

Welcome by Department Chair Nagaraj K. Neerchal

It is a pleasure to bring to you the Spring 2012 issue of the department newsletter. The Mathematics and Statistics Department hosted two large conferences; the Infinite Possibilities Conference, which is designed to support minority women in mathematics, and our 6th annual Probability and Statistics Day Conference. Both were a huge success! We've also had a number of students recognized throughout the semester at URCAD, the Graduate Research Conference, and Student Recognition Day for their academic and research achievements. Several faculty members have also been recognized this semester for their achievements in teaching and research. I am proud to say that we have a very talented and dedicated group of faculty and students in this department, and it showed this semester! Thank you to everyone who helped to make this spring yet another successful semester for the department.

News from the Graduate Program by Program Directors Muruhan Rathinam and Junyong Park

Congratulations to the following students who have completed their Master of Science degrees in Applied Mathematics or Statistics in May 2012! In Applied Mathematics: **Jesse Haas**, **Jonathan McHenry***, **Jyoti Saraswat***, **Serap Tay***, and **Ting Wang***. In Statistics: **Joshua Betz**, **Paula Borrego Garza**, **Sungwoo Choi***, and **Merve Gurlu**. The students with asterisks beside their names will be continuing their studies in the PhD program.

We also want to congratulate Dr. Muruhan Rathinam, who has taken over the Graduate Program Director, Applied Mathematics position from Dr. Kathleen Hoffman, who served in this position for the past four years!

And to all of our incoming graduate students, congratulations on acceptance and welcome to our program! We look forward to meeting you in the fall.

News from the MSGSA by President Andreas Papadopoulos

Over the past semester, the new MSGSA committee organized several events. We held monthly meetings over lunch to discuss our concerns and future events. We also had a wonderful movie meeting, where we showed "The Social Network," which gave students the chance to relax during the semester. Furthermore, the MSGSA spring departmental picnic was hosted outdoors at the APL Pavilion. Faculty, students, and staff attended the event with their families and Joshua and Marcus Austin provided some live music for us.



The MSGSA also worked to establish a new computer system in graduate student's office this semester. We would like to thank the department and **Dr. Neerchal** for providing the funding for this purpose.

We are committed to ensuring more events for next fall. And students, please join our Facebook group and visit our updated website.

*MSGSA 2012-2013 Officers (from left to right): **Maria Barouti**, Vice President; **Paula Borrego**, GSA Senator; **Joshua Austin**, Treasurer; **Andreas Papadopoulos**, President; **Andrew Raim**, Webmaster; and **Brittney Henegar**, Secretary*

News from the Undergraduate Program

Congratulations to the students who graduated this spring semester! Several students graduated from both the math and stat programs: 35 Math B.S. students, 15 Math B.A. students, and two Stat B.S. students were awarded degrees this May. University honors recipients with Cum Laude honors include: **Kari Anderson, Kimberly Daniels, Martina Johnson, Sarah Naomi Spencer, Marie Steele, and John Zylstra**. University honors recipients with Magna Cum Laude honors include: **Julia Blucher, Amanda Harris, Narae Lee, Max Petulante, Adam Robinson, Jamahl Stokes, Laura Suckling, and Michelle Weiss**. University honors recipients with Summa Cum Laude honors include: **Ecaterina (Oana) Coman, Daniel Falk, Rachel Grissom, Leonid Kritz, Menal Modha, Michael Powers, and Lauren Won**.

The following students were also recognized for achieving departmental honors: **Ecaterina (Oana) Coman, Kimberly Daniels, Robert Forder, and Narae Lee**. Departmental honors are awarded to students who complete all major requirements with a GPA of 3.6 or higher, and who have also completed a senior thesis with an A or a B.

Mathematics and What it Means to be Human

Our own **Dr. Manil Suri** teamed up with English professor, **Dr. Michele Osherow**, last fall semester to co-teach a Humanities seminar for freshman students that combined two very different disciplines: humanities and mathematics. Dr. Suri's assistance to Dr. Osherow on a dramaturg assignment for the Folger Shakespeare Theatre led to the creation of this seminar titled, "Mathematics and What it Means to be Human." Dr. Osherow's discomfort with the subject of math with Dr. Suri's excitement over enriching these students' lives with it brought a tension to the classroom and made it a very interesting experience for students and instructors, alike. For instance, history and political science major Christine Cruz, stated in an article on UMBC.edu that "I was pretty cautious at first. As it turned out, math was so much more interesting than I gave it credit for. There is so much about it that actually applies to the humanities, and I discovered many connections between the two." These connections were explored through assignments such as readings and a class project combining the two disciplines wrapped up the seminar.



The two instructors of the course also experienced new aspects that they were not necessarily familiar with, including grading papers and dealing with the question of precision. From a mathematical standpoint, Dr. Suri was accustomed to having a concrete problem and concrete answer, whereas in the humanities, that type of precision does not exist in the same way. Dr. Osherow, quoted in the same article, explained that "it was an absolute challenge, but I am very proud to have participated in this seminar. I think that a place like UMBC, which so fosters interdisciplinary approaches to teaching and research, was the ideal place to do it."

For the full article on UMBC's home page, please see the following link:

http://www.umbc.edu/window/math_humanities.html. A short video accompanies this article, in which Dr. Suri and Dr. Osherow discuss the course and their experiences teaching it. A three-part series on this topic, written by them, will appear in *The Chronicle of Higher Education*.

News from the Council of Majors and Pi Mu Epsilon by Dr. John Zweck

The UMBC chapter of the National Mathematics Honors Society, Pi Mu Epsilon (PME), had a busy and productive semester. We held two professional development sessions for Mathematics and Statistics majors, one focused on careers and the other on graduate school. Both events featured pizza, always a draw card for students!

The careers event began with a snazzy overview of mathematics careers in industry and government presented by PME President **Lauren Won** and Secretary **Sean Leavy**. This was followed by a discussion with visiting panelists Kristina Bevec (U.S. Army Materiel Systems Advanced Analysis), Alison Ebaugh (Johns Hopkins Applied Physics Lab), and Dave Reed (Department of Defense). Kristina and Alison are both recent UMBC alums.

The graduate school event included reflections by **Drs. Susan Minkoff** and **Kalman Nanes** on their graduate school experiences and the qualities of good graduate programs and thesis advisors. We also heard from Mathematics graduate student **Bryce Carey** about the first year of grad school and from UMBC graduating seniors **Jamahl Stokes**, **Oana Coman** and **Rachel Grissom** on the process of applying to graduate school.

The PME officers for 2012-2013 are: **Sean Leavy**, President; **Ann Marie Weideman**, Vice President; **Sandya Lakkur**, Secretary; **Andrew Keegan**, Treasurer; and **Rachel Sandlain**, Webmaster. The PME faculty advisors are Dr. Kal Nanes and Dr. John Zweck.

Special thanks go to PME officers **Lauren Won** and **Sean Leavy** for their superb organization this Spring. Look out for several new PME initiatives in the Fall!

News from the SIAM Student Chapter by Vice President David Trott



During the Spring semester, the SIAM student chapter continued with the practice of hosting professional development sessions. On February 29th, we held a discussion on strategies and techniques for technical writing led by **Dr. Thomas Seidman** and **Dr. Bimal Sinha**. This session addressed questions such as what is the typical process of review, and offered advice on stylistic aspects like how to structure a paper and to ensure that it is readable. The second professional development session on April 18th focused on career opportunities in Mathematics and Statistics. Two speakers, Mr. Ben Cudia, from the National Security Agency, and Mrs. Sabira Vohra, who is a Senior Career Consultant from the UMBC Career Services Center, provided very useful information on how to search for a job as well as what questions one should ask a prospective employer. Lunch was provided at the end of the session, which gave students an opportunity to ask additional questions.

In late April, our SIAM chapter also participated in the 3rd Mid-Atlantic Regional Student Conference at Shippensburg University by contributing the design of the flyer advertising the conference. **Zana Coulibaly**, Webmaster of the SIAM Student Chapter at UMBC, was presented with the SIAM Certificate of Recognition for his dedicated work with the student chapter from its inception.

The chapter officers for 2011-2012 are: **Jyoti Saraswat**, President; **David Trott**, Vice President; **Jonathan McHenry**, Secretary; **Zois Boukouvalas**, Treasurer; and **Zana Coulibaly**, Webmaster. The chapter faculty advisor is **Dr. Jinglai Shen**. More information about our chapter and its activities can be found at the following website: <http://www.umbc.edu/studentlife/orgs/siam>

Kudos

- **Dr. Arthur Pittenger**, a recent retiree from the department, was appointed Dean Emeritus of Arts and Sciences. This designation is in recognition of his years of dedication, as well as his exemplary leadership during his tenure at UMBC.
 - **Mrs. Bonny Tighe** was honored this semester by the UMBC Chapter of Black and Latino Alumni (CBLA) at the Legends of Excellence Bruch and Awards event on March 31. The CBLA meets each December to select faculty members who have made extraordinary contributions to the lives of African-American and Latino students at UMBC. Mrs. Tighe was recognized along side **Ramona Arthur**, former Director of Off-Campus Student Services, **Norma Green**, former Coordinator of Student Activities, and **LaMont Toliver**, former Director of the Meyerhoff Scholars Program
 - *REU Site on HPC Renewed with 12 Supported Participants*
Since 2010, the department has hosted the NSF-funded REU Site: Interdisciplinary Program in High Performance Computing (www.umbc.edu/hpcreu), an 8-week summer Research Experience for Undergraduates (REU) on scientific, statistical, and parallel computing. The directors, **Dr. Matthias Gobbert** and **Dr. Nagaraj Neerchal**, are extremely pleased that the NSF has renewed the program for three years and that additional funding from the NSA enables us to support 12 participants each year.
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Faculty Research: Dr. Bimal Sinha

Dr. Bimal Sinha received the 2012 University System of Maryland Regents' Faculty Award for Excellence in Research. Dr. Sinha received this award, the highest honor bestowed by the Board of Regents to recognize exemplary faculty achievement in research, for his many accomplishments, international recognition in statistical research, and his unique role in providing expert advice to some key statistical issues arising at USEPA (U.S. Environmental Protection Agency). The award was presented to Dr. Sinha at Frostburg State University on April 13, in the presence of UMBC President **Dr. Freeman Hrabowski**. During the last thirty years, Dr. Sinha has worked extensively on many



aspects of theoretical and applied statistics, which can be broadly divided into the following categories: robustness of multivariate tests, multivariate outlier detections, linear models, asymptotic theory, statistical decision theory, multivariate analysis, statistical meta-analysis, ranked set sampling, and environmental statistics. In 2002, Dr. Sinha was awarded the Distinguished Achievement Medal Award, ASA Section on Statistics and the Environment, for his contributions to the area of environmental statistics. Dr. Sinha's most recent research contribution as a Research Mathematical Statistician at the US Census Bureau dwells upon developing statistical analysis of noise perturbed data to protect privacy and confidentiality of sensitive responses.

Dr. Sinha's articles have been published in a variety of journals over the years, including *Annals of Statistics* (1980, 1981, 1984, 1985, 1986, 1988); *Journal of Statistical Planning and Inference* (1987, 1995, 1999, 2004); *Canadian Journal of Statistics* (1988); *Sankhya* (1976, 1977, 1980, 1987, 1990); *Journal of the American Statistical Association* (1979, 1988, 1992, 1993); *Statistics and Decisions* (1982, 1986, 1987, 1990, 1992, 1996); *Journal of Multivariate Analysis* (1976, 1977, 1980, 1988, 1991); *Communications in Statistics* (1984, 1999); *Annals of the Institute of Statistical Mathematics* (1991, 1994, 2002); *Statistics & Probability Letters* (1991); *Journal of Statistical Research* (1994); *Journal of Applied Statistical Science* (1995, 1997, 1998), *Environmental and Ecological Statistics* (1999); *Handbook of Statistics* (17); *Journal of Chemometrics* (1991); *Calcutta Statistical Association Bulletin* (2000); *Journal of Statistical Studies* (2002); *Computational Mathematics and Modeling* (2003); *Proceedings of the International Conference on Environmental Issues* (2003); *Journal of Biopharmaceutical Statistics*; *Sankhya, Series B* (2012); and the *Journal of Official Statistics* (2011).

Dr. Sinha's research has also led to several published books including: *Robustness of Statistical Tests* (1989), *Statistical Tests for Mixed Linear Models* (1998), *Ranked Set Sampling: Theory and Applications* (2004), and *Statistical Meta-Analysis with Applications* (2008)

In addition to his years of research, Dr. Sinha has also made many contributions to our department. In 1985, he began his tenure at UMBC, and with the help of a handful of other faculty members, helped create and build the statistics program into what it is today. In 2007, our highly successful annual Probability and Statistics Day Conference began under his leadership and it has been continuously funded by the NSA. This conference brings students, faculty, and statisticians from all over the world together for a weekend of workshops, distinguished keynote speaker presentations, as well as student presentations, including oral and posters. Moreover, Dr. Sinha initiated an endowment fund for both undergraduate and graduate statistics students entitled the **Dr. Bimal and Mrs. Suchandra Sinha Endowment for Excellence in Statistics**. This year's recipients were Michelle Danaher (graduate) and John Zylstra (undergraduate).

We congratulate Dr. Sinha on his Board of Regents award, and thank him for his years of dedicated service to this department, students, and faculty.

Infinite Possibilities Conference by Dr. Susan Minkoff



Leaders across the United States have called for the country to produce more scientists, engineers and mathematicians. Yet, despite the fact that minorities comprise the fastest-growing groups in the country, they are the least represented in science and engineering careers. In mathematics, the disparity is particularly acute for underrepresented minority women. They account for less than 2 percent of all doctoral degrees awarded in mathematics each year, as well as less than 1 percent of incoming freshman majoring in the field.

On March 30 and 31, UMBC hosted the fourth Infinite Possibilities Conference (IPC) for minority women in mathematics and statistics, attracting 250 attendees from all over the country. The conference is designed to promote, educate, encourage, and support minority women interested in the mathematical sciences. Past conferences were held at Spelman College in 2005, North Carolina State University in 2007, and the University of California, Los Angeles in 2010.

Sue Minkoff, the local organizing chair for the conference and an associate professor of mathematics and statistics at UMBC, says “the event is designed to connect aspiring and early-career mathematicians with mentors and role models, who can address concerns the women may have about differences between themselves and traditional mathematicians. IPC provides students at the high school, undergraduate, and graduate levels with opportunities to interact with peers and more established female mathematicians in a supportive and collegial atmosphere.”

Hosting the conference also supports UMBC’s overall mission. “We hope that hosting the conference here at UMBC will help us in our continued efforts to recruit minority women in mathematics and statistics at the faculty, graduate, and undergraduate levels,” says **Nagaraj Neerchal**, professor and chair of UMBC’s Department of Mathematics and Statistics.

The agenda for the 2012 conference included keynote speakers, research talks, poster sessions, and panel discussions ranging from advice for graduate studies to navigating paths beyond the degree. Highlights of the conference included keynote addresses by Trachette Jackson from the University of Michigan, who spoke on mathematical modeling of tumors, Valeria de Paiva from Rearden Commerce who spoke on “Edwardian Proofs as Futuristic Programs,” and **Dr. Freeman Hrabowski**, President of UMBC, who spoke on “Inclusive Excellence and American Competitiveness: Expanding STEM Participation of Minorities and Women.”

The conference was preceded by a short course on mathematical biology held at UMBC, which was funded by the Mathematical Sciences Research Institute collaborative diversity program and organized by the Institute for Math and Its Applications at the University of Minnesota. There was also a special program for high school students and teachers on Saturday.

The Conference was sponsored by the Department of Mathematics and Statistics at UMBC, the National Science Foundation, the National Security Agency, and several corporations.

Student Kudos



Mathematics major, **Ann Marie Weideman**, was the first to be awarded the Michele P. Hayes Scholarship Endowment.

This award was established in 1998 by Michele P. Hayes, Class of '85. The endowment provides scholarship support to a student majoring in mathematics.

Ann Marie is currently a junior, who also tutors high school students in preparation for the SAT.

Photo: Michele P. Hayes (left) and Ann Marie (right) at the UMBC Scholarship Luncheon.

- One of our outstanding alumni, **Anthony Simms**, was awarded National Science Foundation Fellowship for Graduate study in Mathematics. He is currently pursuing his PhD at Rice University.
- **April Albertine**, a statistics graduate student, was awarded the National Science Foundation Graduate Research Fellowship to continue her PhD in statistics at UMBC.
- The results of the Putnam Competition are in: 4440 students participated, representing 572 schools. Our team of **Keegan Lee**, **Julia Blucher**, and **Michael Powers** paced 109th. Below are the scores and ranks of these students and other UMBC students who competed:

Scores/Ranks

Julia Blucher 22/240

Rockford Foster 10/792

Keegan Lee 1/1918

Michael Powers 1/1918

David Stonko 1/1918

Babru Joshi 1/1918

Tyler Beals 1/1918

(Everybody else 0/3407)

Undergraduate Research and Creative Achievement Day 2012

The Undergraduate Research and Creative Achievement Day (URCAD) was held on April 25 and, while it is open to all majors, this year's URCAD featured a number of mathematics and statistics students presenting both oral presentations and posters.

- **Sandya Lakkur**, Statistics B.S., presented on the topic of "Profile of Cognitive Impairments in Schizophrenia," and was mentored by Drs. Robert McMahon and Gregory Strauss.
- Jacquelyn Meisel, Bioinformatics & Computational Biology B.S., and **Kimberly Daniels**, Biological Sciences B.S., Mathematics B.S./Mathematics M.S., presented on the topic "A Mathematical Model of the Inactivation of Melanopsin," and were mentored by Drs. Phyllis Robinson and **Kathleen Hoffman**.
- **Amanda Harris**, Mathematics B.S., Education Certificate, presented on the topic "Increasing Homework Completion through Student Choice in Incentives," and was mentored by Dr. Linda Oliva.
- **Lisa Woroniecki**, Mathematics B.A., Education Certificate, and **Natalie Rau**, Mathematics B.A., presented on the topic "Does Consistent Classroom Closure Have a Positive Effect on Student Learning, Participation or Management?," and were mentored by Dr. Linda Oliva.

Graduate Research Conference 2012

Five graduate students participated in this year's Graduate Research Conference on April 27, giving both oral presentations and poster presentations.

Oral Presentations:

- **Joshua Austin**, Mathematics M.S., “Social Dynamics of Gang Involvement: A Mathematical Approach
- **Anna Sun**, Statistics Ph.D., with **Dr. Nagaraj Neerchal**, Yi Tsong, “Application of Multivariate Normal & Multivariate T-Distribution to the Clinical Trial Sample Size Calculation with Multiple Comparisons”
- **Andrew Raim**, Statistics Ph.D., “An Approximate Fisher Scoring Algorithm for Finite Mixtures of Multinomials”
- **James Travis**, Statistics Ph.D., with **Dr. Anindya Roy**, “A Bayesian approach to understanding the probability of zero rainfall”

Poster Presentation:

- **Nicole Massarelli**, Mathematics Ph.D., “Effect of Parity on Boundedness of Orbits in Lotka-Volterra Food Chains”

CNMS Student Recognition Day 2012

Several of our undergraduate and graduate students were honored at this year’s College of Natural and Mathematical Sciences Student Recognition Day on May 4. This year’s students were:

- **Michelle Danaher**, Outstanding Graduate Research in Statistics
- **Stephen Thompson**, Outstanding Graduate Research in Mathematics
- **Jonathan McHenry**, CIRC Consultant of the Year
- **Ecaterina (Oana) Coman, Daniel Falk, Rachel Grissom, Leonid Kritz, Menal Modha, Michael C. Powers, and Lauren Won**, Outstanding Graduating Seniors in Mathematics
- **John Zylstra**, Outstanding Graduating Senior in Statistics
- **Andreas Papadopoulos**, Outstanding Graduate Teaching Assistant in the Field of Statistics
- **Zois Boukouvalas**, Outstanding Graduate Teaching Assistant in the Field of Mathematics
- **Ecaterina (Oana) Coman, Kimberly Daniels, and Narae Lee**, Departmental Honors in Research



CIRC Activities: Spring 2012

The Center for Interdisciplinary Research and Consulting (CIRC), housed within the Department of Mathematics and Statistics at UMBC, provides mathematical and statistical consulting services for both on- and off-campus clients. CIRC is dedicated to supporting interdisciplinary research for both the UMBC campus community and the general public. In addition, CIRC strives to provide Mathematics and Statistics students with vital consulting experience needed for industry and academia jobs.

During the spring of 2012, CIRC, in cooperation with the UMBC Division of Information Technology, continued its series of free software workshops including SAS, SPSS, MS Excel, MS Access, and MATLAB. In addition to offering software workshops, CIRC was actively engaged in consulting projects. One project involved the detection of bovine lameness: time series data from a novel 3D force sensor was used to detect lameness in cows. This project is for Dr. Uri Tasch, and is being handled by Jonathan McHenry and Dr. Nagaraj Neerchal. Another project, handled by Brittney Walker, Merve Gurlu, and Dr. Liz Stanwyck, involves analysis of colorectal cancer data in the service of studying the relationship between Carcinoembryonic antigens (CEA), one of the most important bio-markers in the diagnosis of colorectal cancer, and other variables.

This year, Johnathan McHenry was honored as the CIRC Consultant of the Year for 2011/2012 at the Annual CNMS Student Recognition Day. Congratulations on this award! Through HPCF RA Andrew Raim, CIRC continued its close collaboration with the UMBC High Performance Computing Facility (www.umbc.edu/hpcf). Dr. Matthias Gobbert, chair of the HPCF user committee and co-director of CIRC completed his academic-year sabbatical at the University of Kassel in Germany, where he is expanding his research in parallel computing and fostering new collaborations. For more information on CIRC or to request services, visit our website at www.umbc.edu/circ.

6th Annual Probability and Statistics Day Conference

The Mathematics and Statistics Department held its 6th Annual Probability and Statistics Day Conference this year on April 20 and 21. This annual conference, funded by the National Security Agency (NSA), brought over 130 participants from 21 states and countries, representing 30 colleges and universities this year.

The event began on Friday afternoon with brief welcome by **Dr. Nagaraj Neerchal**, Department Chair, and **Dr. Bimal Sinha**, Conference Chair. The major attraction on Friday was the workshop delivered by Professor Jun Shao, of the University of Wisconsin at Madison, on the topic “An Introduction to Bootstrap and Its Applications.”

Saturday’s conference started with welcome address by **Dr. William LaCourse**, Dean of the College of Natural and Mathematical Sciences, and also by Dr. Neerchal and Dr. Sinha. Dr. Sinha outlined the growth of the statistics graduate program at UMBC starting from a meager setup back in 1985 to the current fully grown program, and thanked the UMBC administration for its support. He further recognized the contributions toward this phenomenal growth by all statistics faculty, past and present, and all statistics graduates from this program.

Keynote addresses delivered by Professor Robert Gibbons, of the University of Chicago, and Professor Nancy Flournoy, of the University of Missouri at Columbia, kicked off the morning session of the conference. This was followed by two parallel graduate student sessions where students from UMBC, as well as some local universities, made oral presentations. Six judges in each session evaluated the students’ research and made recommendations for two top awards in each session. Throughout the day, posters by graduate and undergraduate statistics students were on display and, again, several judges were invited to examine the contents and style of the poster presentations and make recommendations for four top winners.

After the lunch break and group photo session, the conference continued with the third keynote address by Professor John Bailer from Miami University, Ohio, followed by an International Panel of three invited speakers from Germany and Canada. During the UMBC alumni recognition and student award ceremony, Dr. Philip Rous, UMBC Provost, made some informative remarks about our university and our dynamic President, **Professor Freeman Hrabowski**. **Dr. Kofi Adragni** highlighted the professional accomplishments of some selected UMBC alumni who were greeted by the Provost and all of us. Three representatives from NSA and the MD Chapter of American Statistical Association (ASA) distributed the certificates and cash awards to the four student oral presentation winners and four student poster winners. The conference ended with dinner and a banquet speech by Dr. Bob Rodriguez, ASA current President of ASA.



Faculty and Graduate Student Publications 2011

- Alexanderian A., Gobbert, M.K.,** Fister, K.R., Gaff, H., Lenhart, S., and Schaefer, E. (2011). An Age-Structured Model for the Spread of Epidemic Cholera: Analysis and Simulation. *Nonlinear Analysis: Real World Applications*, 12, (no. 6), 3483-3498.
- Alexanderian, A., Rathinam, M., and Rostamian, R.** (2011). Irreducibility of a symmetry group implies isotropy. *Journal of Elasticity*, 102 (2), 151--174.
- Avdonin, S. and **Bell, J.** (2012). Determining a distributed parameter in a neural cable model via a boundary control method. *Journal of Mathematical Biology*, 65.
- Cipcigan, I. and Rathinam, M.** (2011). Uniform Convergence of Interlaced Euler Method for Stiff Stochastic. *Differential Equations*, 9, 1217-1252.
- Crosti, C., Duthinh, D., Harris, J., Phan, L.T., **Potra, F.A.**, and Simiu, F. (2011). Wind engineering in a multi-hazard context: probabilistic, synergy, and optimization issues. *Proceedings of the 13th International Conference on Wind Engineering, IAWE, Amsterdam*.
- Dutinh, D. and **Potra, F.** (2011). Probabilistic and Optimization Considerations in Multihazard Engineering. Vulnerability, Uncertainty, and Risk. *Analysis, Modeling, and Management*, 501-509.
- Gowda, M.S.** and Tao, J. (2011). The Cauchy interlacing theorem in simple Euclidean Jordan algebras and some consequences. *Linear and Multilinear Algebra*, 59, 65-86.
- Gowda, M.S.** and Tao, J. (2011). Some inequalities involving determinants, eigenvalues, and Schur complements in Euclidean Jordan algebras. *Positivity*, 15.
- Guler, O.** and Gurtuna, F. (2011). Symmetry of convex sets and its applications to the extremal ellipsoids of convex bodies. *Optimization Methods and Software*.
- Gurtuna, F., **Petra, C., Potra, F. A., Shevchenko, O., and Vancea, A.** (2011). Corrector-predictor methods for sufficient linear complementarity problems. *Computational Optimization and Applications*, 48 (3), 453-485.
- Hoffman, K.A. and Seidman, T.I.** (2011). A Variational Rod Model with a Singular Nonlocal Potential. *Archive for Rational Mechanics and Analysis*, 200, 255--284.
- Hoffman, K.A. and Seidman, T.I.** (2011). A Variational Characterization of a Hyperelastic Rod with Hard Self-Contact. *Nonlinear Analysis A: Theory, Methods, and Applications*, 74, 5388--5401.
- Hu, J., **Shen J.**, and Zhang, W. (2011). Generating Functions of Switched Linear Systems: Analysis, Computation, and Stability Applications. *IEEE Transactions on Automatic Control*, 56 (5), 1059-1074.
- Ivancik J., **Neerchal N.K.**, Romberg E., Arola D. (2011). On The Reduction in Fatigue Crack Growth Resistance of Dentin with Depth. *Journal of Dental Research*, 90 (8), 1031-1036.
- Jianbo L., Dyer R. M., **Neerchal N.K.**, Tasch U., and Rajkondawar, P.G. (2011). Diversity in the magnitude of hind limb unloading occurs with similar forms of lameness in dairy cows. *Journal of Dairy Research*, 78, 168--177.
- Kang, W.** and Ramanan, K. (2012). Asymptotic Approximations for Stationary Distributions of Many-Server Queues with Abandonment. *Annals of Applied Probability*, 22, 477-521.
- Krishnamoorthy, K., Mallick, A., and **Mathew, T.** (2011). Inference for the lognormal mean and quantiles based on samples with left and right type I censoring. *Technometrics*, 53, 72-83.

- Li, N., **Park, D.**, Sun, J., and Kim, K. (2011). Semiparametric transformation models for multivariate panel count data with dependent observation process. *The Canadian Journal of Statistics*, 39, 458-474.
- Lim, P., Kang, E., and **Park, D.** (2011). Robot-assisted total intracorporeal low anterior resection with primary anastomosis and radical dissection for treatment of stage IV endometriosis with bowel involvement: morbidity and its outcome. *Journal of Robotic Surgery*, 5, 273-278.
- Lim, P., Kang, E., and **Park, D.** (2011). A comparative detail analysis of the learning curve and surgical outcome for robotic hysterectomy with lymphadenectomy versus laparoscopic hysterectomy with lymphadenectomy in treatment of endometrial cancer: A case-matched controlled study of the first one hundred twenty two patients. *Gynecologic Oncology*, 120, 413-418.
- Lo, J. T.-H.** (2011). A Low-Order Model of Biological Neural Networks. *Neural Computation*, 23 (10), 2626-2682.
- Lo, J. T.-H.** (2011). A Low-Order Model of Biological Neural Networks for Hierarchical or Temporal Pattern Clustering, Detection and Recognition. *Proceedings on the 2011 International Joint Conference on Neural Networks IEEE Xplore*.
- Maggioni, F., Bertocchi, M., Allevi, E., **Potra, F.A.**, and Wallace, S.W. (2011). Stochastic second-order cone programming in mobile ad-hoc networks: sensitivity to input parameters. *Stochastic Programming, Applications in Finance, Energy and Logistics*.
- Malinovsky, Y.** and Rinott, Y. (2011). Best invariant and minimax estimation of quantiles in finite populations. *Journal of Statistical Planning and Inference*, 141, 2633-2644.
- Morel, J. G. and **Neerchal, N. K.** (2011). Sample Size Determination for Alternate Periods of Use Study Designs with Binary Responses. *Journal of Biopharmaceutical Statistics*, 22, 351-367.
- Motabar, P., Lefcourt, A., Tasch, U., Kim, M., **Rostamian, R.** (2011). Use of inertial properties to orient tomatoes. *Transactions of the ASABE*, 54 (2), 517--525.
- Park, D., Park, J.**, Zhong, X., and Sadelain, M. (2011) Estimation of Empirical Null Using a Mixture of Normals and its Use in Local False Discovery Rate. *Computational Statistics and Data Analysis*. 55, 2421-2432.
- Park, J.** and Davis, J.W. (2011). Estimating and testing conditional sums of means in high dimensional multivariate binary data. *Journal of Statistical Planning and Inference*, 141, 1021-1030.
- Park, J.**, Lim, J., and Lee, H. (2011). Spare computation in Markov Centrality. *Journal of Statistical Theory and Application*, 10, 99-113.
- Petra, N., Zweck, J., Minkoff, S.E.**, Kosterev, A.A., and Doty III, J.H. (2011). Modeling and design optimization of a resonant optoacoustic trace gas sensor. *SIAM Journal of Applied Mathematics*, 71 (1), 309—332.
- Petra, N., Zweck, J., Minkoff, S.E.**, Kosterev, A.A., and Doty III, J.H. (2011). Validation of a Model of a Resonant Optoacoustic Trace Gas Sensor. *Conference on Lasers and Electro-Optics, Baltimore, MD*.
- Previte, J.P., Sheils, N., **Hoffman, K.A.**, Kiemel, T., and Tytell, E. (2011). Entrainment Ranges of Forced Phase Oscillators. *Journal of Mathematical Biology*, 62, 589-603.
- Putta, V., Zhu, G., **Shen, J.**, and Hu, J. (2011). A Study of the Generalized Input-to-state L2-gain of Switched Linear Systems. *Proceedings of the 50th IEEE Conference on Decision and Control, Orlando, FL*, 435-440.
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