alloys". Physics Department, University of Maryland, Baltimore County, Baltimore, Maryland (April 4, 2001).
 56. "Transient pattern formation in metal alloys". Ohio State University, Columbus, Ohio (November 30, 2000).
 57. "Transient pattern formation in the Cahn-Hilliard model". University of Maryland, College Park, Maryland (May 15, 2000).
 58. "Spinodal decomposition for the Cahn-Hilliard model". EquaDiff 99, Berlin, Germany (August 2, 1999).
 59. "Introduction to random dynamical systems". George Mason University, Fairfax, Vir-

- ginia (November 20, 1998).
60. "Pattern formation in metal alloys". SUNY at Buffalo, Buffalo, New York (November 12, 1998).
 61. "Spinodal decomposition for multi-component Cahn-Hilliard systems". Third Americas Conference on Differential Equations and Nonlinear Analysis, Atlanta, Georgia (September 12, 1998).
 62. "Pattern formation in higher-order parabolic differential equations". UMBC, Baltimore, Maryland (March 6, 1998).
 63. "Spinodal decomposition for the Cahn-Hilliard equation in higher dimensions". Workshop on interfaces and parabolic regularisation, Leiden University, Netherlands, (November 6, 1997).
 64. "Spinodal decomposition for the Cahn-Hilliard equation in higher dimensions". AMS 1997 Fall Central Sectional Meeting, Milwaukee, Wisconsin (October 25, 1997).
 65. "Slow motion in higher-order systems and Γ -convergence in one space dimension". AMS 1997 Fall Southeastern Sectional Meeting, Atlanta, Georgia (October 18, 1997).
 66. "Spinodal decomposition for the Cahn-Hilliard equation". Georgia Institute of Technology, Atlanta, Georgia (October 9, 1997).
 67. "Slow motion in higher-order systems and Γ -convergence in one space dimension". Large time behavior in dynamical systems: Analysis and numerics, Oberwolfach, Germany (August 1, 1997).
 68. "Slow motion in higher-order parabolic equations". Third European conference on elliptic and parabolic problems, Pont-à-Mousson, France (June 16, 1997).
 69. "Slow motion and pattern formation in higher-order parabolic equations". University of Utah, Salt Lake City, Utah (February 7, 1997).
 70. "Slow motion and pattern formation in higher-order parabolic equations". Brigham Young University, Provo, Utah (February 6, 1997).
 71. "Pattern formation in the Cahn-Hilliard equation". Clemson University, Clemson, South Carolina (May 30, 1996).
 72. "Slow motion in higher-order singularly perturbed equations". Center for Applied Mathematics, Cornell University, Ithaca, New York (May 17, 1996).
 73. "Construction of doubly periodic solutions of nonlinear planar elliptic equations with certain nodal domains" (poster session). Callaway Gardens, Pine Mountain, Georgia (March 10, 1996).
 74. "Introduction to random dynamical systems". Georgia Institute of Technology, Atlanta, Georgia (lecture series, November 14, 21, and 28, 1995, January 23 and 30, 1996).
 75. "Linearization of random dynamical systems". Georgia Institute of Technology, Atlanta, Georgia (November 16, 1995).
 76. "Stationary solutions of the Cahn-Hilliard equation in two dimensions". Georgia Institute of Technology, Atlanta, Georgia (September 28, 1995).
 77. "Qualitative behavior of random differential equations". Fifth international colloquium on differential equations, University of Plovdiv, Bulgaria (August 20, 1994).
 78. "Linearization of random dynamical systems". Universität München, Germany (July 25,

1994).

79. “Linearization of random dynamical systems — an approach via nonautonomous random difference equations”. First international conference on difference equations, Trinity University – San Antonio, Texas (May 26, 1994).
80. “A generalized Hartman-Grobman theorem for random dynamical systems”. Workshop “A day full of randomness,” Universität Bremen, Germany (June 4, 1993).
81. “A Hartman-Grobman theorem for discrete random dynamical systems”. Universität Bremen, Germany (January 7, 1993).
82. “Matroid extensions”. Fourth international symposium on graph theory and combinatorics, CIRM – Marseille Luminy, France (July 12, 1990).
83. “Supersolvable matroid extensions”. RISC-workshop on combinatorics and computational algebraic geometry, RISC – Linz, Austria (May 25, 1989).

University and Community Service:

George Mason University:

2008-	Departmental Endowed Professor Hiring Committee, Chair
2008-	Departmental Policy & Hiring Committee
2007-	College of Science Promotion and Tenure Committee
2008	M.S. Committee, Chair (Elan Rodan)
2008	Ph.D. Candidacy Exam Committee (Richard Tatum)
2008	Ph.D. Candidacy Exam Committee, Co-Chair (Andrew Corrigan)
2008	Ph.D. Thesis Defense Committee, Chair (Tina Hartley)
2006-2008	Departmental Graduate Committee
2007	M.S. Committee (Mary Ann Graham)
2007	Ph.D. Candidacy Exam Committee (Tina Hartley)
2007	Ph.D. Candidacy Exam Committee (Javed Siddique)
2005-2007	Departmental Colloquium Committee
2006	Ph.D. Thesis Defense Committee (Timothy Seaman)
2006	Preliminary Exam Committee (Linear Analysis, ODE)
2006	Honors Thesis Committee (Tyler White)
2003-2006	Departmental SCS Liaison
2005	Ph.D. Candidacy Exam Committee (Timothy Seaman)
2005	Departmental Postdoc Hiring Committee
2005	Departmental Hiring Committee
2003	M.S. Committee (Karen Crossin)
2003	Undergraduate Grade Appeal Committee

University of Maryland, Baltimore County:

- 2005 Ph.D. Thesis Defense Committee (Valeriy Korostyshevskiy)
- 2004 M.S. Thesis Defense Committee, Chair (Jonathan Desi)
- 2003 Ph.D. Qualifying Exam Committee (Valeriy Korostyshevskiy)
- 2002 Ph.D. Thesis Defense Committee (Devasis Bassu)
- 2002 M.S. Thesis Defense Committee, Chair (Jennifer Deering)
- 2001-2002 Applied Mathematics Colloquium Organizer
- 2001-2002 Departmental Hiring Committee (Applied Mathematics)
- 2001 Ph.D. Qualifying Exam Committee (Justin Nave)
- 1998-2001 Departmental Graduate Program Committee
- 2001 Ph.D. Thesis Defense Committee (Igor Shimansky)
- 2001 Differential Equations Seminar Organizer
- 2000-2001 Departmental Library Liaison
- 1999-2000 Hiring Committee (Department Chair)
- 1999-2000 Departmental Hiring Committee (Scientific Computing)
- 1999 Ph.D. Qualifying Exam Committee (Devasis Bassu)
- 1999 M.S. Thesis Defense Committee (Yoon Song)
- 1998-1999 Classroom Instructional Technology Committee