

DEPARTMENT OF MATHEMATICS AND STATISTICS

ANNUAL REPORT FOR AY 2006

Masters' Theses

[Hattingh] Andrew R. Plummer, Characterizations in domination theory.

[Hsu]

- Chenghong Shen, Some Significant Results in the Classification Analysis of the Spectroscopic Evaluation of Cervical Cancer.
- Jing Qian, The Evaluation of Hedge Funds Performance.
- Yuqing Xiao, Estimating Some Probabilities for Near-Real-Time Monitor Challenge Data with a Bayesian Method.
- LaTonia Clay, The Association of Hypertension Diagnosis with Smoking Cessation – Application of Multiple Logistic Regression Using Biostatistical and Epidemiological Methods.
- Marchelle Sanchez, Analyzing the Effects of Adolescent Risky Behaviors on Suicidal Ideation.

[Li] Krishna Kaphle, Spectrally Arbitrary Tree Sign Pattern Matrices.

[Qin] Xiaoping Jin, Confidence Intervals for the Partial Area under the ROC Curve.

[Zhao, Yichuan]

- Wen Jian, Analysis of Longitudinal Data in the Case-Control Studies via Empirical Likelihood.
- Min Lu, A Study of the Calibration Regression Model with Censored Lifetime Medical Cost.
- Omar Mbowe, A Study of the Mean Residual Life Function and Its Applications.
- James Nguyen, Comparison and Model Selection for Larynx Cancer Data.
- Yue Zhou, Analysis of Additive Risk Model with High Dimensional Covariates Using Partial Least Squares.

Grants

Internal Grants

Drs. Arav, Belykh, Enescu, Han, Patyi, Smirnova, and Yi Zhao all received research initiation grants, while Drs. Arav, Belykh, Hsu, Qin, Shilnikov, and Smirnova obtained internal grants from the Brains and Behavior program. Drs. Chen and Yichuan Zhao received a faculty scholarship mentoring grant, with Dr. Chen as mentor and Dr. Zhao as mentee. A faculty scholarship mentoring grant was also awarded to Drs. Vidakovic and Montiel, with Dr. Vidakovic as mentor and Dr. Montiel as mentee. Drs. Alexander, Miller, Patterson, Rogers and Vidakovic received PRISM mini-grants. Lastly, the

Department received a Retention, Progression and Graduation (RPG) grant to support the efforts of the Mathematics Assistance Complex (MAC) by improving the technology component of the facility as well as providing funding for additional tutors. Funds were also used to provide additional tutors for the Mathematics Interactive Learning Environment (MILE).

External Grants

Name	Grant
Arav	NSF-AWM Mentoring Travel Grant for Women Researchers, The Human Olfactory Recognition using Boolean Matrix Factorization
Arav	DIMACS grant for a visiting researcher
Bakonyi	U.S. -Europe Cooperative Research Grant, NSF
Bakonyi	Grant from SOFTWIN Company, Romania, for local expenses during stay at the Mathematical Institute of the Romanian Academy
Belykh	Pattern formation in ecological networks, Cariplo Foundation
Chen	Graph Computing on Finding Long Cycles and Small Dense Subgraphs with Applications, NSF
Chen	An Interactive Decision-Support Tool to Maximize Chlamydia and Gonorrhea Screening Resources: A Means to Reduce Disparities in STD Burden, Centers for Disease Control
Enescu	Special chapters in the theory of rings of positive characteristic, NSA
Enescu	Collaborative research: a new theoretical and algorithmic framework for RTL datapath verification using polynomial algebra over finite rings, NSF
Hattingh	Travel grant from the Indo-US Science and Technology Forum, New Delhi, to attend the International Conference on Discrete Mathematics at the Indian Institute of Science in Bangalore, India
Hsu	Verify Statistical Requirements for Quality Control Implementation, Army
Hsu	Cluster Analysis and Validation of the Spectroscopic Evaluation of Cervical Cancer, Spectrix
Hsu	Statistical Analysis of the Evaluation of NSF HBCU-Undergraduate Program, NSF
Miller	Making Algebra and Precalculus Successful (MAPS), Professional Development Schools Subgrant
Patyi	Complex analysis on Banach spaces
Qin	Statistical Methods in Diagnostic Medicine, NIH

Qin	Empirical Likelihood Based Statistical Methods for Diagnostic Systems, NSF
Shilnikov	Xilinx FPGA hardware and software grant
Smirnova	AWM/NSF Travel Grant to attend International Conference 'Tikhonov and Contemporary Mathematics, Moscow, Russia
Vidakovic	Urban Mathematics Educator Program (UMEP), NSF
Vidakovic	Travel support by NSF project to Linear Algebra Project meeting
Yao	Tight closure and primary decomposition in commutative algebra, NSF
Yi Zhao	Exact results in Extremal Graph Theory, NSA
Yi Zhao	Turan-type Problems on Hypergraphs, NSA
Yichuan Zhao	National Cancer Institute Full Support for ENAR workshop for young investigators.
Yichuan Zhao	NSF Travel Support to attend International Biometrics Conference. July
Yichuan Zhao	Empirical likelihood based inference in survival analysis, NSA

Graduate Students

Faculty Publications, Performances, and Exhibitions

Departmental faculty members published 47 research papers in prestigious, refereed, international journals.

Publications

1. **M. Alexander**, and N. Patterson, The Effects of Undergraduate Mathematics Course Redesign on Student Achievement (Alatorre, S., Cortina, J.L., Saiz, M, Mendez, A. (Eds), *Proceedings from the Twenty Eighth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Merida, Mexico, 2006.
2. K. Hayashi, and **M. Arav**, Bayesian Factor Analysis when Only a Sample Covariance Matrix is Available, *Educational and Psychological Measurement*, **66** (2006) 272-284.
3. **M. Arav**, S. Reich, and A. J. Zaslavski, A Note on the Minimization of Convex Functions, *International Journal of Pure and Applied Mathematics*, **32** (2006) 65-70.
4. **M. Bakonyi** and D. Timotin, A Remark on Positive Definite Functions on Free Groups, *Demonstratio Mathematica*, **39(2)** (2006) 317-320.
5. I. **Belykh**, V. Belykh, and M. Hasler, Generalized connection graph method for synchronization in asymmetrical networks, *Physica D* **224** (2006) 42–51.

6. **I. Belykh**, V. Belykh, and M. Hasler, Synchronization in asymmetrically coupled networks with node balance, *Chaos* **16** (2006) 015102.
7. **I. Belykh**, M. Hasler, and V. Belykh, Graph-based criteria for synchronization of diffusively coupled oscillators, Proceedings of the Int. Symposium on Nonlinear Theory and its Applications (NOLTA-2006), Bologna, Italy, 567-570 (2006).
8. **G.T. Chen**, R.J. Faudree, R.J. Gould, and M.S. Jacobson, Cycle extendability of hamiltonian interval graphs, *SIAM Journal of Discrete Mathematics* **20(6)** (2006) 682-689.
9. **G.T. Chen**, L. Sheppardson, X. Yu, and W. Zang, Circumferences of graphs with no $K_{3,t}$ -minors, *Journal of Combinatorial Theory Ser B* **96(6)** (2006) 822-845.
10. **G.T. Chen**, H. Deng, W. Yang, and J. Yang, Predicting Calcium Binding Sites in Proteins-A Graph Theory and Geometry Approach, *Proteins* 64(1) (2006) 34-42.
11. **G.T. Chen**, W. Shreve and B. Wei, Hamiltonian graphs involving neighborhood unions, *Journal of Graph Theory* **53(2)** (2006) 83-100.
12. **G.T. Chen**, Z. Gao, W. Zang, and X. Yu, Approximating long cycles in graphs with bounded degrees, *Siam Journal of Computing* **36(3)** (2006) 635-656.
13. **G.T. Chen**, J.P. Hutchison, K. Keating, and J. Shen, Characterizations of [1,k]-Bar Visibility Trees, *The Electronic Journal of Combinatorics* **13** (2006) R90.
14. **G.T. Chen**, H. Deng, Y. Gui, Y. Pan, and X. Wang, Cysteine separations profiles on protein secondary structure infer dsulfide connectivity, *Proceedings of IEEEGrC 2006*, Atlanta, GA, May 10-12, 2006.
15. **L.Ding**, A theorem on reflexive large rank operator spaces, *Proceedings of the American Mathematical Society* **134(10)** (2006) 2881-2884.
16. **F. Enescu** and I. M. Aberbach, When does the F-signature exist?, *Annales Math. de Toulouse* **15(2)** (2006) 195-201.
17. P. Dankelmann, **J.H. Hattingh**, M.A. Henning, and H. C. Swart, Trees with equal domination and restrained domination numbers, *Journal of Global Optimization* **34** (2006) 597-607.
18. L.M. Harris, **J.H. Hattingh**, and M.A. Henning, Total k -subdominating functions on graphs, *Australasian Journal of Combinatorics*, **35** (2006) 141-154.
19. L.M. Harris, **J.H. Hattingh**, and M.A. Henning, Algorithmic aspects of total k -subdomination in graphs, *Discussiones Mathematicae Graph Theory* **26(1)** (2006) 5-18.
20. L.M. Harris, **J.H. Hattingh**, and M.A. Henning Algorithmic aspects of minus total k -subdomination in graphs, *Australasian Journal of Combinatorics* **36** (2006) 101-111.

21. **J.H. Hattingh**, E. Jonck and C. Ras The $L(d, 1)$ -hole index of paths and cycles, *Utilitas Mathematica* **69** (2006) 55-64.
22. **M. Montiel**, Mathematical Fluency Measured with the Four Parameters of Foreign Language Learning: Applications of the Integral in Alatorre, S., Cortina, J.L., Saiz, M, Mendez, A. (Eds) (2006), *Proceedings from the Twenty Eighth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Merida, Mexico: Universidad Pedagógica Nacional.
23. S. Dineen, **I. Patyi**, and M. Venkova, *Inverses Depending Holomorphically on a Parameter in a Banach Space*, *Journal of Functional Analysis* **237 (1)** (2006) 338–349.
24. **G.S. Qin**, **Y.-S. Hsu** and, X.H. Zhou, New confidence intervals for the difference between two sensitivities at a fixed level of specificity, *Statistics in Medicine* **25** (2006) 3487-3502.
25. **G.S. Qin**, and X.H. Zhou, Empirical likelihood inference for the area under the ROC curve, *Biometrics* **62** (2006) 613-622.
26. X. H. Zhou, **G.S. Qin**, **H.Z. Lin**, and G. Li, Inferences in censored cost regression models with empirical likelihood. *Statistica Sinica* **16** (2006) 1213-1232.
27. **A.L. Shilnikov** and D. Turaev, Blue Sky Catastrophe
<http://www.scholarpedia.org/article/Blue-Sky_Catastrophe> *Scholarpedia* 2006
28. A.B.Bakushinsky, and **A.B.Smirnova**, A posteriori stopping rule for regularized fixed-point iterations, *Journal of Nonlinear Analysis Series A: Theory, Methods & Application* **64(6)** (2006) 1255-1261.
29. A.B.Bakushinsky, **A.B.Smirnova**, and M.A.Skinner, Iteratively Regularized Gradient Method with a Posteriori Stopping Rule for 2D Inverse Gravimetry Problem, *Journal of Integral Equations and Applications* **17(N4)** (2006) 375-390.
30. A.B.Bakushinsky, and **A.B.Smirnova**, On application of Generalized Gauss-Newton Schemes to Inverse Problem in Optical Tomography, *Proceedings of International Conference 'Tikhonov and Contemporary Mathematics, Section on Inverse and Ill-Posed Problems*, 38-39, June (2006), Moscow, Russia.
31. **M. Stewart**, An error analysis of a unitary Hessenberg QR algorithm, *SIAM Journal on Matrix Analysis and Applications* **28(1)** (2006) 40–67.
32. **M. Stewart**, and P. van Dooren, On the Factorization of Hyperbolic and Unitary Transformations into Rotations, *SIAM Journal on Matrix Analysis and Applications* **27(3)** (2006), 876–890.
33. **M. Stewart**, Perturbation of the SVD in the Presence of Small Singular Values, *Linear Algebra and Its Applications* **419** (2006) 53-77.

34. Junor-Clarke, C.D. Thomas, and **D. Vidakovic**, In Search of Identity: Urban teachers' perspectives of high quality mathematics teaching, *Proceedings of the Hawaii International Conference on Education*, 3226-3239, January 6-9, (2006), Honolulu, Hawaii.
35. **Y. Xiao**, A. Gordon, and A. Yalovlev, The L1-version of the Cramer-von Mises test for two-sample comparisons in microarray data analysis, *EURASIP Journal on Bioinformatics and System Biology* (2006) (Article ID 85769), 1-9.
36. H. Liang, and **Y. Xiao**, Penalized Splines for Longitudinal Data with Application in AIDS Studies, *Journal of Modern Applied Statistical Methods*, **5(1)** (2006) 156-173.
37. **Y. Xiao**, and R.B. Lund, Inference for shot noise, *Statistical Inference for Stochastic Processes* **9** (2006) 77-96.
38. L. Klebanov, A. Gordon, **Y. Xiao**, H. Land, and A. Yakovlev, A permutation test motivated by microarray data analysis, *Computational Statistics and Data Analysis* **50(12)** (2006) 3619-3628.
39. C. Huneke, M. Katzman, R. Y. Sharp, and **Y. Yao**, Frobenius test exponents for parameter ideals in generalized Cohen-Macaulay local rings, *Journal of Algebra* **305(1)** (2006) 516--539.
40. **Y. Yao**, Observations on the F-signature of local rings of characteristic p, *Journal of Algebra* **299** (2006) 198–218.
41. **Y. Yao**, Primary decomposition II: primary components and linear growth, *Journal of Pure and Applied Algebra* **205(1)** (2006) 226–242.
42. **C. Zhong**, K. Nam and D. Zheng, m-Berezin transform and compact operators, *Revista Matemática Iberoamericana* **22(3)** (2006) 867-892.
43. D. Mubayi , G. Turan and **Y. Zhao**, The DNF exception problem, *Theoretical Computer Science* **352** (2006) 85-96.
44. **Y.C. Zhao**, Statistical analysis of high dimensional gene data, *Proceedings of IEEE-Granular Computing*, Atlanta, May, 10—12, 502—505, 2006.
45. **Y.C. Zhao** and M. Lu, Empirical Likelihood Analysis of the Calibration Regression Model, *Proceedings of the American Statistical Association, Biometrics Section*, CD-ROM, 2006.
46. **Y.C. Zhao** and I. W. McKeague, Width-scaled confidence bands for survival functions, *Statistics and Probability Letters* **76** (2006) 327—339.
47. **Y.C. Zhao** and **G.S. Qin**, Inference for the mean residual life function via empirical likelihood. *Communication in Statistics, Theory and Methods* **35** (2006) 1025-1036.

Professional Conferences and Public Events

Departmental faculty members presented several papers at professional meetings and conferences and, in addition, presented colloquia at other universities. Dr. Shilnikov co-organized the meeting *Origin and Regulation of Bursting Activity in Neurons* which was held on April 6-7, 2006 in Atlanta.

Conferences

[Alexander]

- Redesigning Assessments with Electronic Portfolios, Margo Alexander & Chandra Maharaj, FYE, February 2006, Hyatt Regency, Atlanta, GA.
- A Road to Redesign in College Algebra & Precalculus, Margo Alexander, Nikita Patterson, ICTCM, March 2006, Walt Disney World Hilton, Orlando, FL.
- College Algebra and Precalculus Course Redesign Report, N. Patterson, M. Alexander, V. Miller & B. McPhail, PRISM Institute, April 2006, Timber Ridge, Mableton, GA.
- The Redesign of our College Algebra and Precalculus Course, Margo Alexander, R2R, June, 2006, Baltimore, MD.
- Increasing Student Success in College Mathematics, Margo Alexander, International Conference on Interdisciplinary Social Sciences, July 2006, University of the Aegean, Island of Rhodes, Greece.
- Mini-grant report on College Algebra and Precalculus Course Redesign, N. Patterson, M. Alexander, V. Miller and B. McPhail, PRISM Institute, October 2006, Timber Ridge, Mableton, GA.
- Darwin's "The Origin of Species" and Mathematics Education, Margo Alexander, NABT, October 2006, Albuquerque Convention Center, Albuquerque, NM.
- College Algebra and Precalculus Course Redesign Minigrant Report, N. Patterson, M. Alexander, V. Miller and B. McPhail, PRISM Institute, November 2006, Cordele, GA.
- The Effects of Undergraduate Mathematics Course Redesign on Student Achievement, Margo Alexander and Nikita Patterson, PMENA, November, 2006, Merida, Mexico.

[Arav]

- *RUTCOR Seminar*, DIMACS Center, RUTCOR Building, Busch Campus, Rutgers University, Piscataway, NJ, USA, March 7, 2006, **invited talk**.
- *Nonlinear Analysis and Optimization Seminar*, Technion, Haifa, Israel, December 27, 2006, **invited talk**.
- *Bio-Medical Mathematics Seminar*, Tel-Aviv University, Tel-Aviv, Israel, December 29, 2006, **invited talk**.

[Bakonyi]

- 58th British mathematical Colloquium, University of Newcastle, United Kingdom; 21st International Operator Theory Conference, Timisoara, Romania.
- Mini Symposium on Operator Theory, Mathematical Institute of the Romanian Academy, **invited talk**.

[Belykh]

- Int. Workshop “Origin and Regulation of Bursting Activity in Neurons”, Atlanta , USA , April 7-8, 2006. **Invited talk:** “Synchronized bursting: what matters in the network topology”.
- 6th Crimean School and Workshops Nonlinear Dynamics, Chaos, and Applications. Workshop: Stochastic and Chaotic Dynamics in Action: from Laser to Brain, from Communication to Medicine, Yalta, Crimea, Ukraine 15-26 May, 2006 . **Invited talk:** “Synchrony in networks of bursting neurons”.
- Int. Symposium on Nonlinear Theory and its Applications (NOLTA-2006), Bologna, Italy, 2006. **Contributed talk:** "Graph-based criteria for synchronization of diffusively coupled oscillators”.

[Chen]

- Linkages with Modulo Constrains, AMS Annual Meeting at San Antonio – SIAM Minisymposium on Graph Drawing, Texas, January 2006, **invited talk.**
- Finding Long Cycles in 3-connected Graphs, Cycles and Colourings'06, Slovakia, September (**Plenary Speaker**)
- Linkages with Modulo Constraints, EXCILL: Extremal Combinatorics at Illinois, Urbana, Nov 2006, **invited talk.**

[Enescu]

- Local cohomology and Frobenius depth, AMS Sectional Meeting, Florida International University, Miami, March 2006, **invited talk.**
- Almost regular sequences, AMS Sectional Meeting, San Francisco State University, San Francisco, April 2006, **invited talk**
- On almost regular sequences, Homological Conjectures in Commutative Algebra Snowbird, Utah, May 2006, **invited talk.**
- Lower bounds on Hilbert-Kunz multiplicities, AMS Sectional Meeting, Salt Lake City, Utah, October 2006, **invited talk.**

[Hall]

- Polynomial extension of rational realizations of minimum rank matrices in a sign pattern class, Mid-Atlantic Algebra Conference, April 29, 2006, Harrisonburg, VA.
- Polynomial extension of rational realizations of minimum rank matrices in a sign pattern class, with special tributes to Miroslav Fiedler, 80th Birthday Meeting, June 12, 2006, Prague, Czech Republic.

[Han]

- Parametric latent class joint model for longitudinal biomarkers and recurrent events, Applied Statistics Symposium of International Chinese Statistical Association, June 15, 2006, Connecticut.
Mixtures-of-experts joint model for longitudinal biomarkers and recurrent events, Joint Statistical Meeting, Aug 8, 2006, Seattle, Washington.

[Hattingh]

- Total restrained domination in trees, 37th SE International Congress on Combinatorics, Graph Theory and Computing, Boca Raton, FL, USA, 2006 (with E. Jonck, E.J. Joubert and A.R. Plummer).
- Nordhaus-Gaddum results for restrained domination and total restrained domination in graphs, 19th Cumberland Conference on Graph Theory, Combinatorics, and Computing, Johnson City, TN, USA, 2006 (with E. Jonck, E.J. Joubert and A.R. Plummer).
- Restrained domination in graphs, International Conference on Discrete Mathematics (ICDM 2006), Bangalore, India, December 2006, **invited talk**.

[Li]

- Rational realization of the minimum rank of a sign pattern, International matrix theory conference, July 2006, Chengdu, China, **invited talk**.

[Liu]

- On Creating Model Assessment Tools Independent of Sample Size, ENAR, 2006.
- Model selection approaches independent of sample size, Joint Statistical Meetings, 2006.

[Miller]

- Redesign of College Algebra and Precalculus: An Analysis of Results, PRISM Institute, Cordele, GA (with M. Alexander, B. McPhail, and N. Patterson).
- The Effects of Undergraduate Mathematics Course Redesign on Student Achievement, PMENA 2006, Merida, Mexico ((with M. Alexander, B. McPhail, and N. Patterson).

[Montiel]

- The Relationship Between Students' Understanding of Functions in Cartesian and Polar Coordinate Systems, Research in Undergraduate Mathematics Education Conference, San Diego, California (with Draga Vidakovic, Nikita Patterson and Tangul Uygur)

[Patyi]

- Fifth Conference on Function Spaces, Southern Illinois University, Edwardsville, Edwardsville, IL, (20'), May 2006.
- Conference on Banach spaces and their Applications in Analysis, in honor of Nigel Kalton's 60th birthday, Miami University, OH, (20'), May 2006.
- Conference on Banach Space Theory: Classical Topics and New Directions, Special Session: Polynomials on Banach Spaces, Caceres, Spain, (20') (Invited but unable to attend), Sep 2006.

[Qin]

- Pseudo Empirical Likelihood Based Confidence Intervals for a ROC curve, 2006 WNAR/IMS Meeting, Flagstaff, Arizona, USA, June 27-30, 2006.
- Bootstrap Confidence Intervals for the Area under the ROC Curve, JSM 2006, American Statistical Association, Seattle, USA, August 6-10, 2006.
- Empirical Likelihood Based Confidence Intervals for the Sensitivity at a Fixed Level of the False Positive Rate, **invited talk** at the School of Mathematics, Georgia Institute of Technology, Atlanta, USA, November 1, 2006

[Shilnikov]

- Annual AMS meeting, Applications of the Poincar'e mapping technique to analysis of neuronal dynamics, with A. Shilnikov, P. Channell and G. Cymbalyuk, San Antonio TX, January 12-15, 2006.
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- Shilnikov, P. Channel and G. Cymbalyuk (2006) Methods of qualitative theory for bursting rhythmogenesis, **Invited**. 6th Crimean School and Workshops Nonlinear Dynamics, Chaos, and Applications Workshop 1: Stochastic and Chaotic Dynamics in Action: from Laser to Brain, from Communication to Medicine, May 15-19, 2006.
- Origin and Regulation of Bursting Activity in Neurons. Homoclinic chaos on a spike adding route into bursting in a neuronal model, with P. Channell and G. Cymbalyuk Atlanta, April 6-7, 2006.
- K. Mokhov, A. Shilnikov, G. Cymbalyuk. A model of long period bursting activity. Presented as a poster at "Origin and Regulation of Bursting Activity in Neurons", Atlanta, April 6-7, 2006.
- G. Cymbalyuk, J. Bates, T. Malashchenko and A. Shilnikov (2006) Bifurcations and regulation of bursting activity. Presented as a talk at "Origin and Regulation of Bursting Activity in Neurons", Atlanta, April 6-7, 2006.
- Origin and Regulation of Bursting Activity in Neurons Atlanta, GA, April 6-7, 2006 Organizers: R. Calabrese (Emory), G. Cymbalyuk and A. Shilnikov (GSU). Scientific Committee: I. Belykh, D. Edwards, P. Katz (GSU)
- SENN, Biophysical Mechanisms Controlling Bursting Activity in a Neuron Model, with G. Cymbalyuk, P. Channell, J. Bates, T. Malashchenko GSU, Atlanta, April 29-30, 2006.
- SENN, Applications of the Poincare mapping technique to analysis of neuronal dynamics, with P. Channell, G. Cymbalyuk, GSU, Atlanta, April 29-30, 2006.
- SENN, A model of long period bursting activity. with K. Mokhov and G. Cymbalyuk, GSU, Atlanta, April 29-30, 2006.
- Annual AMS meeting, Applications of the Poincar'e mapping technique to analysis
- P. Channel, G. Cymbalyuk and A. Shilnikov (2006) Applications of the Poincare mapping technique to analysis of spike adding. CNS-2006, Edinburgh, UK, July 16-20, 2006.
- G. Cymbalyuk, R. Calabrese, A. Olypher, and A. Shilnikov (2006) Regulation of bursting activity of simple units of CPGs. CNS-2006, Edinburgh, UK, July 16-22, 2006.

- P. Channel, G. Cymbalyuk and A. Shilnikov, Mapping reduction of voltage dynamics in a Hodgkin-Huxley type model. Neuroscience Meeting, Atlanta, October 14-18, 2006.

[Smirnova]

- R.A. Renaut, T. Khan and A.B. Smirnova 'Parameter Decomposition for Iteratively Regularized Gauss Newton Solutions in Optical Tomography', 9th Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, April 2-7, 2006.
- A.B. Bakushinsky and A.B. Smirnova 'On application of generalized Gauss-Newton's schemes to inverse problem in Optical Tomography', International Conference 'Tikhonov and Contemporary Mathematics', Moscow, Russia, June 19-25, 2006.

[Stewart]

- A Generalized Isometric Arnoldi Algorithm, **invited special session talk**, SIAM Annual Meeting, Boston, 2006.
- The Isometric Arnoldi Algorithm and Structured Orthogonalization, **invited talk** at Gragg-Fest 06, a conference honoring William B. Gragg on the occasion of his seventieth birthday, Monterey, 2006.

[Vidakovic]

- Meagher, M., Cooley, L., Martin, W., Draga Vidakovic, & Loch, S. The Learning of Linear Algebra from an APOS perspective. Proceedings of the 28th annual meeting of the North American Chapter of the International Group for Psychology of Mathematics Education, in Merida, Mexico.
- Junor-Clarke, P. A., Vidakovic, D., & Thomas, C. D. Professional learning community: Power of collaboration between urban mathematics teachers and university professors. Proceedings of the 28th annual meeting of the North American Chapter of the International Group for Psychology of Mathematics Education, in Merida, Mexico.
- Miller, V. & Vidakovic, D. Teaching College Mathematics with Standards - Grading with Rubrics. PRISM Academy for Learning, Marietta Conference Center, June 16, 2006.
- Thomas, C. D., Junor Clarke, P.A., & Vidakovic, D. Significance of an Urban Collaboration on Mathematics Teaching. Proceedings of the American Educational Research Association annual conference in Chicago, Illinois, USA.
- Martin, W., Cooley, L., Vidakovic, D., & Loch, S. Learning Theory and Linear Algebra - Proceedings of the American Educational Research Association annual conference in San Francisco, California, USA.
- Vidakovic, D., Thomas, C. D. & Junor-Clarke, P. A.,. Impact of an urban collaborative in mathematics teaching. Proceedings of the American Educational Research Association annual conference in San Francisco, California, USA.
- Vidakovic, D., Cooley, L., Martin, W., & Loch, S.,. Linear Algebra: Connecting Teaching Practice and Learning Theory. Proceedings of the 4th annual meeting of the Hawaiian International Conference on Education. [CD-ROM], ISSN#1541-5880.

- Junor-Clarke, P. A., Thomas, C. D., & Vidakovic, D.. In search of identity: urban teachers' perspectives of high quality mathematics teaching. Proceedings of the 4th annual meeting of the Hawaiian International Conference on Education, [CD-ROM], ISSN#1541-5880.

[Yao]

- Frobenius test exponents for parameter ideals in generalized Cohen-Macaulay local ring, invited talk, Sectorial Meeting of the American Mathematical Society, San Francisco State University; CA, April 29—30, 2006.

[Zhao, Yi]

- VC-dimension of Uniform Hypergraphs, SIAM conference on Discrete Mathematics, Vancouver, Canada, June 2006, **invited talk**.

[Zhao, Yichuan]

- Statistical Analysis of High Dimensional Gene Data, IEEE, International Conference on Granular Computing, Atlanta, May 2006.
- Analysis of Longitudinal Data in the Case-Control Studies via Empirical Likelihood, University of Connecticut, June 14—17, 2006.
- Confidence Bands for Time-varying Hazard Ratios with Two-sample, International Chinese Statistical Association Applied Statistics Symposium, University of Connecticut, June 14—17, 2006.
- Empirical likelihood inference for censored median regression with weighted, 3rd International Biometric Conference, McGill University, Montreal, July 2006
- Regression analysis for long term survival rate, Annual Meeting of the American Statistical Association, Seattle, August 2006.

Colloquia and Seminar Presentations

[Arav]

- DARPA Workshop on State-Dependent Delays in Regulatory Networks, DIMACS Center, CoRE Building, Rutgers University, NJ, US, March 2006.
- The Fourth Annual Harriett J. Walton Symposium on Undergraduate Mathematics Research, Morehouse College, Atlanta, GA, USA, April 1, 2006.
- Origin and Regulation of Bursting Activity in Neurons Workshop, GSU, Atlanta, GA, USA, April 7-8, 2006.
- Center for Behavioral Neuroscience Spring Symposium on Brain Mechanisms, of Reward and Reinforcement, Emory University, Atlanta, GA, USA, May 2006.
- 36th Annual Meeting of the Society for Neuroscience, Georgia World Congress Center, Atlanta, GA, USA, October 14-18, 2006.

[Bakonyi]

- Bilkent University, Ankara, Turkey (seminar)
- Mathematical Institute of the Czech Academy (seminar)
- University of Newcastle, United Kingdom (seminar)

[Belykh]

- Department of Electronics and Information Systems, Politecnico di Milano, Italy, December, 20, 2006. Talk: "Network topology and synchronization".
- Center for Dynamical Systems and Nonlinear Studies, Georgia Institute of Technology, November 6, 2006. Talk: "Synchronization in complex networks of dynamical systems."

[Chen]

- Finding long cycles in 3-connected graphs, Clemson University, Clemson, February 2006.
- The El-Zahar Conjecture and the Surrounding Problems, University of Mississippi, Oxford, March 2006.
- Finding long cycles in 3-connected graphs, Central China Normal University, Wuhan, July 2006.
- Circumferences of 3-connected graphs, East China Normal University, Shanghai, July
- Finding Long Cycles in 3-connected Graphs, University of Central Florida, Orlando, October 2006.

[Enescu]

- Positive characteristic techniques in algebra and geometry, Colloquium, Miami University at Ohio, Feb 2006.
- Local cohomology and Frobenius depth, AMS Sectional Meeting, Florida International University, Miami. March 2006.
- Almost regular sequences, AMS Sectional Meeting, San Francisco State University, San Francisco, April 2006.
- On almost regular sequences, Homological Conjectures in Commutative Algebra Snowbird, Utah, May 2006.
- Lower bounds on Hilbert-Kunz multiplicities, AMS Sectional Meeting, Salt Lake City, Utah, Oct 2006.
- Lower bounds on Hilbert-Kunz multiplicities, Algebra Seminar, University of South Carolina, Nov 2006.

[Hall]

- Rational realizations of the minimum rank of a sign pattern matrix, invited colloquium presentation given at Emory University, March 23, 2006.
- An interlacing result on Normalized Laplacians, invited colloquium presentation given at Indiana State University, June 22, 2006.

[Hattingh]

- Nordhaus-Gaddum Results for Restrained Domination and Total Restrained Domination in Graphs, University of Tennessee at Chattanooga, June 2006.

[Hsu]

- On the Volume of the ROC Surface for Multi-ordered Responses, Tatung University, Taiwan, Republic of China, May 2006.

[Li]

- Rational Realization of the minimum rank of a sign pattern matrix, North University of China, Taiyuan, China, 2006.

[Miller]

- Teaching College Mathematics with Standards - Grading with Rubrics, University System of Georgia - PRISM Academy for Learning, Marietta, GA, July 2006.
- College Algebra & Precalculus Course Redesign Minigrant Report, University System of Georgia - PRISM Institute, Cordele, GA

[Patyi]

- Apr. 2006 Analysis and Differential Geometry Seminar, Emory University (50')
- May 2006 Geometric Analysis Seminar, Purdue University, West Lafayette, IN, (50')
- Oct. 2006 Algebra Geometry Physics Seminar, SUNY at Stony Brook, (50')
- Oct. 2006 Colloquium, Syracuse University (50')
- Nov. 2006 Analysis Seminar, University of Western Ontario, London, Ontario, Canada, (50')
- Dec. 2006 Colloquium, University of Western

[Shilnikov]

- Methods of qualitative theory for bursting rhythmogenesis, Nizhny Novgorod Mathematical Society, Nizhnii Novgorod, Russia, July 2006.
- Spike adding cascade toward bursting in neuronal models, The Institute of Medicine, Julich Research Center, Julich, Germany, Dec 2006.

[Smirnova]

- On Iteratively Regularized Numerical Procedures for Nonlinear Ill-Posed Problems, Arizona State University, Tempe, Arizona, Nov 2006.

[Yao]

- An embedding theorem for modules of finite projective dimension, seminar talk at the joint Georgia State University-University of South Carolina Algebra seminar, Department of Mathematics, USC, Columbia, SC, November 18-19, 2006.

[Zhao, Yi]

- Traces of finite sets, Georgia Tech, Atlanta, GA, Feb 2006.

- Traces of finite sets, California Institute of Technology, Pasadena, GA, March 2006.
- Codegree problems for projective geometries, Univ of Central Florida, Orlando, FL, Dec 2006.

[Zhao, Yichuan]

- Empirical likelihood inference for the calibration regression model with censored lifetime medical cost, Department of Mathematics, University of Mississippi, Oxford, Mississippi, Oct 2006.