Department of Mathematics and Statistics: Annual Report 2005

MS Theses

[Bakonyi]
Niki Kazumi_Stovall, ?, thesis.

[Davis]
Michael Aaron Skinner, *Multishift algorithms for the dense nonsymmetric eigenvalue problem*, thesis.

[Hall, Li]
Selcuk Koyuncu, *Rational realizations of the minimum rank of a sign pattern matrix*, thesis.

[Hsu]

- Yong Zhang, *A Logistic regression model selection problem through maximizing the area under the roc curve*, thesis.
- Eun-Kyung Cha, *The volume under the ROC surface for multi-ordered classes*, thesis.

[Qin]

- Lejla Hotilovac, *Bootstrap confidence interval estimation for the area under the ROC curve*, thesis.
- Ang Gao, *A comparative study for the inferences of mean residual life under random censorship*, thesis.

[Zhao] Ellen Bishop, *Rank regression inference via empirical likelihood,* thesis.

Publications

- T. I. Seidman, H. Schneider, and **M. Arav**, Comparison theorems using general cones for norms of iteration matrices, *Linear Algebra and its Applications* **399** (2005) 169-186.
- **M. Arav, F. Hall**, **S. Koyuncu, Z. Li**, and B. Rao, Rational Realizations of the Minimum Rank of a Sign Pattern Matrix, *Linear Algebra and its Applications* **409** (2005) 111-125.
- **M. Bakonyi** and T.Constantinescu, The completion number of a graph, *Linear and Multilinear Algebra* **53(3)** (2005) 189-192.
- **M. Bakonyi** and D. Timotin, Factorization of operator-valued functions on ordered groups, *Studia Math*. **169(3)** (2005) 205-303.
- **R. Belinsky**, F. González and J. Stahl, Optimal behavior and concurrent variable ratio – variable interval schedules, *Journal of Mathematical Psychology* **49(4)** (2005) 339-353.
- **G. Chen**, R.J. Gould, K. Kawarabayashi, F. Pfender and B. Wei, Graph minors and linkages, *J. of Graph Theory* **49(1)** (2005) 75–91.
- **Florian Enescu** and Kazuma Shimomoto, On the upper semi-continuity of the Hilbert-Kunz multiplicity, *Journal of Algebra* **285(1)** (2005) 222-237.
- Ian M. Aberbach and **Florian Enescu**, The structure of F-pure rings, *Mathematische Zeitschrift* **250(4)** (2005) 791-806.
- **Isobel Gaensler**, An Alternative Approach to Deriving Some Trigonometric Identities *Reflections* **30(2)** (2005) 26-28.
- G.S. Domke, **J.H. Hattingh** and L.R. Markus, On weakly connected domination in graphs II, *Discrete Mathematics* **305** (2005) 112-122.
- W. Goddard, **J.H. Hattingh** and M.A. Henning,Augmenting a graph of minimum degree 2 to have two disjoint total dominating sets, *Discrete Mathematics* **300** (2005) 82-90.
- **Z. Li, F. Hall**, J. Stewart, Reducible powerful ray pattern matrices,*Linear Algebra and Its Applications*l **399** (2005) 125-140.

- **N. Patterson, M. Alexander, V. Miller** and **J. Bevis,** Undergraduate Mathematics: The Road to Redesign. In G. M. Lloyd, M. R. Wilson, J. L. M. Wilkins, & S. L. Behm (Eds.), *Proceedings of the 27th annual meeting of the North American Chapter of the InternationalcGroup for the Psychology of Mathematics Education* [CD-ROM]. Eugene, OR: All Academic.October 20 – 23, 2005 (refereed)
- X.H. Zhou and **G.S. Qin,** A new confidence interval for the difference between two binomial proportions of paired data, *J. Statist Plan Infer* **128** (2005), 527-542.
- X.H. Zhou and **G.S**. **Qin,** Improved confidence intervals for the sensitivity at a fixed level of specificity of a continuous-scale diagnostic test, *Statistics in Medicine* **24** (2005) 465-477.
- **G.S. Qin** and M. Tsao, Empirical likelihood based inference for the derivative of the nonparametric regression function, *Bernoulli* **11** (2005) 715-735.
- **A.L Shilnikov** and G. Cymbalyuk, Transition between tonic-spiking and bursting in a neuron model via the blue-sky catastrophe, *Phys Review Letters* **94** (2005) and *Virtual Journal of Biological Physics Research*, February 2005.
- G. Cymbalyuk and **A.L Shilnikov**, Co-existent tonic spiking modes in a leech neuron model, *Journal of Computational Neuroscience* **18(3)** (2005) 255-263.
- **A.L.Shilnikov**, L.P. Shilnikov and D.V. Turaev, Blue sky catastrophe in singularly perturbed systems, *AMS Moscow Mathematical Journal* **5(1)** (2005) 205-218.
- **A.L. Shilnikov**, R. Calabrese and G. Cymbalyu, How a neuron model can demonstrate coexistence of tonic spiking and bursting? *Neurocomputing*, **65-66** (2005) 869-875.
- C. Mira and **A.L. Shilnikov**, Slow and fast dynamics generated by non- invertible plane maps, *Bifurcations and Chaos* **15(11)** 2005.
- **A.L.Shilnikov,** R. Calabrese and G. Cymbalyuk, Mechanism of bi-stability: tonic spiking and bursting in a neuron model, *Phys Review E* **71(1)** (2005) 205.
- **A.L Shilnikov,** L.P. Shilnikov and D.V. Turaev, On some mathematical problems in classical synchronization, *Nonlinear Oscillation and Waves*, Eds. Gaponov-Grekhov A.V. and Nekorkin V., IPFRAN, N.Novgorod, (2005) 426-450.
- A.B.Bakushinsky, T.Khan and **A.B.Smirnova**, Inverse Problem in Optical Tomography and its Numerical Investigation by Iteratively Regularized Methods. *Jour. of Inverse and Ill-Posed Problems* **13** (2005) 1-14.
- **A.B.Smirnova**, Regularized Quasi-Newton method with continuous inversion of F'+\varepsilon I for monotone ill-posed operator equations, *Contemporary Mathematics* **379** (2005) 113-124.
- A.B.Bakushinsky and **A.B.Smirnova**, On application of generalized discrepancy principle to iterative methods for nonlinear ill-posed problems. *Numerical Functional Analysis and Optimization* **26** (2005) 35-48.
- H. Elman, O. Ernst, D. O'Leary and **M. Stewart**, Efficient Iterative Algorithms for the Stochastic Finite Element Method with Application to Acoustic Scattering, *Computer Methods in Applied Mechanics and Engineering* **194** (2005) 1037 - 1055.
- C. Thomas, P.A. Junor-Clarke and **D. Vidakovic**, Effectiveness and quality of alternatively prepared mathematics teachers. In G. M. Lloyd, M. R. Wilson, J. L. M. Wilkins, & S. L. Behm (Eds.), *Proceedings of the 27th annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* [CD-ROM]. Eugene, OR: All Academic, October 20-23 (2005), Roanoke, Virginia, USA. (5 pages).
- D. Mubayi and **Y. Zhao** , Non-uniform Turán-type problems, *Journal of Combinatorial Theory* A **111(1)** (2005), 106-110.
- **Y. Zhao** and **Y. S. Hsu**, Semiparametric analysis for additive risk model via empirical likelihood, *Communications is Statistics--Simulation and Computation* **34** (2005), 135-143.
- I.W. McKeague and **Y. Zhao,** Comparing distribution functions via empirical likelihood, *International Journal of Biostatistics* **5** (2005) 1-18.
- **Y. Zhao** and Z. Xu, Inference for the mixed discrete and continuous Cox regression model

- via empirical likelihood, *Advances and Applications in Statistics* **5** (2005), 145-157.
- **Y. Zhao** and Z. Xu, Empirical likelihood Inference for the additive-multiplicative hazard model, *Far East Journal of Theoretical Statistics* **16** (2005) 105-112.
- Y. Qiu, Y.Q. Zhang and **Y. Zhao,** Statistical interval-valued fuzzy systems via linear regression, *Proc. of IEEE-GrC* (2005), 229-232, Beijing, July 25-27.
- **Y. Zhao** Regression analysis for long-term survival rate via empirical likelihood *Journal of Nonparametric Statistics*. **17** (2005) 995-1007.

Presentations at Professional Meetings

[Alexander]

- "Undergraduate Mathematics: A Road to Redesign", The Joint Meetings, January, 2005, Hyatt Regency, Atlanta, GA.
- "Designing Companion Freshman Learning Communities at Two- and Four-Year Institutions" , Bill Fritz, Nannette Commander, Maria Valeri-Gold, Marissa McNamara, Ted Wadley, Elizabeth Molloy & Margo Alexander, FYE, February 2005, Hyatt Regency, Phoenix, AZ.
- "So What Does That Grade of "A" Mean? Developing Uniform Assessment ", V. Miller & M. Alexander, PRISM Institute, February 2005, Savannah, GA, **invited.**
- " Redesigning College Algebra & Precalculus", R2R, June, 2005, Baltimore, MD, **invited**.
- "Redesigning Assessments with Electronic Portfolios", M. Alexander & C. Maharaj, 2nd Southern Regional Learning Communities Conference, October 2005, GSU Student Center, Atlanta, GA.
- "The Extra MILE: Results of a College Algebra Course Redesign ", GCTM, October, 2005, Rock Eagle, GA.
- "The Extra MILE: Results of a College Algebra Course Redesign", PMENA, October, 2005, Roanoke, VA.
- "Redesigning College Algebra and Precalculus", M. Alexander, R. Henry and D. Vidakovic, Education Trust Conference, November 2005, Grand Hyatt, Washington DC
- "The Road to Redesign in College Algebra and Precalculus", Pearson Education Technology Workshop, October, 2005, Phoenix, AZ **invited.**.

[Arav]

- The 2005 International Haifa Matrix Theory Conference, Comparison Theorems using General Cones for Norms of Iteration Matrices, Technion, Haifa, Israel, January 3-7, 2005, **invited talk.**
- Symposium, Matrix Theory Symposium in Honor of Dr. Jean H. Bevis, Inequalities for Norms of Iteration Matrices using General Cones, Georgia State University, GA, USA, May 28, 2005, **invited talk**.
- Bio-mathematics Seminar at the conference of Personalized Medicine Europe: Health, Genes & Society, Math Models in Biology, Tel-Aviv University, Tel-Aviv, Israel, June 21, 2005, **invited talk**.

[Bakonyi]

- Extensions of Positive Definite Functions Groups, International Linear Algebra Symposium, Regina, Canada.
- Extensions of Positive Functions on Free Groups, International Workshop on Operator Theory and Applications, University of Connecticut, Storrs, **invited talk**.

[Belinsky]
An example of Applied Calculus in Behavioral Psychology. Joint Mathematics Meetings. Atlanta, Jan. 5-8, 2005

[Chen]

- Hamiltonian Cycles with Small Even Chords,. Joint Mathematics Meetings Atlanta, GA, January.
- Characterizations of 1,k-Bar Visibility Trees, Graph Theory with Altitude Conference – in Honor of Joan P Hutchinson on the Occasion of her 60th Birthday, Denver, CO, May.
- The El-Zahar Conjecture and the Surrounding Problems (one hour plenary talk), Japan Workshop on Graph Theory and Combinatorics 2005 – in honor of Hikoe Enomoto's 60th birthday, Yokohama, Japan, June.
- Predicting Calcium Binding Sites—A graph theory and geometry approach, GSU MBD day, May.
- Predicting Calcium Binding Sites, GSU MBD recruiting day post, March.

[Enescu]

- Minnowbrook workshop on Commutative Algebra hosted by Syracuse University, Localcohomology and the Cohen-Macaulay property, (prepared with Sara Faridi), August 9, 2005, **invited talk.**
- Amer. Math. Society Sectional Meeting, Bard College, Local cohomology and F-stable primes, October 9, 2005, **invited talk.**

[Hattingh]

- 36th SE International Congress on Combinatorics, Graph Theory and Computing, Boca Raton, FL, USA, 2005 Trees with equal domination and restrained domination numbers, contributed talk.
- 18th Cumberland Conference on Graph Theory, Combinatorics, and Computing, Huntsville, AL, USA, 2005 The L(d,1)-hole index of paths and cycles, **invited talk**.

[Hall]

- Idempotents and generalized inverses of nonnegative sign pattern matrices, contributed presentation given at the joint AMS-MAA Annual Meeting, January 6, 2005, Atlanta, GA.
- An interlacing result on Normalized Laplacians, **invited talk** given at the American Mathematical Society Sectional Meeting, Oct 22, 2005, Lincoln, NE.

[Li]

- Sign Patterns That Almost Require a unique Rank, **invited talk** at a special session of the AMS Central Regional Meeting, Lincoln, Oct. 2005.
- Rational Realizations of Minimum Ranks of Sign Patterns, **invited talk** at the Minisymposium Spectral Properties of Families of Matrices Described by Patterns or Graphs, Twelfth International Linear Algebra Society Conference, Regina, June 2005.
- Can the Minimum Rank of a Sign Pattern Always Be Achieved by a Rational Matrix?, Brualdi-fest : Linear Algebra, Graph Theory and Combinatorics, Madison, May 2005.

[Liu]
Assessing Mul tinomial Models using Semiparametric Tolerance Region and Sample Size Index", Joint Statistica l Meetings, August, 2005, Minneapolis, MN

[Miller] Miller, V., Alexander, M (2005), So What Does that Grade of A Mean? Developing Uniform Assessment. PRISM State-wide Institute, February 25-27, 2005, Savannah, GA. **Invited**.

[Patterson]

- Patterson, N., & Okoka, C. (2005). Unpacking the GPS for Mathematics: Activities for Middle Grades Teachers Presented at the 46th Annual Georgia Mathematics

Conference, Georgia Council Teachers of Mathematics, Eatonton, GA. October 20 - 22.(Refereed, contributed).

- Vidakovic, D., Miller, V., Patterson, N., McPhail, B., & Myers, C. (2005). Redesigning College Algebra and Precalculus. Presented at the 46th Annual Georgia Mathematics Conference, Georgia Council Teachers of Mathematics, Eatonton, GA. October 20 - 22. (Refereed, contributed)
- Patterson, N. A Case Study of the Effects of Teachers' Beliefs on Students' Use of Multiple Representations. Presented at the Infinite Possibilities Conference, Spelman College, Atlanta, GA. April 1-2, 2005. (contributed, refereed)
- Patterson, N. Going the Extra MILE: Results of a College Algebra Course Redesign.Georgia Perimeter College Mathematics Conference, Lawrenceville, GA. February 18-19.

[Qin]

- New Confidence Intervals for the Difference between Two Sensitivities at a Fixed Level of Specificity, **invited talk** at ICSA 2005 Applied Statistics Symposium**,** Washington DC, USA, June 12-15, 2005.
- Empirical Likelihood Inference for the Mean Residual Life under Random Censorship, Contributed presentation at ICSA 2005 Applied Statistics Symposium**,** Washington DC, USA, June 12-15, 2005.
- Empirical Likelihood-based Inference for the Area Under the ROC Curve, Contributed presentation at JSM 2005, American Statistical Association, Minneapolis, USA, August 7-11, 2005.
- Biomedical Nonlinear Models, Biometrics Section, Chair, JSM 2005, American Statistical Association, Minneapolis, USA, August 7-11, 2005.
- Empirical Likelihood-based Inference for the Area Under the ROC Curve, Contributed presentation at the joint meeting of CSPS/IMS, Peking University, Beijing, China, July 9-12, 2005.

[Shilnikov]

- Neuroscience Meeting, Bifurcations giving rise to Bursting Activity in a Neuron Mode*,* with Channell P., Malashchenko T. and Cymbalyuk G., Washington, DC, November 12-16, 2005 (Contributed)
- Neuroscience Meeting, Regulation of Calcium Driven Bursting Activity in a Neuron Model, with Mokhov K., and Cymbalyuk G., Washington, DC, November 12-16, 2005 (Contributed)
- 2005 Fall Central Section Meeting: Special Session in Mathematical Ecology, Multistability and map reduction in a neural model, Lincoln NE, October 21-23, 2005 (**Invited**)
- Conference on control and synchronization of dynamical systems, Homoclinic saddle-node cycles in a Hodgkin-Huxley type model of neurons, León, México, October 4-7, 2005 (**Invited**)
- SIAM Conference on Applications of Dynamical Systems, Complex Dynamics of Two Time Scale Neuron Models, with Cymbalyuk G, Salk Lake City, Utah, May 22-26, 2005. A coorganizer of a mini-symposium Complex dynamics of systems with multiple time scales (Organized and contributed)
- GSU biotech symposium, Implementation of neuronal models, dynamic clamp, and tools for the hybrid system analysis using FPGA technology, with Bourgeois A. and Cymbalyuk G., Atlanta, June 5, 2005 (Contributed)
- Calcium Club Meeting, Regulation of Calcium Driven Bursting Activity, with Mokhov, K. and Cymbalyuk G., Atlanta, May 1-2, 2005 (Contributed)
- Dynamical Systems in Neuroscience, Canard torus bifurcation in a two time scale neuron model, with Cymbalyuk G, AMS, Santa Barbara, April 16-17, 2005 (**Invited**)

[Smirnova]

On application of generalized discrepancy principle to iterative methods for 2D inverse gravimetry problem, International Conference on Applied Inverse Problems, Royal Agricultural College, Cirencester, UK, June 26-30, 2005, (contributed talk).

[Vidakovic]

- Martin, W., Edwards, B., & Vidakovic, D. (2005). Research on the Teaching and Learning of Undergraduate Mathematics. **Co-organized a contributed paper session** for the Winter Joint AMS/MAA Meetings, Atlanta, GA, January 5-8.
- Stenger, C., Vidakovic, D., & Weller, K. (2005) Student's conceptions of infinite iteration: A follow-up study. Presented at the SIGMAA on RUME conference, Phoenix, AZ, February 24-27.
- Junor-Clarke, P., Thomas, D. C., Vidakovic, D. (2005). Identifying characteristics of high quality urban mathematics teachers: A phenomenological approach. AERA 86 Annual Convention, April 11-15, Montreal, CA.
- Alexander, M., Henry, R., & Vidakovic, D. (2005). Increasing student success in college mathematics: The impact of redesigning college algebra and pre-calculus courses. Presented at the Sixteenth Education Trust National Conference, November 3-5, 2005**,** Washington, D**C**

[Yi Zhao]

- On the VC-dimension of Uniform Hypergraphs, AMS Eastern Sectional Meeting #1009, Annandale-on-Hudson, NY, October 2005, **invited talk.**
- On the traces of complete hypergraphs, Workshop on Extremal Combinatorics, Carnegie Mellon University, May 2005

[Yichuan Zhao]

- Analysis of Longitudinal Data in the Case-Control Studies via Empirical Likelihood, Twelfth International Conference of the Forum for Interdisciplinary Mathematics on Statistics, Combinatorics, Mathematics and Applications, Auburn University, December, 2005 (with W. Jian), contributed talk.
- Empirical Likelihood*,* Twelfth International Conference of the Forum for Interdisciplinary Mathematics on Statistics, Combinatorics, Mathematics and Applications, Auburn University, December, 2005, **invited talk**.
- Analysis of Data with High Dimensional Covariates via PLS, The Second SECABC Fall Workshop on Biocomputing, Georgia State University, October, 2005, contributed poster.
- Inference for the Mean Residual Life Function, Annual Meeting of the American Statistical Association, August 2005, contributed talk*.*
- Statistical Interval-Valued Fuzzy Systems via Linear Regression, IEEE International Conference on Granular Computing, Beijing, 2005 (with Y. Qiu, Y.-Q. Zhang), contributed talk.
- Inference for the Mean Residual Life Function, ICSA Applied Statistics Symposium, June 2005, contributed talk.
- Statistical Inference for the AFT Model, University of Florida Seventh Annual Winter Workshop:Longitudinal Data Analysis, January, 2005, contributed poster.

Colloquia and Seminar Presentations

[Arav]

- Seminar in Bio-mathematics, Math Models in Biology, **invited talk**, Haifa University,Haifa, Israel, August 17, 2005.
- Applied Math and Scientific Computing Seminar, The Recursive Inverse Eigenvalue Problem, **invited talk**, Temple University, PA, USA, November 23, 2005.

[Bakonyi]

- Extensions of Positive Definite Functions on Groups, Georgia Institute of Technology (seminar).
- Extensions of Positive Definite Functions on Groups, Drexel University (colloquium).

[Chen]
- Problems in Graph Theory, The Mathematics and system Science Institute, Chinese Academy of Sciences, Beijing, China, July.
- The El-Zahar Conjecture and the Surrounding Problems, East China Normal University, Shanghai, China, August.
- Cycle and Paths in Graphs, a series of one week talks at Huazhong Normal University, Wuhan, China, July.

[Enescu]
- Ideals and cones, Algebra Seminar, Emory University, Atlanta, April 8, 2005, **invited talk**.
- Local Cohomology and F-stable primes, Commutative Algebra Seminar, University of Michigan, October 22, 2005, **invited talk**.
- Radu-Andre homomorphisms and their applications, Spring Lecture Series in Tight Closure Theory, University of Arkansas, April 14 2005, contributed talk.

[Li]
Rational Realizations of the Minimum Ranks of Sign Pattern Matrices, Lanzhou University, Lanzhou, July 2005.

[Qin]
Empirical Likelihood-based Inference for the Area Under the ROC Curve, invited talk at the Department of Mathematics, Tongji University, Shanghai, China, June 23, 2005.

[Shilnikov]
- The Bifurcation Analysis of Neuronal Rhythmogenesis, Neurons & Networks Research Talk, Brains & Behavior Program, 441 NSC, GSU, September 18, 2005.
- Homoclinic saddle-node periodic orbits in singularly perturbed systems of Hodgkin-Huxley type, Ben-Gurion University, Israel, March 10, 2005.
- Saddle-node periodic orbits in singularly perturbed systems of Hodgkin- Huxley type, Weizmann Institute, Israel, March 9, 2005.

[Smirnova]
New iteratively regularized methods for inverse problem in diffusion based optical tomography, Numerical Analysis Seminar, Clemson University, South Carolina, August 2005.

[Yi Zhao]
- Recent development on the Regularity Lemma, UIC, January 2005 (seminar)
- The Regularity Lemma and its applications", New Mexico Tech, January 2005 (colloquium).

[Yichuan Zhao]
Inference for the mean residual life function and its application, Department of Mathematics and Statistics, University of South Alabama, March, 2005.

Grants

NAME	GRANT	TYPE	PERIOD	AMOUNT
M. Alexander	FLC: Eportfolio Chalk&Wire	Internal	6/2005-	$2,000

			12/2005	
M. Alexander	Pearson Education Technology: Funded Travel Award to Workshop	External	10/2005	$1,000
M. Alexander	R2R funded Travel Award to Annual meetings/workshop	External	6/2005	$1,000
M. Alexander	Travel support by Willey to Focus Group meeting Phx, AZ	External	10/2005	$900
M. Arav	Travel Grant to The 2005 International Haifa Matrix Theory Conference	External	2005	$400
M Arav	NSF-AWM Travel Grant for Women Researchers	External	2005	$500
M. Arav	European Science Foundation Grant, for hotel and transport expenses at the conference: Personalized Medicine Europe: Health, Genes & Society Tel-Aviv University, Tel-Aviv,	External	2005	$500
M. Bakonyi	Factorization, Extension, and Interpolation Problems for Operator-Valued Functions on Groups Co-PI	External	08/15/03-07/31/06	$28,100
G. Chen and A. Smirnova	GSU Faculty Scholarship Mentoring Grant Pilot Project, Numerical Investigation of Inverse Problem in Optical Tomography as Mentor (with Alexandra B. Smirnova as Mentee)	Internal	12/2004-12/2005	$6,000
G. Chen	P20 NIH grant – Georgia State University, Predicating Calcium-binding sites with graph theory algorithm II, PI (with Jenny Yang)	Internal	6/2005-6/2006	$15,000
G. Chen	National Science Foundation, DMS-0500951, Graph Computing on Finding Long Cycles and Small Dense Subgraphs with Applications ($99,998)	External	6/2005-6/2008	$99,998
G. Chen	The Centers of Disease Control and Prevention Seed Grant, An Interactive Decision-Support Tool to Maximize Chlamydia and Gonorrhea Screening Resources: A Means to Reduce Disparities in STD Burden. PI, (with Guoyu Tao and Tom Gift)	External		$60,000
G. Chen	National Security Agency, Problems Surrounding Graph Minors and Connectivities, PI	External	12/2003-12/2005	$30,017
G. Chen	Natural Science Foundation of China, Wuhan International Conference on Structure ¨ Graph Theory, PI (with Zhiquan Hu)	External	03/2005-07/2005	Y100,000
F. Enescu	Commutative Algebra, Number Theory and their Applications to Digital Design Verification	Internal	07/01/2005-06/30/2006	$ 8,600
F. Enescu	A new theoretical and algorithmic framework for RTL datapath verification using polynomial algebra over finite rings, grant awarded by the NSF	External	08/01/2005-07/31/2006	$36,190

P. Ghosh	NIH-NIAID Hierarchical Nonlinear Models in Pharmacology of HIV	External	2006-2009	$96,000
Y. Hsu	Statistical Requirements for Quality Control Impementation on Anniston Data	External	October 2005 to August 2006	$30,000
Y. Hsu	Cluster Analysis and Validation of the Spectroscopic Evaluation of Cervical Cancer, Spectrx Inc.	External	July 2005 to May 2006	$15,104
Patterson, N.(PI), Miller, V (Co-PI)., Alexander, M. (Co-PI)	Research on College Algebra and Precalculus Course Redesign. PRISM Institute Mini-grant	External	1/2006 – 8/2006 2006	$11,775.
Patterson, N., Bevis, J., Miller, V., Alexander, M.	Undergraduate Mathematics—A Road to Redesign. PRISM Institute Mini-grant.	External	10/2004 – 12/2005	$10,000
I. Patyi	Research Initiation Grant	Internal	07/01/2005-06/30/2006	$6,000
G. Qin	GSU Research Initiation Program: Empirical Likelihood Based Interval Estimation for ROC Curves	Internal	07/01/2005-06/30/2006	$8,500
G. Qin	IMS travel award July 9-12, 2005	External	July 9-12, 2005	$250
G. Cymbalyuk G (PI) and A. Shilnikov (Co-PI)	The Bifurcation Analysis of Neuronal Rhythmogenesis, Brains & Behaviors program, $30,000.	Internal	2005-2006	$30,000
Cymbalyuk G. and Shilnikov A. (PI),	Cymbalyuk G. and Shilnikov A. (PI), Applications of the Poincaré mapping technique to analysis of neuronal dynamics, Brains & Behaviors program	Internal	2005-2006	$23,000
Pallas S. (PI), Prasad S. and Shilnikov A. (Co-PI)	Pallas S. (PI), Prasad S. and Shilnikov A. (Co-PI) Modeling circuits for stimulus velocity tuning in the superior colliculus, Brains & Behaviors program	Internal	2005-2006	$30,000
A. Bourgeois (PI), G. Cymbalyuk G. and A. Shilnikov (Co-PI)	Implementation of neuronal models, dynamic clamp, and tools for the hybrid system analysis using FPGA technology, P20 Planning Grant, NIH, 2005-2006, DLN55, $51,000	External	2005-2006	$51,000
G. Cymbalyuk and A. Shilnikov	Brains & Behaviors research supplement	Internal	2005-2006	6,000
A. Smirnova	Theoretical and Numerical Investigation of dynamical systems method for solving linear and nonlinear ill-posed problems', DMS Computational Mathematics, NSF	External	2002-2005	$72,300

D. Vidakovic (PI) and V. Miller (co-PI)	Extending THE MILE: Instructional Professional Development Program. PRISM Mini-grant	External		$8,200.00
D. Vidakovic	PRISM's Mathematics Summer Academy for Teachers (MSAT)	External		$1,875.00
C.Thomas (PI), P. Junor. & D. Vidakovic (Co-PI).	Robert Noyce Urban Mathematics Educator Program (UMEP). NSF Robert Noyce Scholarship Program	External	2005-2009	$ 470,000.00
C. Thomas (PI), P. Junor, D. Vidakovic, (Co-PI) and A. Epps.	Urban Teacher-Researcher Collaborative. Improving Teacher Quality Grants Program, The University of Georgia, Athens, GA.	External	2004-2005	$35,816.00
D. Vidakovic	Workshop for Atlanta Public School Teachers, Mathematics and Science Academy for Teachers: High-School Geometry Strand, PRISM funded	External		$1,785.00
D. Vidakovic	Travel support by MAA to the RUME conference, February 2005, Phoenix, AZ	External		$320
D. Vidakovic	Travel support by NSF to Linear Algebra professional development workshop for secondary teachers, March 2005, New York, NY	External		$900
D. Vidakovic	Travel support by NSF to Linear Algebra Project meeting, July 2005, New York, NY	External		$712
D. Vidakovic	Travel support by NSF to Advisory Board meeting for Reynolds & Fenton's Geometry project, January 2005, Louisville, KY	External		$1,200.00
D. Vidakovic	Travel support by Willey to College Algebra conference (focus group), Phoenix, AZ, May 2005, 23-25	External	$26,000	$900
Yi Zhao	Young Investigators Grant, National Security Agency H98230-05-1-0079 Exact Results in Extremal Graph Theory, PI	External	12/2004 – 12/2006	$26,000
Yichuan Zhao	NSF funded Travel Award to University of Florida Seventh Annual Winter Workshop: Longitudinal Data Analysis, January, 2005,	External		$400