

Mathematics and Statistics

Refereed publications and book chapters

Dombrowski, Joanne, Dombrowski, J. , Janas, J., Moszynski, M., and Pedersen, S. (2004). Spectral gaps resulting from periodic perturbations of a class of Jacobi operators. *Constructive Approximation*, 20, 585-601.

Dombrowski, J. (2004). Eigenvalues and spectral gaps related to periodic perturbations of Jacobi matrices. *Operator Theory: Advances and Applications*, 154, 91-100.

Farrell, Ann, Mathews, S., Basista, B., Farrell, A., and Tomlin, J. (2003). Meeting the challenge of middle school mathematics and science teacher preparation. *Teacher Education & Practice*, 16, 399-413.

Huang, Chaocheng, Dai, Z., Ritzi, R., Huang, C., Rubin, Y, and Dominic D. (2004). Transport in heterogeneous sediments with multimodal conductivity and hierarchical organization across scales. *J. Hydrology*, 294, 68-86.

Huang, C. (2004). On regularity of vortex patches 3D Euler systems. In *Proceedings of the Second International Congress of Chinese Mathematicians 2001, Series of New Studies in Advanced Mathematics*, International Press, 645-650.

Khamis, Harry , Gordi, T. and Khamis, H. (2004). Simple solution to a common statistical problem: interpreting multiple tests, *Clinical Therapeutics*, 26, 780-786.

Mathews, Susann, Mathews, S. M. (2004). Convoying merchant ships in wartime. *Mathematics Teaching in the Middle School*,. 9, 382-391.

Mathews, S. M. (2004). The experiences in a concepts in calculus class for middle school mathematics teachers. *Association of Mathematics Teacher Educators Monograph*.

McKee, Terry, McKee, T. (2004). Bipartite intersection graphs of the fundamental cycles and cutsets of a graph. *Bull. Inst. Combin. Appl.*, 40, 83-90.

McKee, T. (2004). Biclique comparability digraphs of bipartite graphs and minimal ranks of partial matrices. *Discrete Mathematics*, 287, 165-170.

McKee, T. (2004). Graph orientations and signings that are saturated with alternating cycles. *Ars Combin.*, 73, 107-135.

McKee, T. (2004). Maximal planar (bipartite) graphs as chordal (bipartite) graphs. *J. Combin. Math. Combin. Comput.*, 51, 127-135.

Pedersen, Steen, Pedersen, S. (2004). The dual spectral set conjecture. *Proceedings of the American Mathematical Society*.

Pedersen, S. (2004). On the dual spectral set conjecture. Proceeding of IWOTA 2002, Birkhauser.

Ratnaparkhi, Makarand, Ratnaparkhi, M. and Patil, G.P. (2004). Weighted distributions. In Statistical computing: existing methods and recent developments, Eds. D. Kundu and A. Basu, IIT Kanpur Series of Advanced Text, Narosa, New Delhi, India.

Tarpey, Thaddeus, Tarpey, T., and Sanders, R. D. (2004). Linear conditional expectation for discrete distributions. Journal of Applied Statistics, 31, 361-372.

Tarpey, T., Petkova, E. and Ogden, R. T. (2004). Profiling placebo responders by self-consistent partitions of functional data. Journal of the American Statistical Association, 98, 850-858.

Tian, Emily, Lu, Z., Tian, E. M., and Grimshaw, R. (2004). Interaction of two lump solitons described by the Kedomtsev-Petviashvili I equation. Wave Motion, 40, 123-135.

Turyn, Larry, Turyn, L. (2004). Cellular neural networks: asymmetric space-dependent templates, mosaic patterns, and spatial chaos. International Journal of Bifurcation and Chaos, 14, 2655-2665.

Wang, Weizhen, Wang, W. and Yu, Y. B. (2004) Algorithmic generation of freely jointed hard sphere chains and properties of their inertial tensors. Journal of Biomolecular Structure and Dynamics, 21, 805-811.

Presentations and Invited Talks

Arasu, K. T., Invited: New class of self-dual codes, OSU-Denison Conference, Ohio State University, Columbus, Ohio, September 18-19, 2004.

Arasu, K. T., Invited: Perfect sequence constructions, West Coast Number Theory Conference, December 2004.

Chen, Yuqing, Contributed: Relative difference sets and Cayley graphs, 39th Midwest Graph Theory Meeting, Ball State University, Muncie, Indiana, November 20, 2004

Dombrowski, Joanne, Contributed: Spectral Properties of unbounded Jacobi operators, Wabash Modern Analysis Mini Conference, IUPUI, Indianapolis, Indiana, September 18-19, 2004.

Evans, Anthony, Invited: Some new constructions of difference matrices over Z_{3n} , 27th OSU-Denison Conference, Ohio State University, Columbus, Ohio, June 11-13, 2004.

Evans, Anthony, Invited: The existence problem for complete mappings of finite groups, 27th OSU-Denison Conference, Ohio State University, Columbus, Ohio, June 11-13, 2004.

Evans, Anthony, Contributed: Representations of disjoint unions of complete graphs, 35th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Florida Atlantic University, Boca Raton, Florida, March 8-12, 2004.

Evans, Anthony, Contributed: Representations of disjoint unions of complete graphs, Might 38, Western Kentucky University, Bowling Green, Kentucky, May 15, 2004.

Farrell, Ann, Invited: Mathematicians in their own right: a goal for teacher preparation, Preparing Mathematicians to Educate Teachers, Bowling Green State University, September 2, 2004.

Farrell, Ann, Invited: Ohio's K-12 math standards and planning the first two years of college mathematics, Sinclair Community College Mathematics Department Retreat, Dayton, Ohio, September 2, 2004.

Farrell, Ann, Contributed: ACT, SAT and integrated math (Core-Plus and COMAP), Ohio Council of Teachers of Mathematics Annual Meeting, Akron, Ohio, October 14-16, 2004.

Huang, Chaocheng, Invited: Monge-Kantorovich mass transfer problem and its applications, University of Cincinnati, February, 2004.

Huang, Chaocheng, Invited: Predicting surface flows and transport in strongly heterogeneous random media, University of Dayton, November, 2004.

Huang, Qingbo, Invited: On the mean oscillation of second derivatives of solutions to the Monge-Ampère equation, 54th Midwest PDE Seminar, Wayne State University, Detroit, Michigan, November 19-21, 2004.

Huang, Qingbo, Invited seminar: Parabolic Monge-Ampère equations and the Gauss flow, University of Texas at Austin, Austin, Texas, May 2004.

Huang, Qingbo, Invited colloquium: Parabolic Monge-Ampère equations and the Gauss flow, University of Cincinnati, February 2004.

Khamis, Harry, Invited seminar: The multigraph representation of hierarchical loglinear models, Department of Mathematical Sciences and Department of Statistics, Umeå University, Umeå, Sweden, May 18, 2004.

Khamis, Harry, Invited: Multigraph representation of hierarchical loglinear models, Department of Statistics, Virginia Tech, Blacksburg, Virginia, November 4, 2004.

Khamis, Harry, Invited: Comparison of tests for the proportional hazards assumption in the Cox model, Division of Epidemiology and Biostatistics, University of Cincinnati, Cincinnati, Ohio November 18, 2004.

Khamis, Harry, Contributed poster session: Multigraph representation of hierarchical loglinear models, 24th Conference on Applied Statistics in Ireland, Galway, Ireland, May 12, 2004.

Khamis, Harry, Contributed: Bias of the Cox model, International Conference in Honor of Sir David Cox on the Occasion of his 80th Birthday, Newchatel, Switzerland, July 17, 2004.

Khamis, Harry, Contributed: Matched samples logistic regression in case-control studies with missing values: when to break the matches, Joint Statistical Meetings, Toronto, Canada, August 11, 2004.

Mathews, Susann, Invited: Connections within mathematics for middle grades students, National Council of Teachers of Mathematics annual national conference, Philadelphia, Pennsylvania, April 2004.

Mathews, Susann, Invited: Mathews, S. M. and Farrell, A. Investigating spherical geometry, Ohio Board of Regents Conference: Preparation of Ohio's Math and Science Teachers: Content Delivery through Inquiry Teaching, Columbus, Ohio, April 2004.

Mathews, Susann, Invited: Mathews, S. M. and Reed, M. K. Fathom software for data analysis and mathematics exploration, Ohio Board of Regents Conference: Preparation of Ohio's Math and Science Teachers: Content Delivery through Inquiry Teaching, Columbus, Ohio, April 2004.

Mathews, Susann, Contributed: Mathews, S. M. and Reed, M. K. Explorations with Fathom, Ohio Council of Teachers of Mathematics annual conference, Akron, Ohio, October 2004.

McKee, Terry, Invited: Requiring chords in cycles, 17th Cumberland Conference on Combinatorics, Graph Theory & Computing, Middle Tennessee State University, May 20-22, 2004.

McKee, Terry, Contributed: Clique representation of graphs, 35th Southeastern International Conference on Combinatorics, Graph Theory & Computing, Florida Atlantic University, March 8-11, 2004.

McKee, Terry, Contributed: Independent separator graphs, 12th SIAM Discrete Mathematics Conference, Nashville, Tennessee, June 13-16, 2004.

McKee, Terry, Contributed: Lengths in cycle spaces and related topics, 39th Midwest Graph Theory Meeting, Ball State University, Muncie, Indiana, November 20, 2004.

Ratnaparkhi, Makarand, Invited: Hidden Markov models for compositional time series arising in microfinance banking and monitoring, International Statistical Conference, Kandy, Sri Lanka, December 28-30, 2004.

Ratnaparkhi, Makarand, Invited: Modeling selection biased data arising in environmental and medical studies using weighted lognormal and bivariate lognormal distributions, International Statistical Conference, Hyderabad, India, December 29, 2004-Jan 1, 2005.

Reed, Michelle, Invited: Mathews, S. M. and Reed, M. K. Fathom software for data analysis and mathematics exploration, Ohio Board of Regents Conference: Preparation of Ohio's Math and Science Teachers: Content Delivery through Inquiry Teaching, Columbus, Ohio, April 2004.

Reed, Michelle, Contributed: Reed, M. K., and Owens, D. T., Recent research in mathematics: implications for teachers and teaching, Ohio Council of Teachers of Mathematics annual conference, Akron, Ohio, October 2004.

Reed, Michelle, Contributed: Mathews, S. M. and Reed, M. K. Explorations with Fathom, Ohio Council of Teachers of Mathematics annual conference, Akron, Ohio, October 2004.

Slilaty, Dan, Invited colloquium: What is a matroid?, Miami University, Oxford, Ohio, January 2004.

Slilaty, Dan, Invited: Decompositions of signed graphs, 27th OSU-Denison Conference, Ohio State University, Columbus, Ohio, June 11-13, 2004.

Slilaty, Dan, Invited: Decompositions of signed graphs, 39th Midwest Graph Theory Meeting, Ball State University, Muncie, Indiana, November 20, 2004.

Tian, Emily, Invited seminar: Nonlinear interaction of KPI solutions, OSU Applied Math Seminar, Ohio State University, November 4, 2004.

Tian, Emily, Contributed: Soliton interaction of KPI equation, SIAM Nonlinear Waves and Coherent Structures conference, Orlando, Florida, October 2-5, 2004.

Voss, Dan, Invited colloquium: Analysis of saturated factorial designs, Department of Mathematical Sciences, University of Memphis, Memphis, Tennessee, March 26, 2004.

Voss, Dan, Invited colloquium: Statistics and multiplicity, Department of Mathematical Sciences, University of North Carolina at Greensboro, Greensboro, Tennessee, November 22, 2004.

Wang, Weizhen, Invited: Stepwise tests of orthogonal saturated designs, Department of Mathematics, Beijing Normal University, Beijing, China, June 2004.

Wang, Weizhen, Contributed: Optimal nonrandomized tests for comparing two binomial probabilities, Eastern North American Region conference of the International Biometric Society, Pittsburg, Pennsylvania, March 2004.

Invitations to Participate or Chair Symposia

Dr. Dan Voss, Invited member, International Advisory Committee for the International Conference on Design of Experiments, Memphis, Tennessee, May 2005

Editorial Boards

Dr. K. T. Arasu, Designs, Codes and Cryptography

Dr. Harry Khamis, Journal of Diagnostic Medical Sonography

Dr. Harry Khamis, Computer Methods and Programs in Biomedicine

Dr. Harry Khamis, International Journal of Statistical Sciences

Dr. Harry Khamis, Journal of Modern and Applied Statistical Methods

Dr. Munsup Seoh, InterStat

Dr. Dan Voss, Journal of Statistics and Applications

Organizing/Hosting Special Events, Symposia, Colloquia

Dr. K. T. Arasu, (Co-Chair of Colloquium Committee)

Hosted Colloquium - Prof. Bulutoglu Dursun, Air Force Instit of Technology - Statistics

Dr. K. T. Arasu, Hosted Colloquium - Prof. Aaron Meyerowitz, Florida Atlantic University - Combinatorics

Dr. K. T. Arasu, Hosted Colloquium - Prof. Yuqing Chen, Royal Melbourne Institute of Technology, Australia - Discrete Math

Dr. K. T. Arasu, Hosted Colloquium - Prof. M. L. Aggarwal, Delhi University visiting Memphis - Statistics

Dr. K. T. Arasu, Hosted Colloquium - Prof. S. K. Sehgal, Ohio State University - Algebra

Dr. K. T. Arasu, Hosted Colloquium - Prof. S. K. Jain, Ohio University - Algebra

Dr. K. T. Arasu, Hosted Colloquium - Prof. Darren Parker, University of Dayton - Discrete Math

Dr. K. T. Arasu, Hosted Colloquium - Peter Brooksbank, Ohio State University - Groups and Algorithms

Dr. K. T. Arasu, Hosted Colloquium - Dr. Jozsef Balogh, Ohio State University - Discrete Mathematics

Dr. K. T. Arasu, Hosted Colloquium - Joseph Shang, Mechanical & Materials Engineering, WSU - Applied Math

Dr. K. T. Arasu, Hosted Colloquium - Dr. Stephanie Edwards, University of Dayton - Complex Variables

Dr. K. T. Arasu, Hosted Colloquium - Prof. Siu Lun Ma, National University of Singapore - Algebraic Combinatorics

Dr. K. T. Arasu, Hosted Colloquium - Dr. Jeff Riedl, Akron University - Group Theory

Dr. Yuqing Chen, Hosted Colloquium - Prof. Henry Glover, Ohio State University - Topological Graph Theory

Dr. Qingbo Huang, Hosted Colloquium - Prof. Weizhong Dai, Louisiana Tech University - Analysis

Dr. Emily Tian, Hosted Colloquium - Prof. Chaocheng Huang, Mathematics & Statistics, WSU - Applied Math

Dr. Harry Khamis, Hosted Colloquium - Prof. John Holcomb, Cleveland State University - Statistics

Dr. Makarand Rataparkhi, Hosted Colloquium - Prof. Basil M. deSilva, RMIT University, Melbourne, visiting Miami University - Statistics

Dr. Munsup Seoh, Hosted Colloquium - Dr. Jong Sung Kim, Portland State University - Statistics

Dr. Thaddeus Tarpey (Co-Chair of Colloquium Committee)

Dr. Thaddeus Tarpey, Hosted Colloquium - Dr. Todd Ogden, Columbia University - Statistics

Dr. Thaddeus Tarpey, Hosted Colloquium - Prof. Kimberly Kinatader, Mathematics & Statistics, WSU - Statistics

Dr. Thaddeus Tarpey, Hosted Colloquium - Prof. Eva Petkova, Columbia University - Biostatistics

Dr. Emily Tian, Hosted Colloquium - Dr. Huseyin Kocak, Miami University - Applied Math

Dr. Larry Turyn, Hosted Colloquium - Dr. Richard J. Turyn, Auburndale, MA - Discrete Math

Dr. Dan Voss, Hosted Colloquium - Prof. Jason C. Hsu, Ohio State University - Statistics

Awards to Faculty, Staff, Students

Mr. Glenn Dahl, Outstanding Teaching Award, CoSM

Mr. Micah Fuerst, Outstanding Senior Award, for undergraduate mathematics majors

Mr. Micah Fuerst, Barry M. Goldwater Scholarship recipient

Ms. Amber Heini, undergraduate mathematics major
Outstanding Junior Award, for undergraduate mathematics majors

Dr. Harry Khamis, Inducted into Gamma Delta Chapter of Phi Beta Delta, Honor Society for International Scholars

Dr. Susann Mathews, Teaching Fellow, one of 18 in Ohio, awarded by the Ohio Board of Regents, 2004-2006

Adelaide Shultz, Outstanding Senior Project Award, for best project in our Undergraduate Mathematics and Statistics Seminar

Outreach Programs

Dr. Ann Farrell, Member (invited then appointed) of the Educator Standards Writing Team for the Ohio Department of Education. Will report to Ohio's Educator Standards Board and will set standards for teaching and professional development for Ohio's teaching profession.

Dr. Ann Farrell, Member (invited then appointed) of the Ohio Graduation Test Mathematics Standard Setting 2004 Committee, to recommend scoring standards for the Ohio Graduation Tests, Ohio Department of Education, Columbus, Ohio.

Dr. Ann Farrell, Member (invited then appointed) of the Advisory Committee and the Program Committee of the Wright Air & Space Center, a mathematics and science learning center, currently under development, featuring lessons related to aeronautics and space and Dayton's aviation heritage, Dayton, Ohio.

Dr. Ann Farrell, Member (invited then appointed) of the Ohio Advisory Team for the Ohio Board of Regents' Distributed Learning Workshop Mathematics Courseware development.

Dr. Kimberly Kinatader, Middle School Youth Leader; mentored to two young women

Dr. Susann Mathews, Member of the “P-6 Specialist Endorsement Standards for Mathematics” Lead Writing Team, Columbus, Ohio

Dr. Richard Mercer, WSU Institutional Representative for the Goldwater Scholarship Competition (responsible for publicity, recruiting candidates, selecting nominees)

Dr. Richard Mercer, Judge at West District Science Day, Central State University

Dr. Richard Mercer, Math Pentathlon for Beavercreek Schools at Valley Elementary School, volunteer

Dr. Richard Mercer, K-8 Chess Club for Beavercreek Schools, Director

Dr. Michelle Reed, Advisory Board invited member for “Prompt Intervention in Mathematics Education (PRIME): Research and Best Practices”, a project of the Ohio Resource Center for Science, Math, and Reading, being conducted at the request of the ODE

Dr. Michelle Reed, Proctored the “Ohio Council of Teachers of Mathematics” mathematics contest for 150 high school students on campus, February 2004

Dr. Michelle Reed, St. Joseph Montessori School, Board of Trustees, elected member and Secretary

Dr. Michelle Reed, Central Ohio Writers of Literature for Children conference, Treasurer

Dr. Munsup Seoh, American Statistical Association Dayton Chapter, Webmaster

Dr. Munsup Seoh, AAYAT state-wide-survey project, consulting and managing data

Dr. Munsup Seoh, Active in: State of the State Conference; Federation against Intolerance and Racism; Asian American Council—Dayton: MLK Jr. Birthday Celebration; NAACP; Dayton Korean United Methodist Church; Dayton South District United Methodist Church; Dayton Area Korean Association; Community Summit on Eliminating Institutional Racism

Dr. Thaddeus Tarpey, American Statistical Association Dayton Chapter, Secretary-Treasurer

Dr. Larry Turyn, Active in: Temple Shalom; JAM (Justice Action Mercy) Interfaith Social Action Group

Dr. Jim Vance, Various service for Grace United Methodist Church (Dayton), including membership on stewardship and capital campaign committees, and webmaster

Dr. Dan Voss, Gave six presentations on “Puzzles and Mathematics” for the CoSM Exploring Science program

Dr. Dan Voss, American Statistical Association Dayton Chapter, President

Dr. Dan Voss, Honor Seminars of Metropolitan Dayton, Inc., Board of Directors

Student Clubs and Activities

Mathematical Contest in Modelling: Dr. Tom Svobodny facilitated WSU student participation in this national competition.

Putnam Mathematical Competition: Dr. Manley Perkel recruited student participation and conducted study sessions, and Dr. Phan Loi proctored the exam, facilitating WSU student participation in this annual national mathematics competition.

Off Campus or Special Interest Courses

Dr. Ann Farrell, Seminar in Secondary Math and Science Education (ED 829) / Advanced Research and Design Analysis (EDL 851), team taught with Beth Basista for the Excel Center grant-funded program.

Dr. Ann Farrell, Curriculum and Data Analysis Workshop (ED 670), funded by ODE, team-taught with Michelle Reed (M&S) and Tracy Rusch (TED) for 22 teachers, November 2004-May 2005.

Dr. Ann Farrell, Mentored five Dayton Public School mathematics teachers conducting original research on the effectiveness of mathematics and curriculum coaches.

Graduate Students Graduating

Ruohong Liang, M.S. in Applied Statistics

Grady Burkett, M.S. in Mathematics, Adjunct Instructor, Wright State University

Kevin Drees, M.S. in Mathematics, Ph.D. student, Bowling Green State University

Zubair Khan, M.S. in Mathematics, Ph.D. student, University of Texas

Lisa Saletta, M.S. in Statistics, Procter and Gamble, Cincinnati

Joanne Smith, M.S. in Applied Statistics

Yongli Shuai, M.S. in Applied Statistics, Futuresllc, a market analysis and consulting company in Philadelphia

George Hurley, M.S. in Applied Statistics, Procter and Gamble, Cincinnati

Jennifer Laphorn, M.S. in Applied Statistics