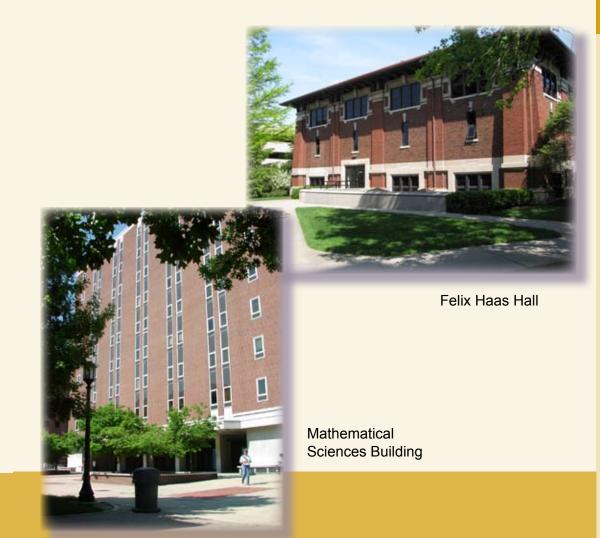


Summer 2010

Department of

Statistics Newsletter



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LETTER FROM THE DEPARTMENT HEAD

NEW HEAD OF STATISTICS



Dear Alums and Friends of Purdue Statistics,

I have had the pleasure of serving as head over the past 15 years for a department of outstanding faculty, staff, and students. After I step down as head on June 30, 2010, I am happy to announce that the department will be led on July 1 by one of those outstanding faculty members, Rebecca W. Doerge, who will bring her extraordinary talents and enthusiasm to the position. (On the opposite page is a description of a few of her many accomplishments.)

The pages of this newsletter document some of the achievements of the department's alumni, students, staff, and faculty. Especially notable for faculty are the recent solution of one of Herb Wilf's famous "unsolved problems" in combinatorics by Mark Daniel Ward and the recent Provost's Award for Outstanding Graduate Faculty Mentor to Rebecca W. Doerge.

For Fall 2010 we will welcome two new tenure-track assistant professors. Hyunho Chun joins us from Yale University. Sharon Christ joins us from University of North Carolina, Chapel Hill (joint appointment in Child Development and Family Studies and Statistics). New adjunct professor Chaofeng Liu joins us from Forest Research Institute, New Jersey.

The new head will have the benefit of the departmental five-year review by the highly distinguished external team that met here in March 2010. It included Erhan Cinlar, operations research and financial engineering professor at Princeton University; Sallie Keller, William and Stephanie Sick Dean of the George R. Brown School of Engineering and professor of Statistics at Rice University; Regina Liu, chair, Department of Statistics and Biostatistics, Rutgers University; Daniel Roth, professor of Computer Science and The Beckman Institute, University of Illinois; Grace Wahba, IJ Schoenberg-Hilldale Professor of Statistics, professor of Biostatistics and Medical Informatics, and professor of Computer Sciences (by courtesy) at University of Wisconsin; and Bruce Weir, chair and professor, Department of Biostatistics, University of Washington. Many of their recommendations have already enriched our programs.

Please join other friends, alums, faculty, and students at the Purdue reception at the 2010 Joint Statistical Meetings (JSM), which will be hosted by our new head, Rebecca W. Doerge, and our director of development, Sandy Howarth. It is scheduled for Sunday, August 1, 2010, at 6:30 p.m. in the Terrace Room of the Fairmont Waterfront Hotel in Vancouver, British Columbia, Canada.

My best wishes to you all,

Mary Ellen Bock

P.S. Please save the date for the Eighth Purdue International Symposium on Statistics scheduled for June 20-24, 2012, at Purdue.

Rebecca W. Doerge Appointed Head of Statistics

Rebecca W. Doerge, professor of Statistics, professor of Agronomy, and director of the Statistical Bioinformatics Center, has been appointed head of the Department of Statistics, effective July 1, 2010.

Doerge joined Purdue University in 1995 as an assistant professor with a joint appointment in the College of Agriculture's Department of Agronomy and in the College of Science's Department of Statistics after serving as a postdoctoral fellow at Cornell University under the direction of Gary Churchill. She received the PhD in statistics in 1993 under the direction of Bruce Weir at North Carolina State University.



Doerge was appointed University Faculty Scholar in 2001 and promoted to full professor of agronomy and statistics in 2003. In the Department of Statistics, she has been graduate chair of admissions since 2000, with a sabbatical break in 2006. Doerge served as the interim head of Statistics for 2008-2009 and associate head for 2009-2010.

In 2007, Doerge was elected a fellow of the American Statistical Association (ASA) and a fellow of the American Association for the Advancement of Science (AAAS). She has served as associate editor of *The Plant Cell* (2003-2008) and *Genetics* (2003-2009) and is currently associate editor of *Statistical Applications in Genetics and Molecular Biology*.

Doerge has played an integral role in establishing genomics at Purdue University, and continues to forge new ground in the exciting areas of statistical genomics, quantitative genetics, and bioinformatics. Her statistical research lies on the interdisciplinary boundaries of many fields (animal science, biology, biochemistry, botany, chemistry, computer science, horticulture, genetics, genomics, plant breeding, etc.) that are currently involved in assessing genomic-based questions. For more information, please see http://www.stat.purdue.edu/~doerge.

Doerge has won numerous awards for both teaching and mentoring students at Purdue. Selected awards include the School of Science Outstanding Assistant Professor for Excellence in Teaching and Research (1997) and the Purdue Provost's Award for Outstanding Graduate Faculty Mentor (2010). She has supervised 14 completed PhDs in statistics. She currently supervises seven PhD students in statistics and one in agronomy, with three scheduled to complete their PhDs in August 2010.

DISTINGUISHED SCIENCE ALUMNUS AWARD

DISTINGUISHED SCIENCE ALUMNUS AWARD



2010 Distinguished Science Alumnus David U. Himmelberger

(MS Statistics, 1972)

Since 1987, David U. Himmelberger has served as the chief exectutive officer and managing director of Health Outcomes Group, an international medical consulting group specializing in patient reported outcomes, quality of life, and economic evaluation. Before founding Health Outcomes Group, he worked at Syntex Corporation as director of Worldwide Market Research and Strategic Planning. He began his career as a biostatistician at Stanford University Medical School.

With 40 years of experience in the healthcare industry, Himmelberger has developed five quality-of-life questionnaires used in clinical trials. He also has managed and led the evaluation of a nationwide survey of 80,000 healthcare professionals. He has contributed to the studies of quality of life, smoking, arthritis, and competitive athletics.

Himmelberger was nominated by the Department of Statistics for this award.

CAREER HIGHLIGHTS

1987-Present

Chief executive officer, managing director and founder of Health Outcomes Group, a leader in outcomes evaluations in healthcare

2001

Established standards for patient outcomes evaluations in multinational clinical trials 1972-85

Biostatistician, Stanford University Medical School

1978

Established link between cigarette smoking and congenital abnormalities



2010 Distinguished Science Alumnus Edward R. Shugart III

(BS Mathematics, 1963)

For more than 40 years, Edward R. Shugart has been in the insurance business. He began his career at the Hartford Life Insurance Company as an actuarial student and later was appointed senior vice president and chief actuary of Integon Life Insurance Corporation.

In 1982, he partnered with W.H. Odell to form a consulting firm. Eight years later, Shugart joined the Investment Life Company of America as president and chief operating officer, helping build a viable life insurance company from scratch. Within two years, the company was issuing nearly 1,000 universal life policies per month. Currently, he is vice president of Actuarial Management Resources Inc. in Winston-Salem, North Carolina.

Shugart was nominated for this College of Science award by the Actuarial Science program, which is jointly administered by the Departments of Statistics and Mathematics.

CAREER HIGHLIGHTS

1990

Named president and chief operating officer at Investment Life

1983

Became one of the first to develop and implement universal life products for various companies

NT

Named senior vice president and chief actuary of Integon Life Insurance Corporation 1968

Hired at The Hartford Life Insurance Company as an actuarial student

1965

Became an officer in the U.S. Marine Corps

UMNI NEWS

ALUMNI PROFILES

ALUMNI PROFILES



David Himmelberger (MS 1972)

Founder, Chief Executive Officer, and Managing Director, Health Outcomes Group

As an applied statistician working in the healthcare field, David Himmelberger's job demands that he master both precision and nuance. The precision comes in designing studies that quantitatively assess the quality of life in patients suffering from chronic diseases, such as asthma or arthritis. The nuance comes in accounting for the cultural and linguistic differences in patients from as many as 45 countries.

"In English one of the very standard types of questions is, 'How much of the time did you feel depressed or tired?" explained Himmelberger. "Most of the time it's asked as a categorical question: none of the time, a little of the time, some of the time, most of the time, all of the time. In other languages, that's an unnatural way to ask the question. In another culture, it would be asked as 'How often did you feel depressed?' Then the answers are: one time, two times, three times. The whole nature of the data has changed from a continuous variable to a frequency. So now you're mixing apples and oranges together. This is something that one has to think about for multinational clinical trials. What's the natural way to ask the question in different parts of the world, and will that result in equivalent data?" To read more of this article, please see http://www.stat.purdue.edu/people/alums/profiles/david_himmelberger.html.

Marcey L. Hoover (MS 1993, PhD 1995)

Manager, Strategic Planning & Laboratory Leadership Team

As a doctoral student at Purdue, Marcey L. Hoover did not aspire to work for a national laboratory. "I was sitting in my office one day at Purdue when a Sandia recruiter walked in and asked if I had ever heard of Sandia labs," Hoover recalled. "The answer was no! However, I had heard of the manager of the statistics department (Rob Easterling). They asked me to come out for an interview and I fell in love with Sandia and Albuquerque after my first visit."



Hoover started at Sandia National Laboratories, one of the nation's nuclear weapons laboratories, as an applied statistician in 1995. One of her projects involved actively working with the Federal Aviation Administration (FAA) to evaluate aviation safety data, to analyze safety inspection work processes, and to develop system safety concepts. "After several years providing statistical consultations to the engineering staff at Sandia, I became interested in more broad systems engineering applications and subsequently moved out of the statistics group," she said. To read more of this article, please see http://www.stat.purdue.edu/people/alums/profiles/marcey hoover-2009.html.

Ping Ma (MS 2001, PhD 2003)

Assistant Professor of Statistics, University of Illinois at Urbana-Champaign

Ping Ma began his statistical career in China with an undergraduate degree in economical mathematics. His undergraduate studies included some statistics courses, but he found that mathematical finance piqued his interest more. Ma chose to continue his education at Purdue University in the mathematical finance program, but after his first year, he realized he was more interested in statistics.



After his realization, Ma became a PhD candidate in the Department of Statistics. "The Department of Statistics offered very solid training in both theoretical and applied statistics," Ma commented. As a student looking for a niche in the statistical world, he found the seminars offered by the department enlightening. "Several series of seminars provided a channel for students to access the most current research topics and practice in the statistics community. I remember that we had Graduate Student Organization meetings each month, which consisted of a talk given by a faculty member and a student. It helped me choose my thesis advisor and find my research topic." To read more of this article, please see http://www.stat.purdue.edu/people/alums/profiles/ping ma.html.



Bhramar Mukherjee (MS 1999, PhD 2001)

Associate Professor, Department of Statistics, University of Michigan

Before college, Bhramar Mukherjee dabbled in engineering, but she then realized that statistics was a better fit for her because of its unique use of a combination of mathematics and science and its application to real-world problems, a perfect balance between abstraction and reality. She first studied statistics in India at Presidency College in Calcutta, where she received her bachelor's of science degree. Afterwards, she pursued her master's in applied statistics and data analysis at the Indian Statistical Institute (ISI), in Calcutta.

In August of 1996, Mukherjee came to Purdue to continue her education in statistics. She earned her MS in mathematical statistics in 1999 and then interned at Eli Lilly in the Statistics Division in Indianapolis during the summer of 2000. Discussing this internship, Mukherjee commented, "I liked the challenge, but missed the interaction with students." So she decided to continue in the academic field. Studying under Professor William J. Studden, she wrote her thesis on optimal *(continued on next page)*

ALUMNI NEWS

ALUMNI PROFILES

OUTSTANDING ALUMNI

Mukherjee (continued):

designs for estimating the path of a stochastic process. After earning her PhD in 2001, she was offered a position at the University of Florida, where she worked until 2006. While working at the University of Florida, she spent her summers as a visiting scholar at Stanford University, ISI, the National Cancer Institute's Division of Cancer Epidemiology and Genetics, and at Victoria University in Wellington, New Zealand. To read more of this article, please see http://www.stat.purdue.edu/people/alums/profiles/bhramar mukherjee.html.

Kent H. Somers (BS Mathematics 1986)

FSA, CERA, CFA, MAAA, Vice President, Appointed Actuary and Head of Financial Actuarial Department, Lincoln Financial Group

Kent H. Somers was born and raised in Indiana. He played football in high school and was recruited to play in college, ultimately accepting a walk-on position at Purdue. One would not normally connect playing football to choosing actuarial science as a major, but that is exactly what happened for Somers. "The recruiter from Indiana State brought the actuarial profession to my attention. When I arrived at Purdue for my Senior Day, Keith Schwingendorf took the time to provide me one-on-one attention to better explain the profession to me. I was sold and switched majors that day from pre-pharmacy to mathematics with an actuarial science focus. Keith later served as the academic advisor for the Purdue Actuary Club that I co-founded during my junior year at Purdue," Somers remembers.



Somers is a proud graduate of Purdue University. In 1986, he graduated from the Department of Mathematics with a bachelor's of science degree. "My proudest moment was getting my diploma and seeing the joy from my parents as they were able to celebrate the culmination of their financial sacrifices to help send me to college," says Somers. To read more of this article, please see http://www.stat.purdue.edu/people/alums/profiles/kent_somers.html.



Department of Statistics and Actuarial Science Program Honor Outstanding Alumni

On Friday, September 25, 2009, individual departments in the College of Science honored their outstanding alumni. This year the Department of Statistics awarded **Marcey L. Hoover** (MS 1993, PhD 1995) with the Statistics Outstanding Alumni Award. The Actuarial Science program, administered jointly by the Department of Statistics and the Department of Mathematics, awarded **Kent H. Somers** (BS Mathematics 1986) with the Actuarial Science Outstanding Alumni Award. The Outstanding Alumni Award honors alumni for their contributions and leadership within their professions.

The following events were held:

- * Friday, September 25, 2009, from 2:00 p.m. 3:00 p.m. in HAAS 111
- A presentation by Marcey Hoover on her career highlights followed by a question and answer period.
- * Friday, September 25, 2009 from 2:00 p.m. 3:30 p.m. in BRNG 1254
- A panel discussion between Kent Somers and Actuarial Science undergraduates.

For a list of our past outstanding alumni, please see http://www.stat.purdue.edu/people/alums/outstanding_alumni/.



Marcey L. Hoover



Kent H. Somers

NEW FACULTY AND STAFF

Alumni Updates

Duncan K. H. Fong (MS 1984, PhD 1987), professor of marketing and professor of statistics at The Pennsylvania State University, was appointed the head of the Marketing Department in the Smeal College of Business. His appointment is effective July 1, 2010.

Ming Tan (PhD 1990), professor of epidemiology and preventive medicine, was appointed, effective July 1, 2009, head of the Division of Biostatistics, Department of Epidemiology and Preventive Medicine at the University of Maryland (UM) Marlene and Stewart Greenebaum Cancer Center, and director of the Center for Biostatistics and Quantitative Research of the University of Maryland Institute for Clinical and Translational Science. Tan continues his position as director of Biostatistics at the Greenebaum Cancer Center. The new division currently has 15 primary faculty members and represents a merging of two biostatistics powerhouses on the UM campus: the Department of Epidemiology and Preventive Medicine's Biostatistics Division and the UMGCC Biostatistics Facility. He recently co-authored with Guo-Liang Tan and Kai Wang Ng a Bayesian book, *Bayesian Missing Data Problems: EM, Data Augmentation and Non-iterative Computation*, published by Chapman & Hall/CRC Biostatistics Series.

New Arrival:

Isabella W. Kim was born on July 4th, 2009, to **Suk-Young Yoo** (PhD '08) and husband Minkyun Kim. Isabella was 7 lb. 5.5 oz. and 25 in. She and her mother share a birthday.

Visit Alumni Web Site: www.stat.purdue.edu/people/alums

Alumni, have you visited the Department of Statistics alums' Web page yet? There you will find information about alumni events, news from the department and other alumni, Statistics Distinguished Alumni award recipients' stories, and alumni profiles.

You can check out the alumni Web pages by visiting http://www.stat.purdue.edu/people/alums. We love to hear about what's been happening in your life, so if you have news to share with us or would like to update your information with us, you can submit your news online by following the "Send Us Your News/Update Your Information" link found on the alumni page.

Is there something you would like to see on these pages? Please let us know by sending your suggestions to webmaster@stat.purdue.edu.



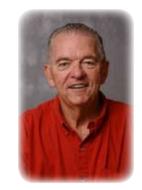
Business Manager

Mary Bell joined the Department of Statistics as business manager in January, coming from the Department of Computer Science. She has 19 years' experience in several different campus business offices. She enjoys time with her daughter and working in her yard.



Malgorzata Bogdan joined the Department of Statistics as a visiting assistant professor for Fall 2009. She is from the Institute of Mathematics and Computer Science, Wroclaw University of Technology, Wroclaw, Poland. Bogdan received her PhD in statistics in 1996 from Wroclaw University of Technology, Poland. Her research interests include model selection in application to bioinformatics and statistical genetics. Bogdan first visited the department in 2001 and has been a frequent visitor since then.





Continuing Lecturer, Research Scholar

John Deely has been designated a research scholar of the

Department of Statistics in honor of his contributions to

statistics research.

Visiting Assistant Professor

Leonore Findsen joined the Department of Statistics in Spring 2010 as a visiting assistant professor. She received her PhD in computational biophysical chemistry from Carnegie Mellon University. Since 1989 she has taught courses in a variety of subjects, including chemistry, biochemistry, college algebra and relational databases at a variety of universities around the country. She has an interest in undergraduate education.

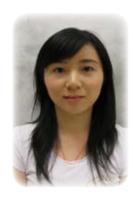


NEW FACULTY AND STAFF

NEW FACULTY AND STAFF

Visiting Assistant Professor

Xuanyao He joined the Department of Statistics as a visiting assistant professor in Fall 2009. She received her PhD in statistics in 2009 from the University of North Carolina at Chapel Hill. Her research interests include spatial statistics, Bayesian statistics, time series analysis, longitudinal data analysis, and experimental design.



Visiting Assistant Professor

Sarah Sellke joined the Department of Statistics in Spring 2010 as a visiting assistant professor. She received an MS in electrical and computer engineering and an MS in mathematics from Purdue University. Sarah received her PhD in electrical and computer engineering in 2010. Her research interests in statistics lie in the areas of applied probability, modeling and model selection, time series, and massive data.



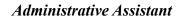
Adjunct Assistant Professor

Guy Lebanon was appointed adjunct assistant professor of statistics in July 2009. He is an assistant professor in the College of Computing at Georgia Institute of Technology. His main research area is statistical modeling and visualization of high dimensional discrete data such as text documents and partially ranked data. Additional research interests include privacy preservation in databases and social networks and the use of non-Euclidean geometry in machine learning.



Assistant Professor

Xiao Wang joined the Department of Statistics as an assistant professor in Fall 2009. He received his PhD in statistics from the University of Michigan in 2005. Before coming to Purdue, Wang was an assistant professor in the Department of Mathematics and Statistics at the University of Maryland, Baltimore County. His current research interests include stochastic modeling and nonparametric and semiparametric inference with applications to astronomy and engineering.



Diane Martin joined the Department of Statistics in December 2009 as the administrative assistant to the head. She received her BS in management from the Krannert School of Management at Purdue University. Prior to joining the department, Martin worked in other departments at Purdue University, including Physics and Chemical Engineering.



Assistant Professor

Lingsong Zhang joined the Department of Statistics as an assistant professor in Fall 2009. He has a joint appointment with the Regenstrief Center for Healthcare Engineering. Zhang received his PhD in statistics from the University of North Carolina, Chapel Hill in 2007. Prior to coming to Purdue University, Zhang was a research fellow in the Department of Biostatistics, School of Public Health, Harvard University. Zhang is interested in developing statistical methods for real applications and exploring their theoretical and empirical properties. His major research area is high dimensional inference, with a focus on machine learning methods, functional data analysis, multiscale methods, nonparametric methods, time series analysis, and statistical graphics. Applications of his research include environmental health data sets, proteomic data sets, gene-microarray data sets, Internet traffic data sets, and chemometrics data sets.





Continuing Lecturer, Research Scholar

Tiantian Qin, who originally joined the Department of Statistics as a visiting assistant professor in August 2007, was appointed continuing lecturer effective at the start of the 2009-2010 academic year. She received her PhD in management information systems in 2007 from the University of Arizona, her MS in statistics from the University of South Carolina, and a BS in statistics from the University of Science and Technology of China. Her research interests include data mining, information security, and bioinformatics. She has also been designated as a research scholar of the Department of Statistics based on her contributions to statistics research.

DEPARTMENT NEWS

CONGRATULATIONS

Department Members Recognized at College of Science Faculty and Staff Recognition Luncheon

Congratulations to Regina P. Becker, Douglas G. Crabill, Jennifer Neville, Shaun M. Ponder, Olga Vitek, Mark Daniel Ward, Bowei Xi and Jian Zhang, who were honored at the College of Science Faculty and Staff Recognition Luncheon held on February 24, 2010.



Regina P. Becker, manager of Statistical Consulting, received the Customer Service Award. This award recognizes outstanding customer service within the College of Science. Individuals receiving this award exhibit a consistent pattern of congenial behavior to all contacts and treat others with respect. They also have a positive attitude even under the most difficult circumstances, anticipate the needs of others, and take appropriate action.







Jennifer Neville, assistant professor of Statistics and assistant professor of Computer Science, received the Interdisciplinary Award, which recognizes interdisciplinary efforts by teams of faculty and staff in the College of Science. Teams receiving this award have produced an extraordinary and significant outcome as the result of a current or recent collaborative effort. Neville was nominated by the Department of Computer Science for this award.



Shaun M. Ponder, business assistant, nominated by the Department of Statistics and the Department of Mathematics, received the Customer Service Award. This award recognizes outstanding customer service within the College of Science. Individuals receiving this award exhibit a consistent pattern of congenial behavior to all contacts and treat others with respect. They also have a positive attitude even under the most difficult circumstances, anticipate the needs of others, and take appropriate action.

Olga Vitek, assistant professor of Statistics and assistant professor of Computer Science, received the Graduate Student Mentoring Award, which recognizes excellence by College of Science faculty in the mentoring of graduate students. Individuals receiving this award effectively nurture the professional and personal growth of graduate students.





Mark Daniel Ward, assistant professor of Statistics, received the Undergraduate Advising Award, which recognizes College of Science faculty who excel in advising and mentoring undergraduate students. Individuals receiving this award effectively nurture the professional and personal growth of undergraduate students.

Bowei Xi, assistant professor of Statistics, received the Interdisciplinary Award, which recognizes interdisciplinary efforts by teams of faculty and staff in the College of Science. Teams receiving this award have produced an extraordinary and significant outcome as the result of a current or recent collaborative effort.





Jian Zhang, assistant professor of Statistics, received the Leadership Award, which recognizes excellence in faculty leadership that improves the environment for faculty, staff, and students and promotes diversity and inclusiveness in the College of Science.

DEPARTMENT NEWS

RIMENT NEWS

R.W. Doerge Selected for Provost's Award for Outstanding Graduate Faculty Mentor

Congratulations to Professor Rebecca W. Doerge on being selected as one of two recipients in 2010 of the Provost's Award for Outstanding Graduate Faculty Mentor, presented by Purdue's Graduate School. She was selected from a group of 12 nominees put forward as the top candidates from all the colleges and schools across campus. Doerge was honored at a banquet this spring.



Pictured (from left): Mark Smith, dean of the Graduate School; R.W. Doerge; Joseph Thomas III, professor of Pharmacy Practice; Tim Sands, executive vice president for Academic Affairs and provost.



Professor R.W. Doerge is pictured with some of her graduate students. Pictured from left, first row: Ani Elias, Gayla Olbricht, Cherie Ochsenfeld (graduated December '09), R.W. Doerge, Sanvesh Srivastava. Second row: Paul Livermore Auer, Douglas Baumann, Tilman Achberger, Andrea Rau.

Purdue Awarded \$25 Million for State's First National Science Foundation (NSF) Science and Technology Center

Purdue University has been awarded \$25 million to create the first NSF Science and Technology Center in Indiana.

The center will explore emerging frontiers of information science to develop a set of principles extending information theory to integrate the elements of space, time, structure, semantics, and context.

"The center brings together world-class scholars from top universities to collectively develop a comprehensive science related to how information is extracted, manipulated, and exchanged," said Richard Buckius, Purdue's vice president for research. "The team will attack these problems by rigorous theoretical studies driven by critical real-world problems in domains as diverse as biology, social networks, and computer communication networks. The outcomes promise to be transformative, just as development of reliable and affordable digital communication transformed 20th century life."

Fourteen Purdue faculty members from six departments along with ITaP are participating in the project. Members from the Department of Statistics involved in this project include: Jennifer Neville, Yuan (Alan) Qi, and Mark Daniel Ward. *Click here* for the complete article.



Jeffrey Beckley has been elected to a three-year term as member of the Society of Actuaries (SOA) Board of Directors. He is a continuing lecturer in statistics, continuing lecturer in mathematics, Professional Actuary in Residence, and the co-director of Purdue's Actuarial Science Program.

The SOA is an educational, research, and professional organization dedicated to serving the public and its 20,000 members. The SOA's vision is for actuaries to be the leading professionals in the measurement and management of risk. The SOA's mission is to advance actuarial knowledge and to enhance the ability of actuaries to provide expert advice and relevant solutions for financial, business, and societal problems involving uncertain future events.

ACCOMPLISHMENTS

ACCOMPLISHMENTS

Martina Bremer (PhD '06), assistant professor of mathematics, San José State University, and professor Rebecca W. Doerge, have authored *Statistics at the Bench: A Step-by-Step Handbook for Biologists*. The book is not a textbook, but rather a convenient benchside companion for biologists, designed as a handy reference guide for elementary and intermediate statistical analyses. The book was published in 2010. For more information about the handbook from Cold Spring Harbor Laboratory Press, please visit their Web site at http://www.cshlpress.com..





Mary Ellen Bock, professor and head, was elected member-at-large of the Mathematics Section of the American Association for the Advancement of Science (AAAS). Her term began in February 2010 and will run through February 2014. For more information, please see the AAAS press release at http://www.aaas.org/news/releases/2010/0304aaas_elections.shtml.

Professor **Anirban DasGupta** is authoring a two-volume book on probability theory and its applications. Volume one, entitled *Fundamentals of Probability: A First Course*, is a text for upper undergraduates in science, engineering, mathematics, and actuarial sciences, and for master's students in statistics, mathematics, and engineering. Volume two, entitled *Comprehensive Probability for Statistics and Machine Learning*, is for PhD students in statistics and computer science. Volume one was released in April 2010. Volume two is expected to be released in the spring of 2011. Both volumes are in the Springer Textbook series.





Rebecca W. Doerge, professor of Statistics, professor of Agronomy, new head of Statistics and director of the Statistical Bioinformatics Center, has been selected as a 2009-2010 fellow of the Academic Leadership Program sponsored by the Committee on Institutional Cooperation (CIC). The Committee on Institutional Cooperation (CIC) is an academic consortium of Big Ten universities and the University of Chicago. Established in 1987, the Academic Leadership Program (ALP) is a CIC initiative designed to develop the leadership and managerial skills of faculty who have demonstrated exceptional ability and administrative promise. The ALP consists of three meetings on one of the

various CIC campuses and monthly meetings with administrative leaders on the Purdue campus. The off-campus meetings focus on challenges in higher education, managing human resources, budget models, diversity, student success, strategic planning, and various other topics of interest each year. The meetings at Purdue are designed to familiarize fellows with the structure, style and work of Purdue's senior administration. Doerge is one of six fellows selected by Purdue this year.

Ellen Gundlach, continuing lecturer, was appointed associate editor of the Consortium for the Advancement of Undergraduate Statistics Education (CAUSE) and associate editor of the statistics editorial board for the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) project. "I'm very excited about both of these opportunities and look forward to working with other statistics educators across the country," said Gundlach.

CAUSE is a national organization, arising from a strategic initiative by the American Statistical Association. Its mission is to support and advance undergraduate statistics education in four target areas: resources, professional development, outreach, and research. For more information about CAUSE, please visit their website at http://www.causeweb.org. Members of the CAUSE editorial board also serve on the statistics editorial board for the MERLOT project. MERLOT is a leading-edge, user-centered, searchable collection of peer- reviewed and selected higher education, online learning materials, catalogued by registered members and a set of faculty development support services. MERLOT's vision is to be a premier online community where faculty, staff, and students from around the world share their learning materials and pedagogy. For more information about the MERLOT project, please visit http://www.merlot.org/merlot/index.htm.

Gundlach also received the 2010 Award for Excellence in Distance Learning in April 2010 from Continuing Education, an academic unit of the Purdue Office of Engagement.

Bo Li, assistant professor, was selected as an elected member of the International Statistical Institute (ISI). ISI is one of the oldest international scientific associations functioning in the modern world. Its first congresses were convened in 1853, and it was formally established in 1885. The institute is an autonomous society which seeks to develop and improve statistical methods and their application through the promotion of international activity and cooperation. Li joins professors Mary Ellen Bock, William S. Cleveland, Jayanta K. Ghosh, Chuanhai Liu, David S. Moore, William J. Studden, and Hao Zhang as members of the ISI.





Olga Vitek, assistant professor of Statistics and assistant professor of Computer Science, was awarded the Department of Statistics Outstanding Assistant Professor Undergraduate Teaching Award in April 2010. The department presents this award each year to a tenure-track assistant professor in honor of teaching accomplishments, including significant contributions to undergraduate education.

ACCOMPLISHMENTS

Ward Resolves One Of Herbert Wilf's Unsolved Problems

ACCOMPLISHMENTS



In March 2010, Mark Daniel Ward, assistant professor, resolved the third of eight Unsolved Problems posed by Herbert Wilf. Wilf is a well-known expert in several branches of combinatorics; he is the Thomas A. Scott Professor of Mathematics Emeritus at the University of Pennsylvania. The problems are posted on his Web page, http://www.math.upenn.edu/~wilf, to inspire discussion and (hopefully) eventual solutions of these very challenging questions in combinatorics. The third problem, now resolved by Ward, involves fractions that are closer and closer approximations of the transcendental number pi. Fractions for these approximations are written as coefficients of a generating function; the question posed by Wilf is about the first order asymptotic

behavior of these approximations, namely, how quickly do these approximations improve? Ward's solution relies on complex analysis (a separate branch of mathematics from combinatorics) to precisely determine the asymptotic behavior of these approximations. Such connections between different areas of mathematics are often needed to resolve such challenging questions. Ward's paper on the solution has been accepted for the 21st International Meeting on Probabilistic, Combinatorial, and Asymptotic Methods for the Analysis of Algorithms. The papers of the proceedings from the meeting will be published in a special volume of Discrete Mathematics and Theoretical Computer Science later this year.

Ward received the Teaching for Tomorrow Award for 2010-2011. Every year, the Office of the Provost selects a new group of up to 12 assistant professors and three senior faculty members as mentors. The program allows faculty to share common experiences and helps them to further improve student learning. The program also provides each participant with faculty development funds.

Ward also received the College of Science Faculty Award for Outstanding Teaching by an Assistant Professor in April 2010. This award is given to a tenure-track assistant professor in the College of Science who has demonstrated competence and potential in a research area with a special emphasis on outstanding contributions to teaching effort of the department, as evidenced by particular success in the classroom, implementation of new curricula, design of new courses, and other noteworthy educational achievements.



Dabao Zhang, assistant professor, has been granted a CAREER award for his proposal titled "A New Regularization Framework for Identifying Composite Signatures." The National Science Foundation offers its most prestigious awards through the CAREER program to recognize and support junior faculty's development for a lifetime of leadership in integrating education and research.

Molecular profiling usually entails a collection of a massive amount of features (i.e., large p) for only a small number of biological individuals (i.e., small n), and therefore identifying the underlying sparse signatures presents a task of

finding a very few needles in a haystack. Zhang has proposed a new regularization framework to address these challenges for effective dimension reduction and thus signature identification. The proposed work has enormous promise for its use in early disease detection, assessment of prognosis, measurement of drug efficacy, and, eventually, personalized medicine. The full potential of the new framework, however, lies in providing breakthrough solutions to structured noisy features.

Zhang joined Purdue in 2005 from the University of Rochester. He earned a PhD from the Department of Statistical Science at Cornell University in 2003. His research interests include multivariate statistics, high-dimensional variable selection, and extreme values. With the new regularization framework, his development of signature identification methodologies will be carried out with applications to gene expression profiling, expression quantitative trait loci mapping, genome-wide association study, and comparative metabolomics.

Professor Hao Zhang was selected as an elected member of the International Statistical Institute (ISI). ISI is one of the oldest international scientific associations functioning in the modern world. Its first congresses were convened in 1853, and it was formally established in 1885. The Institute is an autonomous society, which seeks to develop and improve statistical methods and their application through the promotion of international activity and cooperation. Zhang joins professors Mary Ellen Bock, William S. Cleveland, Jayanta K. Ghosh, Chuanhai Liu, David S. Moore, and William J. Studden as members of the ISI.







DEPARTMENT NEWS





Ker-Chau Li Presents the 2010 Myra Samuels Memorial Lecture

Ker-Chau Li was the invited speaker for the Myra Samuels Memorial Lecture held on April 8, 2010. The title of the talk was "Exploring Complex Interactions in Genomic Data for Aiding the Translational Medicine Research."

Li is a distinguished professor of statistics and a professor of mathematics at the University of California, Los Angeles, and director and distinguished research fellow at the Institute of Statistical Science, Academia Sinica in Taiwan. His research interests include bioinformatics, systems biology, lung cancer studies, high dimensional data analysis, large ensembles of time series, medical image analysis, machine learning, statistical graphics, Bayesian computation, regression, censoring, experimental design, and survey sampling. He is best known for introducing sliced inverse regression (SIR) and principal Hessian direction (PHD), two fundamental dimension reduction methods for high dimensional data analysis.

Beginning in 2000, his research interest turned to the emerging field of computation/mathematics/ statistics in genome biology. In 2002, he published a paper in *Proceedings of Academy of Science*, featuring the novel method of liquid association (LA) for microarray gene expression analysis. He is currently leading a research group from UCLA and Academia Sinica to continue the development of methods for utilizing multiple sources of gene expression profiling, genetic markers, complex disease phenotypes and traits. The Web site http://kiefer.stat2.sinica.edu.tw/LAP3 offers online computation based on LA and related methods for gene expression studies. He is also collaborating with Pan Chyr Yang of National Taiwan University and his colleagues on integrative cancer biology.

Li received his PhD in statistics from the University of California, Berkeley, in 1981. He was an assistant professor of statistics at Purdue between 1981 and 1984 before becoming a faculty member at UCLA. He has served as an associate editor and co-editor of *Statistica Sinica* and an associate editor for the *Annals of Statistics* and *Computational Statistics*. In 2003, Li was the Medallion Lecturer at the Institute of Mathematical Statistics (IMS) meeting. He was awarded a Guggenheim Fellowship for Statistics in 1993, and in 1989 he became an Institute of Mathematical Statistics (IMS) Fellow.

The Myra Samuels Memorial Lecture is named in memory of Myra Samuels, who was associate professor of biostatistics and epidemiology in Purdue's Department of Veterinary Pathobiology and associate director of Statistical Consulting in the Department of Statistics.

Susan Murphy Presents the 2010 K.C.S. Pillai Memorial Lecture



Susan Murphy was the invited speaker for the K.C.S. Pillai Memorial Lecture held on April 22, 2010. The title of her talk was "Individualizing Dynamic Treatments: Statistical Challenges and Some Solutions."

Murphy is the H.E. Robbins Professor of Statistics, a professor of psychiatry, and a research professor at the Institute for Social Research at the University of Michigan. Her current primary interest is in causal inference and multi-stage decisions, sometimes called dynamic treatment regimes or adaptive treatment strategies. She is particularly interested in developing statistical methods and experimental designs that can be used in formulating dynamic treatment regimes. For more information about her work, please visit her homepage at http://www.stat.lsa.umich.edu/~samurphy.

Murphy earned her PhD in statistics from the University of North Carolina, Chapel Hill, in 1989. She is a fellow of the American Statistical Association and the Institute of Mathematical Statistics.

The K.C.S. Pillai Memorial Lecture is named in memory of K.C.S. Pillai, who was a professor in the departments of Statistics and Mathematics. His chief contributions to statistics were in the field of multivariate statistical analysis. His leadership in statistical research (more than 80 published papers) was recognized by his being named a fellow of both the American Statistical Association and the Institute of Mathematical Statistics.

STUDENT AWARDS Undergraduate Awards

Actuarial Science Award Winners

(All awardees are pictured with Jeffrey Roberts, the Frederick L. Hovde Dean and Professor of Chemistry, unless otherwise noted)

Actuarial Science Alumni Scholarship Tian Li



Dan Rubin ScholarshipsAndrea Ferris Grant Goede



Actuarial Science Award Winners

AEGON Scholarship
Eric Krafcheck



Swiss Re ScholarshipsBen Berning Sarah Ryan Kristin Shaffer



Sarah Ryan



Kristin Shaffer

Andrea Ferris

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STUDENT AWARDS Undergraduate Awards

College of Science Outstanding Students

Kelli Chupp - Sophomore in Actuarial Science Nikita Datsenka - Sophomore in Statistics Yanyan Ma - Junior in Actuarial Science Elizabeth Moss - Senior in Actuarial Science Trent Sahlin - Senior in Statistics Xin Lu Tan - Junior in Statistics Lifan Wu - Freshman in Actuarial Science Bingrou Zhou - Freshman in Statistics



Kelli Chupp



Nikita Datsenka



Yanyan Ma



Elizabeth Moss



Trent Sahlin



Xin Lu Tan



Lifan Wu



Bingrou Zhou

Glen E. Baxter Award



Kristen Ziegler

gler Daniel Stratman

David S. Moore Undergraduate ScholarshipAngela Hancock



Professor Emeritus David S. Moore, Angela Hancock, and Dean Roberts

V. L. Anderson Scholarship Award

Eric Krafcheck

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STUDENT AWARDS

Graduate Student Awards

I. W. Burr Award

Ryan Martin



L. J. Cote M. S. Excellence in Statistics

David Young



David Young

Mary Ellen Bock, professor and head

Award for Outstanding Teaching by a Statistics Teaching Assistant Mike Lawlor



Dean Jeffrey Roberts

StatCom Community Service Award

Juan Hu

Mike Lawlor



Juan Hu



Mike Lawlor

Department of Statistics Honoree at the Celebration of Graduate Student Teaching

Douglas Baumann



Teaching and Learning Technologies Distance Education Incentive Award



STUDENT NEWS

OUR GRADUATES

OUR GRADUATES

August 2009

Doctorates

Graduates (Advisor) and Dissertation Titles

Yunxiao He (Chuanhai Liu): *Improving the EM Algorithm for Maximum Likelihood Inference*

Lanqing Hua (Bruce A. Craig): Statistical Inference of Protein Structure Using Small-Angle X-Ray Scattering Data

Paul Kidwell (William S. Cleveland, Guy Lebanon): *Methods for Analyzing Rankings and Network Intrusion Detection* **Ryan Martin** (Jayanta K. Ghosh, Chuanhai Liu): Fast Nonparametric Estimation of a Mixing Distribution with Application to High-Dimensional Inference

Cherie Ochsenfeld (Rebecca W. Doerge, Kristofer Jennings): Mixed Models in Quantitative Trait Loci and Association Mapping with Bootstrap Threshold

Yang Zhao (Guy Lebanon): Local Likelihood Modeling of the Concept Drift Phenomenon



August grad Cherie Ochsenfeld with her advisors, Professors Kristofer Jennings and Rebecca W. Doerge

Master's

Douglas Baumann
Hongmei Ding
Fang Liu
Jiao Song
Yifeng Yang
Wei Zhang

Graduate CertificatesMelvin Lamboy-Ruiz

Bachelor's in Statistics

Jacob T. Dummitt Scott M. Moeller

Bachelor's in Actuarial Science

Melanee N. Dallas Jacob T. Dummitt

December 2009

Doctorates

Graduates (Advisor) and Dissertation Titles

Alexandra Chronopoulou (Frederi Viens): Variations and Hurst Index Estimation for Self-Similar Processes

Joanne Daggy (Bruce A. Craig): Joint Modeling of Highly Skewed Data with Excess Zeros Using Copulas Alexander Lipka (Rebecca W. Doerge, George P. McCabe): Associating Single Nucleotide Polymorphisms (SNPs) with Binary Traits

Sudeshna Paul (Bruce A. Craig): Estimation of Interatomic Distance Distribution of Protein Molecules from Small Angle Scattering (SAS) Images





December '09 graduate Alexandra Chronopoulou with her advisor, Professor Frederi Viens



December '09 grad Alexander Lipka and his advisor, Professor Rebecca W. Doerge

STUDENT NEWS

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OUR GRADUATES

May 2010

Doctorates

PhD Graduates (Advisor) and Dissertation Titles

December 2009

(continued)

Master's

Ting Bai Allison Cummins Meghan Honerlaw

Bachelor's in Actuarial Science

STUDENT NEWS

Divvya Aggarwal Molly M. Amstutz Wee Poh Ee Kevin Libby Kean Ming Tan Kurt Wiggins Kuan Yang

Bachelor's in Statistics

Divvya Aggarwal
Molly M. Amstutz
Chi-Yun Cheng
Jung Won Choi
Ozgur Delemen
Wee Poh Ee
Kevin Libby
Thomas Mack
Yeni Nieves
Kean Ming Tan
Kurt Wiggins
Kuan Yang

Ryan Hafen (William S. Cleveland):

Local Regression Models: Advancements, Applications, and New Methods Gang Shen (Jayanta K. Ghosh): A
Theil-type Estimate in Multiple Linear
Regression and Developing a
New BIC for Detecting Change-points

Master's

Karl D'Silva
Henry Domenico
Youran Fan
Fulya Gokalp
Brendan LaCounte
Joy Nyenhuis-Rouch
Chao Pan
Zhilin Tang
Sherry Towers
Jeremy Troisi
Libo Wang
Ruijuan Wang
Qi Wei
David Young

Graduate Certificates

Nathanael Yoder

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OUR GRADUATES

STATCOM UPDATE

May 2010

(continued)

Bachelor's in Actuarial Science

Jennifer Aschenbrenner Ahmad Farhan Awahab Matthew Bowers John Carroll Kyle Castronova Xueyao Chen Vaidehi Chhatrapati Franco Cinfio Elizabeth Cogswell Christopher Cunningham Thomas Edson Andrea Ferris John Fogarty Robert Fulton Nicholas Georgopoulos Jeremiah Howell Lingbo Huang

Ian Jones Mohd Hanif Kamis Jacqueline Keller Nicholas Klawitter John Klimek Wan-Jung Lee Jacob Libauskas Alex Morton Elizabeth Moss Kristen Pairitz Katie Poon Xingyi Qin Xuelu Ren Miguel Rivera Trent Sahlin Jason Shumate Jane Steigerwald Robert Troup

Bachelor's in Statistics

Jennifer Aschenbrenner
Ahmad Farhan Awahab
Mark Bedwell
Kyle Bemis
Matthew Bowers
John Carroll
Kyle Castronova
Xueyao Chen
Vaidehi Chhatrapati
Heejin Cho
Franco Cinfio
Elizabeth Cogswell
Christopher Cunningham
Thomas Edson
Andrea Ferris
John Fogarty
Robert Fulton
Nicholas Georgopoulos
Melvin Gutierrez
Philip Hebda
Eric Hodina
Jeremiah Howell
Lingbo Huang
Matthew Huffer
Ian Jones

Mohd Hanif Kamis Jacqueline Keller Nicholas Klawitter John Klimek Miles Kopcke Wan-Jung Lee Jacob Libauskas Charles Linard Alex Morton Elizabeth Moss Kristen Pairitz Katie Poon Xingyi Qin Xuelu Ren Miguel Rivera Trent Sahlin Jason Shumate Jane Steigerwald **Edward Towne** Robert Troup Marcelo Villa Catherine Withey Joseph Yedinak Yi Yin

From the StatCom Team

StatCom at Purdue University, a pro bono statistical consulting service run by statistics graduate students for nonprofit organizations, has continued its tradition of serving the community since its inception in 2001. StatCom has been involved in seven projects this past academic year (2009-2010). We served clients from diverse areas of the community, including local art groups and organizations affiliated with the United Way.

StatCom wrote and analyzed surveys in many of these projects. Three of the surveys measured customer satisfaction: two for a local arts organization and one for a United Way partner organization. StatCom members presented statistical analysis results to current clients, as well as tried to draw in new clients by giving presentations on the kinds of services we offer.

In addition to our consulting work, the P-12 Outreach component of StatCom has been active in 2009-2010 in implementing hands-on statistics activities at Purdue University and public schools. P-12 outreach members, who motivate and teach young students about the benefits of statistics, held a booth at this year's Spring Fest at Purdue University. During the event, groups of middle school children participated in paper airplane and bean counting experiments. The outreach members also helped score tests for the middle school Math Counts competition. In the past, the group has offered after-school math and science programs at Frontier Elementary School.

With the help of a Strategic Initiatives Grant from the American Statistical Association (ASA) in 2006, StatCom at Purdue University has helped establish a network of pro bono consulting groups. Today, the StatCom Network is an international group with programs at eight universities within and outside the U.S. In addition, several other new programs are currently in development. The StatCom Network Newsletter can be found along with other information on the StatCom page of the ASA's Web site, http://www.amstat.org/education/statcom/. This newsletter features information about many of the consulting projects that members of the StatCom Network have worked on in the past semester.

StatCom provides students a great opportunity to serve the local community and participate in a valuable real-world experience in applying skills learned in the classroom. At the same time, it serves as a platform to develop interpersonal skills and meet new students and people from the local community. The members of StatCom greatly appreciate the valuable support from the department and the University. StatCom has been a rewarding and enjoyable experience for students and we look forward to continuing to play an active role in the statistical community in the coming year.

JSM 2010

The Purdue University
Department of Statistics
cordially invites you to attend the

Purdue University Friends and Alumni Reception

held during the 2010 Joint Statistical Meetings

Fairmont Waterfront Hotel
Terrace Room
900 Canada Way
Vancouver, British Columbia, Canada V6C3L5

Sunday, August 1, 2010 6:30 p.m. - 8:30 p.m.

Children and families are welcome.

Please RSVP to Holly Graef by July 9, 2010 hgraef@purdue.edu or 765-494-6030

For more information about JSM, please see http://www.amstat.org/meetings/jsm/2010/

Please join us in 2012 for the
Eighth Purdue International Symposium
on Statistics and Related Topics

June 20-24, 2012
Purdue University
West Lafayette, Indiana

Odds & Ends is published for alumni and friends of the Purdue Department of Statistics. We welcome comments and suggestions for future newsletters.

Department Head: Mary Ellen Bock
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Editor: Holly Graef

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If you would prefer a printed copy of this newsletter, please e-mail Holly Graef (hgraef@stat.purdue.edu) with your name and current postal address.

Please allow 2-4 weeks for delivery. Thank you.

Warm greetings from West Lafayette!



I love to read about the accomplishments of the department and the atmosphere of excellence provided to our students. It is wonderful for me to meet the alums who have benefited from it. and I look forward to seeing many of you on August 1, 2010, at the Joint Statistical Meetings in Vancouver, British Columbia, Canada. Our Purdue reception is from 6:30 p.m. to 8:30 p.m. in the Terrace Room of the Fairmont Waterfront Hotel.

To provide an update on President France Córdova's Access and Success campaign, we have reached our goal of matching a \$1,500,000 anonymous gift. Scholarships through the Purdue campus are being given to our most talented students to provide them access to our world-class educational experience. Thank you to all of you who saw the need and provided gifts to support this campaign.

As always and on behalf of the entire faculty and staff, I want to say thank you to each of you who understand the department's need for continued and expanded resources. Your gifts provide our students the opportunity to receive the very best educational experiences and move on to high-level and impressive careers. Your gifts also enable us to enhance our program attracting world-class faculty to the Department of Statistics at Purdue University. Thank you!

Alumni, please remember that we enjoy hearing about what's new in your life and career. So please don't hesitate to share your news with us by going online to the "Send Us Your News/Update Your Information" link found on the alumni page at http://www.stat.purdue.edu/people/alums. And please do contact me if you have questions or need any assistance regarding your philanthropy to our Department of Statistics.

Hail Purdue!

Sandy Howarth Director of Development (765)496-7502 showarth@purdue.edu

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