

StatLinks

News from the Department of Statistics at Texas A&M University to link its Friends and Former Students

In this Issue:

Faculty Recognitions 2-5
 Carroll Donation 6
 Graduates 7
 Faculty Research. 8-9
 Statistics Endowed Chair 10
 Student Recognitions 12-13
 Events. 14-15

A Message From The Department Head

VALEN E. JOHNSON



© 2005 Texas A&M University. All rights reserved. All other trademarks are the property of their respective owners. StatLinks is an official publication of the Department of Statistics at Texas A&M University. It is designed, compiled, and edited by the Department of Statistics.

Welcome to the Fall Edition of *StatLinks*. This issue is dedicated to Dr. Charles “Chuck” Gates, who recently passed away. Dr. Gates contributed to the Department of Statistics for almost three decades before retiring from Texas A&M in 1994.

Several honors have been bestowed upon our faculty. Cliff Spiegelman was recognized as a Fellow of the American Association for the Advancement of Science. Mikyoung Jun received the ASA 2015 ENVR Young Investigator Award. Uschi Müller-Harknett was awarded a Distinguished Achievement College Level Teaching Award from the Association of Former Students, and four faculty members, Keith Hatfield, Derya Akleman, Elizabeth Kolodziej and Henrik Schmiediche, were promoted.

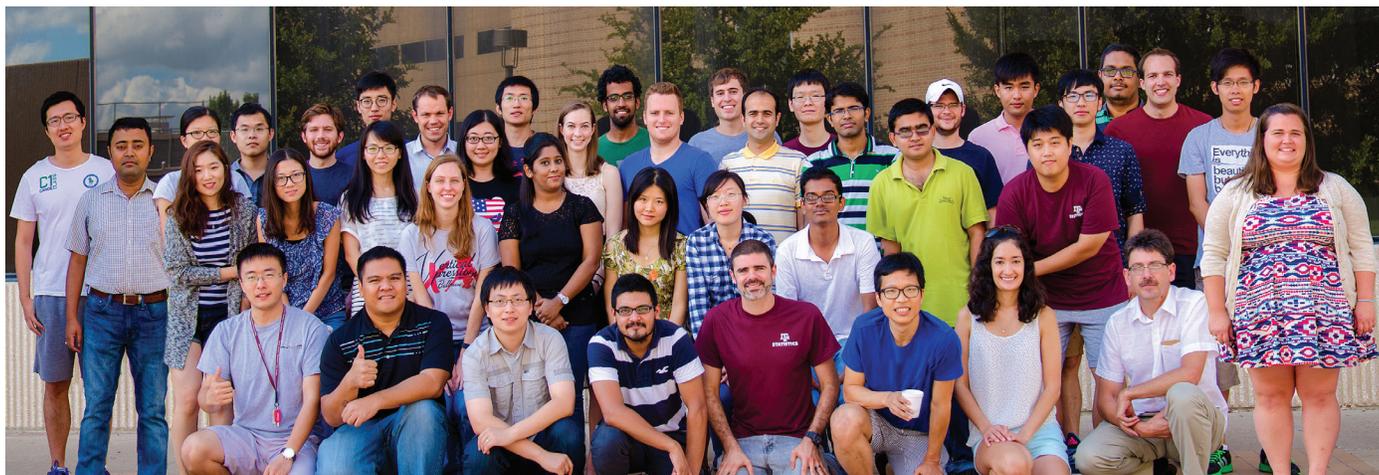
One of our most distinguished alumni, Ersen Arseven, created the Susan M. Arseven '75 Chair in Data Science and Computational Statistics in honor of his late wife. Several graduate students awards were given over the summer and are highlighted herein.

The department hosted several successful events this year, including the

2015 Advanced Placement Summer Institute in Statistics. A Statistics Poster Session was organized and sponsored by the Southeastern Chapter of the ASA and featured regional research conducted by both statisticians and applied scientists. I would like to extend a special thank you to STATA-Corp, which hosted another annual barbeque for the Department. Finally, the Statistical Graduate Student Association hosted the 2nd Annual Faculty and Staff Appreciation Barbeque.

I would like to welcome several new faculty and staff to the Department. Dr. Irina Gaynanova and Dr. Xianyang Zhang have joined the Department as assistant professors, and Uditha Wijesuriya is a visiting assistant professor. We were also lucky to attract two great staff members. Amy Parker now works as an Academic Advisor II and Deanna Stevens is the new Assistant to the Department Head. I wish them all many years of success at Texas A&M.

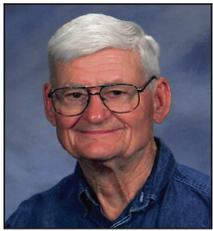
In closing, I would like to express my sincere appreciation to everyone for making this yet another successful year for the Department of Statistics.



Presenting one of the largest Statistics graduate student bodies in the country and undoubtedly the best looking, the Department of Statistics Graduate Student Body. Gig 'em!

Faculty Recognitions

IN MEMORIAM



Dr. Charles Edgar “Chuck” Gates, 89, died peacefully Tuesday, September 8, 2015, at his residence. He was a veteran of World War II and the Korean War. He worked as a statistician and professor at the University of Minnesota for 10 years, then for 28 years at Texas A&M University. His career allowed him to travel extensively, and he thoroughly enjoyed the privilege of visiting 79 countries over the course of his life.

Following his retirement, he served as an income tax volunteer for the AARP. He was a member of Covenant Presbyterian Church. His other interests included playing bridge, collecting stamps, playing tennis, bicycling, and dancing.

A memorial service was held on Monday, September 14, at Covenant Presbyterian Church in College Station. In lieu of flowers, the family requests donations to Hospice of Brazos Valley, Covenant Presbyterian Church, or the Alzheimer’s Association at www.alz.org.

Newton Endowed Service Award

The Texas A&M University College of Science has quietly and dutifully carried out one of its most time-honored traditions, the Spring Recognition and Awards Dinner. 2015 was no exception in that regard, save for one special act befitting another who will be exceptionally hard to follow.



(l to r) Michael Morelius, Ronald Abbott, Leslie Lenser, John Beckerdite, Linda & Joe Newton with Timothy Scott.

During the gala event held on March 26 at Pebble Creek Country Club, in a surprise turn of events, one legendary administrator was honored who has overseen the entire process for the past 15 years as Dean of Science: Dr. H. Joseph Newton.

To commemorate Newton’s selfless commitment to excel-

lence in higher education and to faculty, staff and students in the College of Science and across Texas A&M, members of the college’s External Advisory and Development Council (EADC) teamed up to raise more than \$100,000 to create the Dr. H. Joseph Newton Dean’s Excellence in Service to Science Award. The endowment, established through the Texas A&M Foundation, will support up to four awards each year benefiting full-time students in good standing who are pursuing degrees in the College of Science and who exhibit the same leadership skills council members say Newton has made synonymous with Texas A&M Science during his tenure as dean, which is set to conclude later this year.

In early spring, college development officials began working in discrete tandem with key members of the EADC leadership team to help spread the word about the grassroots effort, primarily through personal telephone calls to each council member. Initially they had hoped to collect enough pledges to create an endowment, a \$25,000 threshold. As the big night drew nigh, however, they realized that more than \$100,000 had been raised or pledged through contributions from nearly three dozen council members and counting.

“I believe the original notion came from discussion with one of the EADC members,” said Dr. John Beckerdite ‘76, current EACD Chair and chief technology officer for College Station-based RBC Technologies. “The council leadership discussed this and agreed to support it and move forward as our way of expressing our thanks and gratitude to Dean Newton for his tremendous contributions to the College of Science as well as for his support for the External Advisory and Development Council.”

On March 26, an unsuspecting Newton opened the evening’s ceremony just as he had every spring since first becoming interim dean in October 2000, then dean in July 2002: by announcing new ADFS inductees and new gifts made to the college since the previous year’s event and subsequently presenting each ADFS honoree and donor with a respective plaque. When he turned the podium over to Associate Dean for Undergraduate Programs Dr. Timothy P. Scott ‘89 for the scholarship-recipient portion of the program per tradition, he was as surprised as anyone in the room to hear Scott break from the well-established norm the two more or less had down to a science during the course of the past decade and a half.

“Well, I’m going to go off script a little bit,” Scott said, as he began executing the purposeful diversion known to only a handful in the crowd. “So, Isaac Newton said, ‘If I have

[continued on next page](#)

seen further, it is by standing on the shoulders of giants.’ The giant we refer to tonight ironically enough is Dr. Joe Newton, who has provided excellence in leadership to this college for the past 15 years. His leadership is built on the principle of putting people first. Dr. Newton, you epitomize all we value at our university: excellence, integrity, leadership, loyalty, respect and selfless service.”

Newton’s reaction, captured in photographs and on video, was both priceless and as valuable as any past gift he has had the pleasure of unveiling during his tenure as dean. (More photos and video can be viewed at: http://www.science.tamu.edu/news/story.php?story_ID=1385#.VxzMKXarRvL.)

“I’m overwhelmed by the scholarship; I’m just overwhelmed,” Newton said upon returning to the podium at Scott’s invitation. “I don’t know what to say. I have absolutely loved being dean of the College of Science. I will miss this so much.”

We appreciate Dr. Newton’s tireless efforts as Dean and will miss you as Dean of the College of Science. However, you will always have a home as a statistician. Congratulations, Dean Newton!

Spiegelman AAAS Fellow

Distinguished Professor, **Clifford H. Spiegelman**, has been recognized as a 2014 Fellow of the American Association for the Advancement of Science (AAAS).

Atlantic Photography Boston. Used by permission.



The ceremony in February at the AAAS Fellows Forum during the 2015 AAAS Annual Meeting in San Jose, California.

Spiegelman is an expert in statistical and environmental forensics as well as a founder within statistics of the field of chemometrics, the science of using data to extract information from chemical systems. He is also a senior research scientist with the Texas A&M Transportation Institute, the state’s transportation research agency. He joined the Texas A&M Department of Statistics in 1987 as an associate professor, earning promotion to full professor in 1990 and to distinguished professor in 2009.

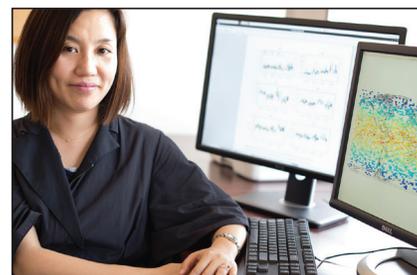
The 2014 AAAS Fellows were formally announced in the “AAAS News & Notes” section of the Nov. 28 edition of the journal *Science*. In addition, he was presented with an official certificate and a gold and blue rosette pin (representing science and engineering, respectively) at the

Specifically, Spiegelman is cited by AAAS “for leadership in addressing complex, real-world problems, especially in chemometrics, transportation, forensics and social program evaluation through the development, application and communication of innovative statistical methodology.”

Spiegelman is a fellow of both the American Statistical Association (ASA) and the Institute of Mathematical Statistics (IMS) as well as an elected member of the International Statistical Institute (ISI). He is a two-time recipient of the ASA Statistics in Chemistry Award for best paper and also has received the 2007 Jerome Sacks Award for Outstanding Cross-Disciplinary Research. Congratulations on this well-deserved honor.

Jun Earns Young Investigator Award

Associate Professor **Mikyoung Jun** has been selected to receive the American Statistical Association’s 2015 ENVR Young Investigator Award, presented by the ASA Section on Statistics and the Environment (ENVR).



The award is given in recognition of outstanding contributions to the development of methods, issues, concepts, applications and initiatives in environmental statistics. It is meant to encourage and recognize younger members of the environmental statistics community, specifically individuals who currently hold memberships in ENVR and who have made distinguished contributions to environmental statistics.

The section broadly defines environmental statistics -- from theoretical and foundational to applications and policy -- in order to recognize the full range of activities that academic, governmental and industrial statisticians and scientists study in statistics and the environment.

Mikyoung joined the Texas A&M Department of Statistics in 2005 and was cited for her outstanding contributions to statistical models and methods for geophysical applications, including the development of covariance functions for spatial and spatio-temporal processes on spherical domains and of methods for assessing goodness-of-fit in spatial models; and for service to the profession. She received her award at the ENVR business meeting and reception during the 2013 Joint Statistical Meetings 2015 in Seattle.

See **FACULTY** on page 4

FACULTY RECOGNITIONS

FACULTY continued...

Jun received her Ph.D. in statistics from the University of Chicago in 2005 just prior to coming to Texas A&M. In the decade since, she has effortlessly dedicated herself to high quality classroom instruction while advising and supervising several students. She is also a highly regarded researcher who has served as associate editor and referee for several top-tier journals. Dr. Jun is a member of the American Statistical Association and the Institute of Mathematical Statistics as well as an elected member of the International Statistics Institute. She was also a member of the ASA ENVR Student Award Committee from 2006-2008.

MÜLLER-HARKNETT WINS AFS AWARD



Professor of Statistics, **Ursula Müller-Harknett**, has been selected to receive a 2015 Distinguished Achievement College-Level Teaching Award awarded by the Association of Former Students at Texas A&M University.

The award was established in 1982 and is given to honor outstanding faculty members for their dedication to teaching. Recipients are recognized for their talent, expertise and devotion on conveying knowledge to students.

Dr. Müller-Harknett joined the Statistics faculty in 2006. She was awarded tenure in 2009 and promoted to full professor in 2013. During her nine years at Texas A&M University, she has become one of the Department's most respected graduate-level teachers. She is a dedicated and capable professor who is committed to maintaining the highest academic standards. Dr. Müller-Harknett has devoted herself to making statistical concepts accessible to all graduate students who take her courses and she has had a major impact on the career paths of many students, and has exerted an extraordinarily positive influence on many others.

The award was presented during the College of Science's Annual Faculty-Staff Meeting and Awards ceremony. Dr. Müller-Harknett received a framed certificate commemorating the occasion and a \$2,000 check from The Association.

FACULTY PROMOTIONS

Keith Hatfield was reappointed as Senior Lecturer effective September 1, 2015. He joined our department in 2005 as Lecturer of statistics and is currently the Course Coordinator for STAT 211. In addition to teaching multiple sections of the course



each semester, he also provides support to the department for new instructors and on-going support for changes in the 211 framework for those who have taught the course in the past. Additionally, Mr. Hatfield provides electric rate and regulatory consulting services to electric utilities, end-use consumers and consumer groups in the private sector for his company, the Hatfield Consulting Group. Congratulations!

Derya Akleman and Elizabeth Kolodziej were both promoted to Instructional Assistant Professor of Statistics and Henrik Schmiediche was promoted to Instructional Associate Professor of Statistics, all effective on September 1, 2015.



Derya Güven Akleman joined our department in January 1998 as a Visiting Assistant Professor and was promoted to Lecturer in August 2002. She served six years in that capacity before being promoted to Senior Lecturer in 2008. In her 17 years of service to the Department and Texas A&M University, she has excelled in the classroom and has held multiple service roles in the Department and at the University level including the Faculty Advisory Committee and the College of Science Diversity Committee. She has published a number of journal articles, book chapters and conference proceedings in addition to being a Member of the American Statistical Association.

Elizabeth Young Kolodziej received a Ph.D. in Statistics in August 2010 under Dr. Michael Sherman and was awarded a Distinguished Graduate Student Award in Teaching. She joined our department in 2012 as an Instructor of Statistical Methods. She has consistent dedication to student development and learning as well as a commitment to service to the Department. In addition to 10 years of teaching statistics, Dr. Kolodziej has created an extensive SAS manual for graduate instruction and has recorded over 100 comprehensive audio-visual explanations of SAS programs. She is also a Member of the American Statistical Association.



Henrik Schmiediche received a M.S. in Statistics (1989) and a Ph.D. in Statistics with Statistical Graphics specialization (1993) from Texas A&M University. He supervises IT employees and maintains IT operations, Linux infrastructure and research servers. As Director of IT for the College of Science he represents the College in campus-wide IT matters and develops a graduate level data management and high performance computing course for Statistics. Dr. Schmiediche has demonstrated outstanding support to the department's computing environment while keeping our facilities at the

[continued on next page](#)

leading edge of technology.

NEW FACULTY

We are pleased to welcome Irina Gaynanova and Xianyang Zhang as new Assistant Professors to the department.



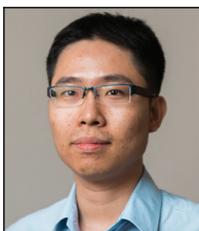
Irina Gaynanova received both a M.S. (2013) and Ph.D. (2015) in Statistics from Cornell University. Her research interests are at the intersection of applied, computational and theoretical statistics and she believes that challenging applied problems give rise to better statistical methodology.

Her primary goal is to aid in the discovery of scientifically meaningful low-dimensional structures in high-dimensional data.

Irina's methodological interests are in the areas of multivariate analysis, machine learning and computational statistics. Additionally, she has worked on a variety of applied problems such as classification of leukemia patients based on DNA methylation profiles, control of false discovery rates in sample size calculations and study of antibiotic molecular actions based on the metabolic profiles.

Irina is a member of the American Statistical Association and the Institute of Mathematical Statistics. She received the Cornelia Ye Outstanding Teaching Assistant Award from Cornell University in November 2014 and upon graduation from Cornell, she became an Assistant Professor of Statistics at Texas A&M on July 1, 2015.

Xianyang Zhang comes to us from the University of Missouri-Columbia where he was an Assistant Professor as well. He received a B.S. in Statistics (2008) from the University of Science and Technology of China and a Ph.D. in Statistics (2013) from the University of Illinois-Urbana Champaign. His research interests include high-dimensional statistics, functional data analysis, econometrics, time series analysis and spatial statistics. His current research focuses on developing new statistical inference procedures for large and complex data sets. In particular, he is working on simultaneous inference for high dimensional data with dependence, and nonparametric estimation and inference for big data.



Dr. Zhang has refereed for top tiers journals such as *Annals of Statistics* and *JASA* and has published papers in *Statistica Sinica*, the *Journal of Royal Statistical Society* as well as the *Annals of Statistics*. He received the Norton Prize for his thesis work in 2012 from UIUC and also he received an ASA Nonparametric Statistics Section Student Paper award during

the 2012 Joint Statistical Meetings. He joined our department as an Assistant Professor of Statistics beginning August 1, 2015.

We look forward to exciting things from our bright new faculty members and we welcome them to the Statistics family!

ANNUAL STATA CORP SOCIAL

The Department of Statistics and StataCorp continued their collaborative efforts with the annual mix and mingle social event. For over 30 years, StataCorp has been a leader in statistical software, providing integrated statistics, graphics, and data management solutions for anyone who analyzes data. The software company graciously hosts this annual event to further strengthen and encourage the working relationship between StataCorp and our department.

Special thanks to Mr. William Gould, President and to Eva Lancaster and Paige Calamari for organizing the event and providing pictures (see below).

We look forward to working with StataCorp for several years to come. Thank you for your continued support of our department!



Raymond Carroll and Marcia Ory Graduate Student Fellowship

BY SHANA HUTCHINS, COMMUNICATIONS MANAGER, COLLEGE OF SCIENCE

As a global expert in error measurement modeling and the inaugural holder of the Jill and Stuart A. Harlin '83 Chair in Statistics, Texas A&M University Distinguished Professor of Statistics Raymond J. Carroll knows firsthand the unquantifiable value of private support.



(From left:) Texas A&M Dean of Science Meigan Aronson, Professor and Head Valen E. Johnson and Distinguished Professor of Statistics and donor Raymond J. Carroll.

As director of the Texas A&M Institute for Applied Mathematics and Computational Statistics (IAMCS) and founding director of the Center for Statistical Bioinformatics, Carroll likewise has a keen appreciation of the importance of graduate stipends in recruiting and retaining top-quality graduate students -- the lifeblood of future breakthroughs in both academic and industrial sectors.

Earlier this month, Carroll did right by both causes, teaming up with his wife and fellow Texas A&M distinguished professor Marcia G. Ory to establish the Raymond J. Carroll and Marcia G. Ory Graduate Fellowship in Statistics through the Texas A&M Foundation to benefit students pursuing graduate degrees in the Department of Statistics. The \$25,000 gift, intended to help recruit top students to the Texas A&M Statistics graduate program, will provide discretionary funds -- \$2,000 per year for four years per student, in addition to nominal relocation support in the initial year -- that the department can use to supplement existing graduate stipends.

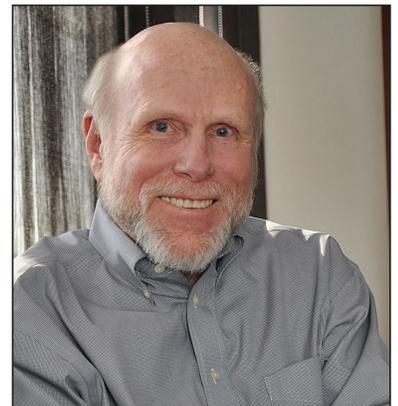
“Marcia and I are delighted to be able to support students who will be leaders in the field,” Carroll said.

Carroll, who joined the Texas A&M Statistics faculty in 1987 and also is a member of the faculties of nutrition and toxicology, is one of the world’s leading experts in a host of statistical

areas, primarily problems of measurement error, statistical regression modeling and statistical methods in genomics. A fellow of the American Association for the Advancement of Science (AAAS), he is internationally renowned as the founder of nonlinear measurement error modeling -- the quantification of uncertainty in statistical regression when predictors cannot be accurately ascertained. His methods in this area are widely used in nutritional and radiation epidemiology, and the related book he co-authored in 2005 is considered the definitive treatment of the field.

Ory, a Regents Professor of Health Promotion and Community Health Sciences (2007) and a Distinguished Professor of Healthy Aging (2013), is an international leader in healthy aging, community-based prevention and wellness. In addition to serving as associate dean of research in the Texas A&M Health Science Center (TAMHSC) School of Public Health, she is director of the Program on Healthy Aging and the academic partner for the Community Research Center for Senior Health. Since 2007, she also is an adjunct professor in Texas A&M Statistics. Ory spent 20 years at the National Institute on Aging (NIA) in Bethesda, Md., prior to coming to the TAMHSC in 2001 and is credited with helping to generate the multidisciplinary study of aging, health and behavior.

“Dr. Carroll is a world-renowned statistician whose research has had an enormous impact on many fields of science -- most notably, of course, in statistics but also in genomics, nutritional science, clinical trials and a host of other areas,” said Valen E. Johnson, professor and head of Texas A&M Statistics.



“Dr. Carroll’s and Dr. Ory’s generosity in providing these fellowships will undoubtedly have a major impact in the department’s ability to attract the very best graduate students. The draw of being named a Raymond J. Carroll and Marcia G. Ory Graduate Fellow at Texas A&M University will certainly be attractive to any student with a serious interest in statistical science.”

For the full story, please visit <http://www.science.tamu.edu/articles/1483>.

AUGUST 2014 GRADUATES**PH.D.**

Chown, Justin (Müller-Harknett)
 Feng, Shuo (Huang)
 Gregory, Karl (Carroll)
 Miao, Jingang (Wang/Sinha)
 Qu, Yuan (Huang)
 Roh, Soojin (Jun/Genton)
 Sarkar, Abhra (Mallick/Carroll)
 Song, Qifan (Liang)
 Wang, Yanqing (Carroll/Mallick)

MASTERS

Algeri, Sara (Johnson)
 Goldsmith, Anne Wiley (Hart)
 Wang, Ruoxin (Wang)

ONLINE MASTERS

Beltramo, Alvin (Dabney)
 Chapman, Richard (Sheather)
 Costello, Lance (Sheather)
 Hejmadi, Uday (Sheather)
 Liu, Dan (Sheather)
 Pestrikov, Aleksei (Sheather)
 Philbin, Robert (Jun)
 Roane, Warren (Sheather)
 Zhang, Wenling (Jones)

DECEMBER 2014 GRADUATES**PH.D.**

Kim, Jinsu (Liang)
 Lin, Fang-Yu (Liang/Carroll)
 Lu, Ming (Dahm)

ONLINE MASTERS

Aucoin, Deron (Zhou)
 Byler, Daniel (Sheather)
 Evert, Daniel (Sheather)
 Goodhue, Jonathan (Sheather)
 Gosink, John (Zhou)
 Johnson, Kurt (Jones)
 Li, Kelvin (Sheather)
 Lucas, Geoffrey (Zhou)
 Magagnoli, Joseph (Sheather)
 Przybylinski, Eric (Zhou)

MAY 2015 GRADUATES**PH.D.**

Chen, Shuai (Zhou)
 Goodard, Scott (Johnson)
 McGuffey, Elizabeth (Carroll)

MASTERS

Berland, Stephanie (Sherman)
 Hollingsworth, Ryan (Longnecker)

ONLINE MASTERS

Anderson, Garrett (Sheather)
 Anuskiewicz, Sydney (Sheather)
 Barnett, Teresa (Sheather)
 Berger, Dolores (Johnson)
 Campbell, Lynetta (Sheather)
 Chacon, Felipe (Sheather)
 Clark, Patrick (Sheather)
 Czarnek, John (Sheather)
 Darschewski, Nicholas (Sheather)
 Do, Jin (Sheather)
 Duffy, Thomas (Sheather)
 Fan, Wenhong (Sheather)
 Ferguson, Jeremy (Sheather)
 Garrett, Paul (Sheather)
 Jia, Ming (Huang)
 Kirk, Jeffrey (Sheather)
 Knous, Michael (Sheather)
 Krippendorf, Blake (Dabney)
 Kui, Raymond (Sheather)
 Moczydlowski, Alana (Sheather)
 Nowacki, Andrea (Sheather)
 Pang, Wenxin (Sheather)
 Presto, Jonathan (Sheather)
 Roijen, Johannes (Sheather)
 Sakamoto, Daniela (Sheather)
 Talarico, Eric (Sheather)
 Uland, Susan (Sheather)
 Zhang, Sui (Sheather)

ANALYTICS MASTERS

Agnew, Aaron (Sheather)
 Bergeron, Jr., James (Sheather/Jones)
 Bowden, Steven (Sheather)
 Engle, Lauren (Sheather/Jones)

MAY ANALYICS continued

Leonard, Jr., Danny (Sheather)
 Parrott, Erin (Sheather)
 Shifarrow, Salsawit (Sheather/Jones)
 Tarhan, Bora (Sheather/Speed)

AUGUST 2015 GRADUATES**PH.D.**

Jeong, Jaehong (Jun)
 Rahman, Shahina (Carroll/Ma)
 Zhang, Bohai (Huang/Sang)
 Zhang, Nan (Huang)

MASTERS

Durgin, Bryce (Dabney)
 Seem, Emily (Wehrly)

ONLINE MASTERS

Carrothers, Kathleen
 (Sheather/Speed)
 Hirt, Kellie (Sheather/Speed)
 Mantripragada, Venkata
 (Sheather/Speed)
 Meehan, Adrienne (Sheather/Speed)
 Morris, John (Sheather/Speed)
 Schouten, Vivian (Sheather/Speed)
 Stout, Patrick (Sheather/Speed)
 Stromberg, Matthew
 (Sheather/Speed)
 Wen, Yujin (Jones)

Statistical Challenges in Astronomy: The Period Luminosity Relation

BY JAMES LONG, ASSISTANT PROFESSOR OF STATISTICS

Many early methodological developments in statistics were inspired by applications in astronomy. For example, in the early 19th century Gauss developed linear regression in order to determine the orbits of bodies about the sun. In the last 20 years, advances in digital imaging techniques have led to an explosion of data in astronomy. Here at Texas A&M, collaborations between the Statistics and Physics and Astronomy departments are developing statistical methodology necessary for using these data sets to better understand our universe.



Figure 1: Telescopes take images of the night sky. A portion of one of these images is shown. Photometric pipelines identify objects in images, estimate their brightness, and quantify uncertainty on the brightness estimate.

Figure 1 shows a small section of an image taken by a telescope. The small dots of light are mostly stars and galaxies. Astronomers

and statisticians have developed photometric “pipelines” for determining the locations of these objects, estimating their brightness, and quantifying uncertainty on these brightness measurements. Some of the most interesting objects in the sky are periodic variable stars - stars that vary in brightness periodically over time. In order to find periodic variables, astronomers repeatedly image the same region of the sky many times and identify objects which are changing in brightness.

Figure 2a shows one example of a periodic variable that was imaged many times. On the x-axis is the time the image was taken and on the y-axis is the brightness of the object in magnitudes. This is known as the light curve of the star. Since magnitudes are inversely proportional to brightness, lower magnitudes are plotted higher. Each image of this star was taken through one of two photometric filters placed in front of the telescope. The blue circles represent images taken through the V-band filter while the orange-x's represent images taken through the I-band filter. Modern surveys in astronomy collect millions of periodic variable stars.

While the fluctuations in brightness initially appear random, the star is actually varying in brightness periodically. Using period estimation algorithms developed by astronomers and statisticians, one can estimate the period and make a plot of the light curve with time replaced by phase (see Figure 2b).

Once many periodic variables have been collected by a survey, [continued on next page](#)

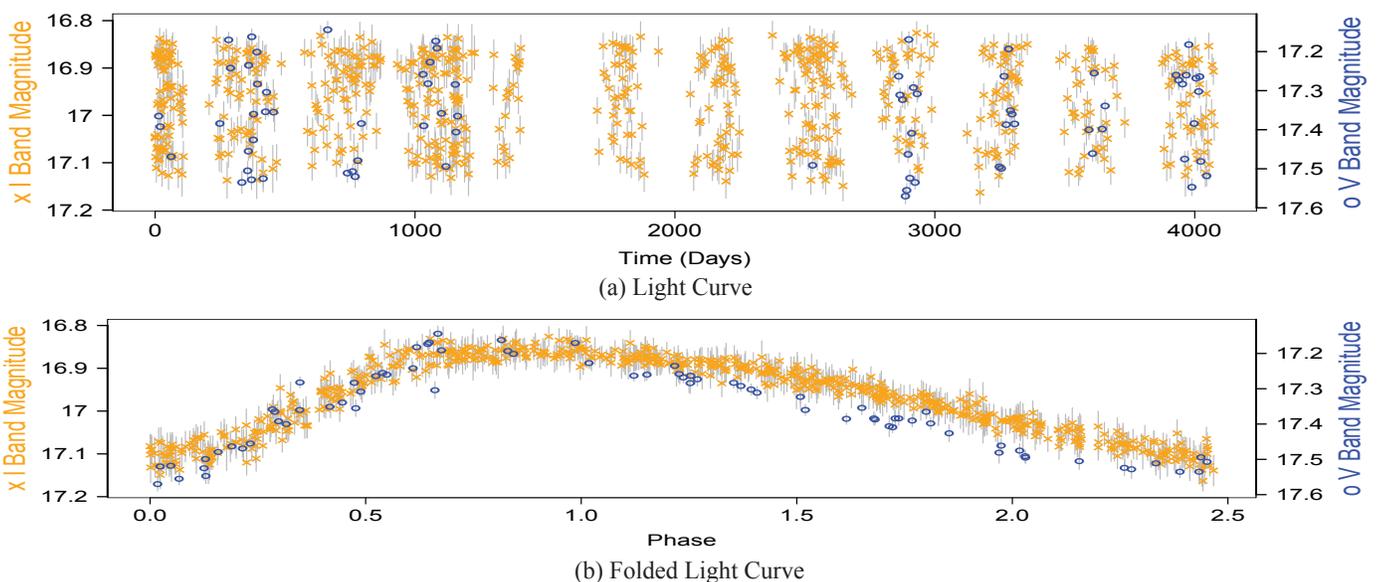


Figure 2: (a) The light curve of the star OGLE-LMC-T2CEP-041 in the I band (orange \times) and V band (blue \circ). Given these measurements, one can estimate the common period of the I and V bands. (b) Once the period of ≈ 2.48 days is determined from a), the pattern of brightness variation becomes apparent when brightness is plotted against time modulo period. This is known as the folded light curve.

one can estimate period and mean magnitude (luminosity) for each. Figure 3 displays a scatterplot of luminosity versus period for a set of several hundred periodic variables observed in the Large Magellanic Cloud (a Milky Way satellite galaxy). The stars fall on one of several period-luminosity (PL) relations. Different classes of periodic variables follow different linear relations. The classes are generally related to the astrophysical reason for periodic brightness variation.

The period-luminosity (PL) relation has played a fundamental role in our understanding of the universe. When observing objects through a telescope, it is generally very difficult to tell how far away they are. A nearby dim star will have the same apparent magnitude as a distant, more luminous star. The linear relation between log period and luminosity allows us to break this degeneracy and determine distances to objects that are far beyond what is possible with stellar parallax. Cepheid PL relations have been a fundamental component in the discoveries that our universe is expanding (1930s) and that this expansion is accelerating (1990s).

Astronomers and statisticians at Texas A&M are working together to develop the statistical tools necessary for fully realizing the science potential of periodic variable stars. Lucas Macri and Wenlong Yuan from Physics and Astronomy and Jianhua Huang, Shiyuan He, and myself from Statistics are developing methods for determining the PL relationship for Mira

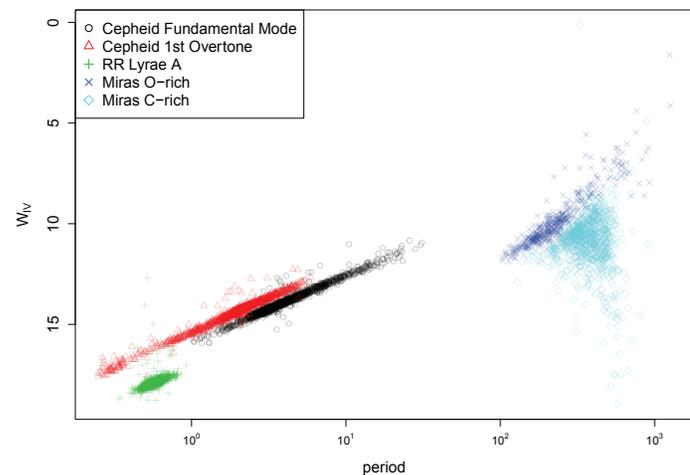


Figure 3: Period luminosity relation for several classes of periodic variables.

variables in the galaxy M33. These light curves are far noisier than the well sampled data in Figure 2a. Existing methodology for estimating periods and classifying the stars, both essential steps to determining the PL relation, fails with this data. We are developing a Gaussian process (GP) model to address the poor temporal sampling and non-periodic varia-

tion in Mira light curves. This has led to improved period estimates and the creation of useful features for distinguishing between different Mira subclasses. With the improved period estimates and classifications, we hope to be the first group to successfully estimate the Mira PL relation outside the Magellanic Clouds. ■



About the Author

James P. Long joined our faculty in August 2013. He received a B.A. from Columbia University in 2008 and a Ph.D from the University of California, Berkeley in 2013. His fields of research include Astrostatistics, functional data, machine learning, density estimation, measurement error.

STATISTICS POSTER SESSION

Organized and sponsored by the Southeastern Texas Chapter of the American Statistical Association (SETCASA), this poster session showcased regional research in statistics. Both statisticians and applied scientists worked on problems with a strong statistical component and presented their research. Held on Friday, October 16, 2015 at Rudder Tower, Room 301 over lunch with several colleagues and students. To find out more details from this event, please [click here](#).



Former Student, Ersen Arseven Creates TAMU Statistics Chair



Ersen Arseven's eyes twinkle as he reminisces about his late wife, Susan, and how he once tried to persuade her to take on one of his programming assignments during their graduate school days at Texas A&M University -- his in the Department of Statistics and hers in the Department of Computer Science and Engineering.

"She told me in no uncertain terms that she wouldn't do it for me, but that she would be happy to teach me how to do it for myself," he said.

Ersen managed to complete the project and, within a year of each other, the young Aggie couple did the same for all coursework related to their respective doctorates in statistics (1974) and computer science (1975). After leaving Aggie land, they embarked on pioneering careers in biostatistics and information technology strategy and a 25-year life together in Nyack, New York, that was cut short by Susan's untimely death in 2000 from breast cancer at the age of 59.

Ersen recently commemorated the 15-year anniversary of Susan's passing by establishing his most recent memorial endowment at Texas A&M in her honor, the Susan M. Arseven '75 Chair in Data Science and Computational Statistics. The chair, created through the Texas A&M Foundation, is intended to support the teaching, research, service and professional development activities of statistics faculty who are successful in both publishing and attracting funding in the areas of integrating statistical and computational methods for application in diverse areas of science, technology and engineering. Ideal fields of impact range from machine learning to uncertainty analysis of computer-model outputs to modeling of spatio-temporal environmental data.

"I hope the Susan M. Arseven '75 Chair in Data Science and Computational Statistics will stimulate and enable closer collaboration between statisticians, scientists, engineers and technologists at Texas A&M in teaching courses, doing research and publishing their work together," Ersen said.

The Arseven Chair marks the third in the history of the Texas A&M Department of Statistics, which also features the

George P. Mitchell '40 Chair in Statistics, held since 2006 by Texas A&M statistician and Dean of Science H. Joseph Newton, and the Jill and Stuart A. Harlin '83 Chair in Statistics, held since 2013 by Distinguished Professor of Statistics Raymond J. Carroll.

"It is a great honor for the Department of Statistics to receive the Arseven Chair, which will have an enormous impact on our statistical research and graduate training,"

said Valen E. Johnson, professor and head of Texas A&M Statistics.

"This gift will assist in the recruitment, retention and professional development of faculty working on the frontiers of statistics,

computer science and data science. At the same time, it will provide critical resources for graduate training and play an important role in facilitating the interaction of Texas A&M faculty and graduate students with researchers from other universities. The resources associated with this gift will undoubtedly result in advances in statistical machine learning, spatio-temporal modeling, and uncertainty quantification."

A generous supporter of his department, college and university, Ersen has established three previous endowments at Texas A&M in Susan's memory, one of which honors her as namesake of the Susan M. Arseven '75 Conference for Women In Science & Engineering, hosted annually by the College of Science and featuring the presentation of two \$1,000 Susan M. Arseven '75 Make-A-Difference Memorial Awards recognizing deserving female graduate students pursuing master's or doctoral degrees in science, engineering or technology. Together with one of his classmates, Luisa Sia '74, he also established the Anant M. Kshirsagar Endowed Fellowship in Statistics in tribute to one of their favorite Texas A&M professors.

For the full story, please visit http://www.science.tamu.edu/news/story.php?story_ID=1471#.VgwUmvIvHbD. ■



2014 Capital One Competition

Statistics graduate students once again celebrated after nearly a month's worth of teamwork and took first place at the 2014 Capital One Modeling Competition.

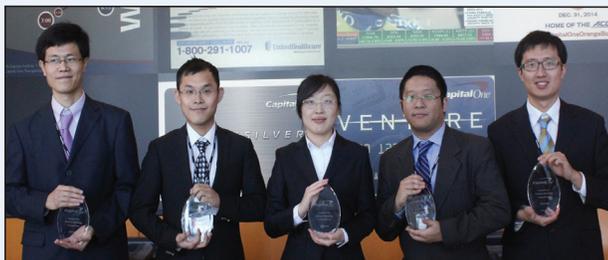
For the second time in the past three years, a Texas A&M Statistics team -- Quan Cai, Liang Liang, Senmao Liu, Yujin Wen and Jingnan Xue -- took first place in the intense annual competition that puts individual student groups and their collective data analysis skills to the test in a select modeling-related area; in this case, search engine marketing (SEM) for first-position advertisements. Each team member received a cash prize of \$1,000.

In addition, a second Texas A&M team advancing to the five-team final, held November 21 at Capital One's corporate headquarters in McLean, Va., finished third: James "JD" Peiskee, Indu Ramalingaiah, Xiao Wang and Bohai Zhang. All finalists had their travel expenses paid by Capital One, and each received a Capital One Modeling Competition award as a reward for being members of the top five teams.

"Both teams worked hard and had outstanding presentations," said Edward Jones, who recruited and mentored all Texas A&M team members along with Simon Sheather. "We're so proud of our students. To have so little time and to see our students execute the model successfully -- and to take two of the three top spots is amazing," Jones said.

Capital One provided each team with a dataset they could use to develop a statistical model capable of optimizing ad placements and bidding while also reducing cost. The students had three weeks to solve the complex problem. Each team then was judged on the quality of its approach to analyzing the data and how its predictions ultimately did.

Texas A&M has been invited to enter the prestigious competition every year since its inception in 2012. For three consecutive years, both Texas A&M teams have advanced to the finals. ■



First Place Winners: (from left) Senmao Liu, Jingnan Xue, Liang Liang, Yujin Wen and Quan Cai

New Statistics Staff



Amy Parker joined our staff on September 15, 2014 as an Academic Advisor II. She received a Bachelor's degree in History from Texas A&M University. She was previously an Administrative Assistant, just filling in for our Distance Learning Program for four months. She processed preliminary student applications and maintained their databases. Before joining the Statistics Department, Amy worked at Reynolds and Reynolds in College Station creating custom contracts and managed US and International Sales Reports.

Amy and her husband, Stephen love to travel. They have visited four continents and plan to make South America the fifth. Her other hobbies include cooking, cheering for the Houston Astros, and she enjoys outdoor activities such as hiking, cycling and playing intramural kickball.

She has been an extraordinary advocate in her Advisor role, advising and forcing into/dropping classes for students. She's the main contact for on-campus graduate applications, while handling all applicant questions and inquiries. She also arranges prospective student visits to the department. We are very fortunate to have her!

Deanna Stevens joined our department on August 1st as the new Assistant to the Department Head. Previously, she served as the Assistant to the Dean at the National University in San Diego, California where she managed the office, planned events and helped with accreditation. Deanna has also been Assistant to the Associate Provost and also assisted the President of a billion dollar publishing company.



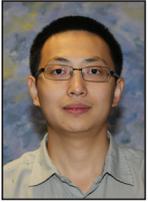
Deanna loves to travel and has visited Asia and Europe. Interestingly, she filmed one episode of a reality TV show called *Lords of War* but was cut out of the episode because she wasn't dramatic enough. She has

continued on page 13

Graduate Student Awards

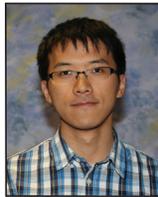
CONNOR AWARD

The Statistics Department Awards Committee selected Kejun He and Shiyuan He as the 2015 William S. Connor Award recipients. This award is presented to the student(s) whom the committee deems the most outstanding among current students who have successfully passed both the Theory and Methods Qualifying Exams at the Ph.D. level and have completed eight specified required courses.



Kejun He received a Bachelor's degree in Mathematics from Peking University in 2010 and also studied for three years as Ph.D. candidate at the State University of New York before joining our Ph.D. program in 2013. He is currently working under the advisement of Jianhua Huang and expects to receive his doctorate in 2018. Kejun will seek a academic job after graduation but is also open to industrial and business opportunities as well.

Shiyuan He received a Bachelor's in Mathematics from Nankai University in 2010 and a MS degree in Statistics from Renmin University in 2013. He is currently a Ph.D. candidate also under the advisement of Jianhua Huang and conducting research on astro-statistics, functional data and manifold optimization in statistics. He expects to receive his degree in 2017 and pursue an academic position.



The award was formally announced at the Aggie Reunion in Seattle. Congratulations to you both on this honor!

KSHIRSAGAR FELLOWSHIP

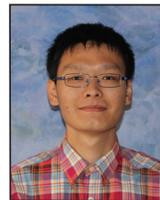
The Anant M. Kshirsagar Endowed Fellowship was established through the Texas A&M Foundation in 2010 by Texas A&M former students Ersen Arseven '74 and Luisa Sia '74 to honor their beloved professor, Dr. Anant M. Kshirsagar. Eligible students are selected on the basis of course grades, classroom performance and teaching assistant duties to receive this prestigious fellowship. The award recognizes the brightest and best performing graduate students and provides one or more fellowships to full-time students pursuing graduate degrees in the Statistics Department. This year, three outstanding students have been selected to receive the 2015 Kshirsagar Endowed Fellowship. Congratulations to Richard Payne, Yabo Niu and Tianying Wang.

Richard Payne is a 3rd-year graduate student in our department studying under the advisement of Bani Mallick. He re-

ceived a Bachelor's in Statistics from Brigham Young University in 2013. Richard plans to graduate in May of 2018. He is currently researching Bayesian big data classification. "My current plans are to obtain a job in industry to create business value through statistics. I also plan to continue to help individuals in become more statistically literate through both professional and casual interaction."

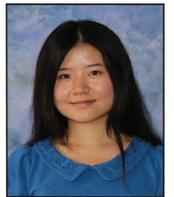


Richard Payne was also featured in a "Labors of Lab" video produced by the College of Science. He was recruited as the first profile subject for our department and they are looking for more subjects for the future. The video can be viewed on our web page as well as our social media links. Special thanks to Chris Jarvis in the College of Science for producing the video.



Yabo Niu received a Bachelor's in Statistics from Nankai University in 2013. He is currently pursuing a Ph.D., also under the advisement of Bani Mallick. His research is in Bayesian Statistics and Graphical Models. Yabo expects to receive his doctorate in 2019. "After graduation, I want to spend one or two years on a postdoctoral position and then find a faculty position in other university or medical research center like M.D. Anderson in Houston to continue to work in academia." Yabo is encouraged by receiving this award and wishes to thank Drs. Arseven and Sia for their generous support. He also adds, "I am truly grateful for all the support and help from faculty and staff in the statistics department."

Tianying Wang earned a Bachelor's degree 2014 in Statistics from Renmin University prior to joining our department. She is working under the advisement of Raymond Carroll and expects to receive her Ph.D. in 2019. Her perspective research interests are functional data, measurement error, Bayesian and data mining. After graduation, Tianying will pursue an academic job however, she is also open to industrial and business jobs. She also expressed sincere appreciation for being named recipient of the Kshirsagar Fellowship.



PARZEN GRADUATE RESEARCH FELLOWSHIP

The Emanuel Parzen Graduate Research Fellowship Award was created to recognize students who have demonstrated exemplary research, above and beyond what is expected for

[continued on next page](#)

graduation. The 2015 Parzen Graduate Research Fellowship was awarded to **Jaehong Jeong**.



Jaehong received a Bachelor's degree in Statistics from the University of Seoul in 2008 and a M.S. degree in Statistics from Korea University in 2010. He earned his Ph.D. in August of 2015 under the direction of Mikyoung Jun. He has since began a position at King Abdullah University of Science and Technology (KAUST) as a Postdoctoral Fellow and is now working with Dr. Marc Genton.

The main area of research for Jeong includes spatio-temporal statistics, spatial covariance models on a sphere, financial statistics, asymptotic option pricing with lévy process. Congratulations on this well-deserved honor!

OUTSTANDING MS PROJECT AWARD

Lynetta Campbell, Distance Student was named the Inaugural Recipient of the Department of Statistics Outstanding MS Project Award. She was selected for this award because of her outstanding presentation on her project entitled "Predicting Sound Pressure Levels."



Lynetta has been involved with the Statistics graduate department for several years. She took her first classes while earning a MS in Mathematics from Texas A&M in 2007. After receiving her Master's she returned to our department to work on certificates that were offered. "I enjoyed that so much that I joined the department as a degree seeking candidate and graduated in May of 2015." Since 2006, Lynetta has worked as a Consultant for an Independent Data Analysis Consulting and hopes that, having now completed her degree, that she can expand that work.

Ms. Campbell received a certificate and check for \$1000 for receiving this award. The official announcement was made during the 2015 Aggie Reunion at the Joint Statistical Meetings in Seattle in August. Congratulations on this award and we wish you the best of luck in future endeavors!

SGSA OFFICERS

The Statistics Graduate Student Association elected the following students as officers for the 2015-2016 academic year: Alex Little, Amir Nikooienjad, Patrick Herta, Lauren Stabile and returning for a second year, Quan Cai.



Alex Little
President



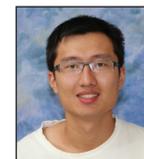
Amir Nikooienjad
Vice President



Patrick Herta
Treasurer



Lauren Stabile
Secretary



Quan Cai
Web Designer

We welcome the new officers and look forward to all of the exciting SGSA events throughout the year! ■

STAFF continued from page 11

five children; Chris, a former Marine who speaks Farsi, Dari and Tajik; Makayla, who is an international fashion model and has walked the New York Fashion Week runway; Justin (13) and Zan (6) who both want to be scientists when they grow up (hopefully Deanna can steer them towards the field of statistics); and Tara (11) who also models and has never met a stranger.

As Assistant to the Department Head, Deanna is responsible for the majority of all correspondence sent on behalf of the department head; including emails, responding to university requests and following up on his behalf. She organizes, schedules and keeps the Department Head informed of all meetings and meeting requests. Additionally, she assists and oversees the recruiting and hiring of new faculty and process any hiring paperwork required by the university, just to name a few.

We are very excited to welcome Amy and Deanna to the Statistics family and wish them many years of success! ■

2015 Aggie Reunion, Seattle, Washington

The annual Aggie Reunion was held during the Joint Statistical Meetings in Seattle, Washington on Monday, August 10, 2015. Current faculty, students, alumni and special guests gathered together to reconnect and celebrate statistics. Join us next year for the 2016 JSM in Chicago!



12th Man Treatment

Former Dean of Science, H. Joseph Newton was honored in Seattle with the 2015 12th Man Award during the Aggie Reunion. Recognizing a faculty member for long-term contributions to the department, the annual award is the final one unveiled at the Reunion. Val Johnson presented Newton with his personalized 12th Man jersey and treated him to a customized slideshow highlighting his career achievements as dean, former department head and professor of statistics. In the true spirit of 12th Man tradition, we are expecting to have Newton back in the department on a regular basis soon. Gig 'em, Dr. Newton!



2015 Advanced Placement Summer Institute in Statistics

After a seven-year hiatus, the Advanced Placement Summer Institute in Statistics returns to Texas A&M. Professor Emeritus, James Matis returned as Director and Mr. Michael Legacy returned as Instructor. The first AP Workshop was offered in 1996 (with Dr. Matis and Mr. Legacy) and was held annually until 2008. This year it was held on July 6-9, 2015 in the Blocker building and we welcomed eight teachers (new and experienced) to the Institute. We expect to continue the workshop in the coming years and hope to educate more teachers next summer. Please check back soon for details on the 2016 Summer Institute scheduled for July 18-21.



Faculty & Staff Appreciation BBQ

The 2nd annual Statistics Graduate Student Association (SGSA) Faculty and Staff Appreciation BBQ was held on March 29, 2015. The graduate students show their appreciation for all the hard work from the faculty and staff of the department throughout the year. Special thanks to the SGSA Officers as well as the entire student body for hosting this event!



www.stat.tamu.edu



Elaine James, Editor

Department of Statistics
3143 TAMU
College Station, TX 77843-3143
☎ 979-845-3141
☎ 979-845-3144
Email: statlinks@stat.tamu.edu

Follow us on:



UPCOMING EVENTS

Statistics Holiday Party

Friday, December 11, 2015
College Station, Texas

Structured Multivariate Data Workshop

Organized by Mohsen Pourahmadi and Anirban Bhattacharya
January 14-16, 2016

Texas A&M University Campus

<http://www.stat.tamu.edu/multivariate-statistics-workshop/>

Registration is now open!

What's In The Next Issue?

- Stay tuned for details on an upcoming Big Data Conference organized by Bani Mallick, scheduled for September 22-24, 2016.
- We will continue to keep you posted on events and special conferences hosted by the department.

📌 IMPORTANT NOTICE

Please help us verify your contact information and stay connected to receive future online issues of *StatLinks*. Email us at statlinks@stat.tamu.edu and let us know if your contact information has changed or if you wish to be added or removed from the *StatLinks* email list.



STATISTICS
TEXAS A&M UNIVERSITY