2016-2017

StatLinks

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

In this Issue:

A Message From The Department Head

VALEN E. JOHNSON

STATISTICS
TEXAS A&M UNIVERSITY

Chris Manuel with Val Johnson as he delivers a precise serve to opponents in a friendly game of volleyball during the SGSA Faculty Appreciation BBQ.

It is my pleasure to welcome you to the 2016-2017 Edition of *StatLinks*. I dedicate this issue to Distinguished Professor Emeritus Emanuel Parzen and retired Associate Professor Omer Jenkins, both of whom passed away in 2016.

This issue showcases the numerous awards and achievements received by our faculty, former students, students, and staff during the past year. These awards exemplify the outstanding research, teaching and administration that everyone in the Department contributes to our success, and I am very pleased that individuals within the Department were selected for these honors.

Dr. Alan Dabney received the Association of Former Students Distinguished Achievement Award in Teaching and a University Professorship for Undergraduate Teaching Excellence. Dr. Bani Mallick received a Fulbright Distinguished Chair appointment. Dr. H. Joseph Newton was recognized with the creation of a Dr. Joseph Newton Graduate Student Service Award by alumni of the College of Science and Dr. Clifford Spiegelman received the Don Owen Award. Dr. Mohsen Pourahmadi received the 12th Man Award for long-term contributions to the Department at the 2016 Aggie Reunion in Chicago. Dr. Anirban Bhattacharya and Dr. Matthias Katzfuss were selected to receive NSF CAREER Awards. Elaine James was awarded the Outstanding Staff Achievement Award by the College of Science. In addition to providing superb administrative support to the Department, Elaine also serves as editor of *StatLinks*.

Many exciting events have occurred in the Department this year. I am pleased to report that the undergraduate degree program in Statistics is now underway. The program's first students began in Fall 2016, and it appears that we will have nearly 100 undergraduate majors by the fall of 2017. We will also graduate our first major this May, Tessa Johnson, who will begin graduate studies in statistics at Duke University next fall. The Big Data Modeling, Computation & Analytics Conference and the Insight and Strategies for Professional Success Symposium were both huge successes. Dr. Suhasini Subba Rao was promoted to Professor in September of 2016 and Hwa Chi Liang became an Instructional Assistant Professor. Irma Hernandez-Magallanes officially joined the Department as a Visiting Assistant Professor and has been active in teaching our fundamental principles of statistics courses to undergraduates.

I would also like to congratulate our current students for their noteworthy achievements. Yabo Niu received the William S. Connor Award, Shiyuan He received the Anant M. Kshirsagar Endowed Fellowship Award, Robert Phillbin received the Howard F. Newton Memorial Graduate Student Teaching Award in Statistics, Minsuk Shin received the Emanuel Parzen Graduate Research Fellowship Award, and Amir Nikooienejad received the George Bush Presidential Library Foundation Travel Grant.

Other notable achievements included the award of the 2016 Parzen Prize to Dr. William Cleveland. Four former students also received honors. Dr. Scott Holan received the Hartley Award. Dr. Jeffrey Morris was named the recipient of the Del & Dennis McCarthey Distinguished Professorship at M.D. Anderson Cancer Center, Dr. Arnab Maity was promoted to Associate Professor at North Carolina State University, and Gregory Cepluch received the Woodrow Wilson National Fellowship Foundation Teaching Fellow. Congratulations to all.

Finally, I am delighted to announce that two new faculty members will join our ranks next fall. Dr. Debdeep Pati and Dr. Raymond Wong will both join the Department in September 2017. We have also been very fortunate to add Andrea Dawson, Academic Advisor II, to our staff; Andrea has already made significant contributions to the graduate program by streamlining our graduate admissions processes and aiding in the recruitment of the next generation of TAMU statisticians.

Faculty Recognitions

NEW FACULTY

The department welcomes two new faculty members this fall. Please join us in welcoming Dr. Debdeep Pati and Dr. Raymond Ka Wai Wong to the Department of Statistics Faculty.

Debdeep Pati received a MS in Statistics in 2010 and PhD in Statistics in 2012 both from Duke University under the direction of David Dunson. Prior to that he earned a MS in Statistics with a specialization in Mathematical Statistics and Probability in 2008 from the Indian Statistical Institute, Kolkata. He received an honorable mention for the Leonard J. Savage Award for outstanding dissertation in Bayesian statistical theory and methods in 2013 from the International Society for Bayesian Analysis and a Distinguished Student Paper Award from the International Biometric Society (ENAR). He is an Associate Editor of *Sankhya, Series A* (Mathematical Statistics and Probability).

Debdeep's research involves developing Bayesian methods for complex objects including high-dimensional sparse vectors, matrices, shapes of non-Euclidean objects and large graphs. He is also interested in studying Bayesian model selection consistency when the marginal likelihood is analytically intractable. Modeling the distributions of objects contained within images motivated some of his collaborative work, e.g., in applications of tumor tracking in targeted radiation therapy. More recently, he has become interested in building models for discovering communities in large networks and to predict cognition from connectomics data.

Debdeep Pati is a member of the American Statistical Association, International Biometric Society (Eastern North American Region), International Society for Bayesian Analysis, Institute of Mathematical Statistics as well as the International Indian Statistical Association.

Raymond Ka Wai Wong received a MS degree in Statistics in 2010 from the Chinese University of Hong Kong and a PhD in Statistics in 2014 from the University of California at Davis. He is the recipient of a Best Student Paper award from the International Indian Statistical Association and a Los Alamos Statistical Sciences Conference Grant.

Raymond's research is mostly problem-driven and has its roots in both scientific and engineering applications. These problems arise from astronomy, brain imaging, computer experiment and recommender systems. Many of them involve modern data complications such as big data size, high dimensionality and manifold structures. He broadly tackles them with nonparametric and semi-parametric modeling, combined with efficient computational techniques.

Raymond Wong is a member of the American Statistical Association, the Institute of Mathematical Statistics and the International Chinese Statistical Association.

FACULTY PROMOTIONS

Associate Professor, Suhasini Subba Rao has been promoted to Professor of Statistics, effective September 1, 2016.

Dr. **Suhasini Subba Rao** received her Ph.D. from the University of Bristol in 2001 and joined our faculty in 2006. She works in the area of stochastic processes, a major sub-field of statistics that includes time series analysis. Her research has focused on extending Fourier methods to the analysis of non-stationary stochastic processes, detection of non-stationary processes, and Fourier analyses of processes that are not defined on regular lattices.

Subba Rao has taught a variety of undergraduate and graduate courses since joining the department. She also serves as primary advisor and advisor to a number of doctoral and masters students. She has been extraordinarily active as a referee and associate editor, reviewing scores of manuscripts each year while also serving as an associate editor of *Statistics* since 2011. In addition to journal service, Subba Rao has served as an NSF panelist on two occasions.

Lecturer Reclassifications

Hwa Chi Liang was reclassified from Senior Lecturer to Instructional Assistant Professor effective January 1, 2017. She received her PhD in statistics from the University of New Mexico in 2003 and joined our faculty in 2014 after serving at Washburn University. Dr. Liang

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demonstrates consistent dedication in providing high-quality instruction to statistics students as well as a commitment to service to the department. She has served as a member of the Undergraduate Committee and a Coordinator for STAT 302.

Irma Hernandez-Magallanes was reclassified from Lecturer to Visiting Assistant Professor effective January 15, 2017. She received her Ph.D. in statistics from the University of California, Berkeley in 2010 under the direction of David Brillinger and joined Texas A&M in 2011 to complete a postdoctoral fellowship with the Institute of Applied Mathematics and Computational Science (IAMCS). She will be teaching three sections of STAT 302 in the 2017 fall and spring semesters.

AWARDS & RECOGNITIONS

Dabney AFS Distinguished Achievement

Alan Dabney was among 24 Texas A&M University faculty and staff to be honored by the university and The Association of Former Students with a 2017 Distinguished Achievement Award.

Alan Dabney, Associate Professor of Statistics, earned a Ph.D. in biostatistics from the University of Washington. Since joining the College of Science faculty in 2006, Dabney has dedicated himself to undergraduate teaching. His particular strengths are in transforming complicated material into easily accessible lessons and in developing inventive curriculum that can be used by other faculty. His innovative approach to teaching is exemplified by his creation of an educational video that features him on a green screen with special effects as he presents statistics lectures to undergraduates. The video was so successful that Freeman Publishing secured his services for the production of a series of 35 similar video lectures on introductory statistics. Dabney has coauthored The Cartoon Introduction to Statistics, which presents introductory statistics material in a graphic novel format, effectively using unique visual techniques creatively to teach key concepts of statistics.

In addition, he has published a computer simulation in the journal *Teaching Statistics* that can be used in the classroom to teach introductory statistics. He also was instrumental in the development of the new bachelor of science degree in statistics and, along with a faculty colleague, serves as coadvisor for all students in the new major. Dabney is the recipient of The Association of Former Students College-Level Award for Teaching, the Texas A&M Montague-Center for Teaching Excellence Scholar Award and the Eppright Professorship in Undergraduate Teaching Excellence. A former undergraduate student wrote this about working on statistics research with Dabney: "This was a formative experience for me, which revealed to me the excitement and creativity that exists in current statistics research - a perspective that is all too difficult to see when taking a typical introductory statistics class."

The university-level Distinguished Achievement Awards were first presented in 1955 and have since been awarded to more than 1,000 professionals who have exhibited the highest standards of excellence at Texas A&M. Awards will be formally presented on Monday, April 24, during a ceremony in Rudder Theater. In recognition of their achievements, each recipient will receive a cash gift, an engraved watch and a commemorative plaque.

Mallick Receives Fulbright Distinguished Chair

Dr. **Bani K. Mallick**, Distinguished Professor of Statistics has been selected to receive a Fulbright Distinguished Chair for 2017-2018.

Awards from the Fulbright Distinguished Chairs Program are viewed as among the most prestigious appointments in the Fulbright Scholar Program. Although some 800 faculty and professionals earn Fulbright Scholar grants annually, Distinguished Chairs are only awarded to approximately 40 individuals worldwide each year.

Mallick has been recognized with the Fulbright-Nehru Distinguished Chair, named to honor his host country, India, and its first prime minister, Jawaharlal Nehru. He will spend four months later this year conducting research and lecturing at institutes across India on his chosen topic, big data cancer research.

“Cancer is one of the deadliest diseases in the world,” Mallick said. “According to the World Health Organization, 8.8 million people worldwide died from cancer in 2015. In India, the estimated number of people living with this disease is 2.5 million, with cancer-related deaths at half a million each

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year."

Mallick, holder of the Susan M. Arseven '75 Chair in Data Science and Computational Statistics in the Texas A&M Department of Statistics, currently is using his extensive expertise in Bayesian statistics and a $2.3 million National Institutes of Health grant (awarded in spring 2016), to develop new statistical models and methods designed to merge two vital informational areas: cancer-related data and analysis. This grant is a collaborative project with Raymond J. Carroll as well as MD Anderson Cancer Center researchers Veerabhadran Baladandayuthapani and Han Liang.

Globally renowned as a pioneer in Bayesian nonparametric regression and classification research, Mallick is considered one of today's most influential and productive statisticians. He is director of both the Center for Statistical Bioinformatics and the Bayesian Bioinformatics Laboratory and has developed novel methodology and theory that has become the foundation for interdisciplinary research in myriad fields, from bioinformatics and veterinary medicine to engineering and traffic mapping. Click here for the full article.

NSF Career Award Recipients

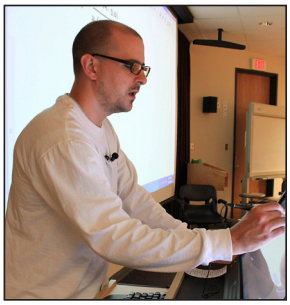
Statistics faculty Anirban Bhattacharya and Matthias Katzfuss were both selected to receive NSF Career Awards in 2017. The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization. Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research.

Anirban Bhattacharya, Assistant Professor of TAMU Statistics since 2013, submitted a proposal titled "Bayesian Generalized Shrinkage: An Encompassing Model Approach." The proposal was approved and will begin effective July 1, 2017. One reviewer quoted "This is a very well-written proposal aiming to tackle some important and challenging issues related to Bayesian approaches. It will result in strong theoretical contributions."

The proposal lays out an innovative theoretical framework for the study of Bayesian model averaging and selection. The number and depth of new ideas in the proposal are striking. The developments in the proposal will advance statistical inference for high-dimensional data and it will support a PhD student for 4 years.

Matthias Katzfuss, also an Assistant Professor of Statistics since 2013, submitted his proposal titled "Data Assimilation for Massive Spatio-Temporal Systems Using Multi-Resolution Filters" and has been accepted effective March 1, 2017. One member of the review panel quoted "The narrative is very well written, and it provides strong evidence of the PI's knowledge and competence to perform the proposed research. This is the result of the PIs strong involvement with atmospheric scientists and climatologists, reflected by his collaboration with researchers at the National Center for Atmospheric Research."

Dabney University Professorship



Associate Professor, **Alan Dabney**, has been honored with a University Professorship for Undergraduate Teaching Excellence (UPUTE). This award is conferred only upon the university's most distinguished teachers of undergraduate faculty who have exhibited uncommon excellence and devotion to the education of undergraduate students.

Dr. Dabney has over 20 peer-reviewed publications, mostly in the area of bioinformatics. In addition, he was featured in a series of 36 video lectures by the W. H. Freeman publishing company in 2010, coauthored the *Cartoon Introduction to Statistics* in 2013, and published a computer simulation for use in the introductory statistics classroom in the journal *Teaching Statistics* in 2014. Dr. Dabney consistently receives exceptional student evaluations and has received three teaching awards from Texas A&M (the Montague-Center for Teaching Excellence Teaching Scholar award in 2009, the Distinguished Achievement College-Level Award in Teaching from the Association of Former Students in 2011, and the 2016-2019 Eppright Professorship in Undergraduate Teaching Excellence). He was instrumental in the development of the new bachelor of science degree in statistics in 2016. He currently co-directs (with Professor Tom Wehrly) the statistics undergraduate program (see **page 7** for Undergraduate feature story).

In 2016, Dr. Dabney also spearheaded an effort to revise STAT 211, our calculus-based introductory statistics class

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that is taken by engineering and related disciplines and will now be taken by our majors. The revised STAT 211 features a more modern curriculum delivered in a "flipped" style using modern real-world datasets. He is also active in promoting diversity and inclusion on campus.

In 2016, he delivered a seminar series titled Rational Learning that combined probability, scientific inquiry, philosophy and common sense to argue for an inclusive, compassionate worldview; he plans to teach a special topics class through the College of Liberal Arts on this topic in fall 2017. He is also co-PI on an internally funded grant to host a symposium aimed at junior faculty, postdocs and staff, and graduate students in the sciences to share best-practices in balancing professional success with personal wellbeing.

Newton Graduate Student Service Award

Sheridan Mitchell Lorenz with Joe and Linda Newton.

Executive Professor and former Dean of College of Science, **H. Joseph Newton**, was recognized with the Joseph Newton Graduate Student Service Award in the Texas A&M College of Science in tribute to Newton and his 15-year tenure as Dean of Science.

Sheridan Mitchell Lorenz, daughter of George and Cynthia Woods Mitchell, established the award as a way of honoring one of the key Texas A&M administrators who helped Mitchell chart the course for his visionary legacy at Texas A&M and as a philanthropic leader in the future of big science. Under Newton's leadership during this pivotal period, the college and the broader university made noteworthy progress toward realizing Mitchell's lifelong dream: transforming his alma mater into a world leader in fundamental physics and astronomy.

"Joe Newton did so much to help the College of Science and Texas A&M University succeed," Lorenz said. "I know his contributions were in part a tribute to my father's memory and legacy, and I am just incredibly touched by that. I want future generations to know how loved he was and is, and how much he did for science at Texas A&M."

The endowment, created through the Texas A&M Foundation, will provide five annual awards to benefit Texas A&M Science graduate students with distinguished records of service to their university, college, departments, professions or community. One student will be selected per year by each of the college's five departments (Biology, Chemistry, Mathematics, Physics and Astronomy, and Statistics) through a process coordinated by the college's associate dean for graduate programs.

Dr. Newton added, "Lucky enough to be in the right place at the right time as dean of the Texas A&M College of Science, I was privileged to participate in George's philanthropic efforts to build fundamental physics and astronomy at Texas A&M." For the full story, please visit http://www.science.tamu.edu/news/story.php?story_ID=1626#.WIZdbRsrJaQ.

Spiegelman Wins Don Owen Award

Clifford Spiegelman, Distinguished Professor of Statistics was recognized by the San Antonio Chapter of the American Statistical Association with the 2016 Don Owen Award for his excellence in research, contributions to editorial activities and service to the statistical community.

Spiegelman was also honored with a special issue of the journal *Chemometrics and Intelligent Laboratory Systems* in dedication to one of the primary facets of his 40-year career: the application of statistics to chemical data.

Cliff Spiegelman with San Antonio Chapter Vice President, Joel Michalek.

Spiegelman is an expert in statistical and environmental forensics and also a founder within statistics of the field of chemometrics, the science of using data to extract information from chemical systems. He joined the Statistics Department in 1987 as an associate professor, earning promotion to full professor in 1990 and to distinguished professor in 2009. He also is a senior research scientist with the Texas A&M Transportation Institute. Before coming to Texas A&M, he spent nine years in the Statistical Engineering Division at the National Bureau of Standards in Gaithersburg.

Dr. Valen Johnson added, "Cliff's service to the profession and his role as cofounder of the journal *Chemometrics and Intelligent Laboratory Systems* make him the ideal recipient for this prestigious award."

Johnson Named Distinguished Professor

Professor and Head of Statistics, Valen Johnson, has been appointed as a University Distinguished Professor. The title, which is bestowed in perpetuity, denotes a faculty member who is pre-eminent in his or her field, has made at least one

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seminal contribution to the discipline, and whose work is central in any narrative of the field and is widely recognized to have changed the direction of scholarship in the field.

A renowned expert in Bayesian statistics and using probability distributions to represent uncertainties with regard to unknown quantities, Dr. **Valen E. Johnson** joined the faculty in September 2012, serving as Head of Statistics since March 2014. He is the fourth statistics professor to be appointed as a University Distinguished Professor, joining the late Dr. Emanuel Parzen (1978), Dr. Raymond J. Carroll (1997), Dr. Clifford H. Spiegelman (2009) and Dr. Bani K. Mallick (2011) in so representing his profession.

"Dr. Johnson is a preeminent scholar who has made seminal contributions to his field and has provided insight into a number of areas of profound societal significance," said Dr. Meigan Aronson, Dean of the College of Science. "His commitment to seeking out the most important problems where statistical analysis intersects with novel data sets greatly enriches our university. We are proud that his accomplishments have been recognized in this way, and we greatly value his leadership within the College of Science."

Johnson is an elected fellow of both the American Statistical Association and the Royal Statistical Society as well as an elected member in the International Statistics Institute. He holds two patents and has published two books, *Ordinal Data Models* and *Grade Inflation: A Crisis in College Education*. His work with the American Statistical Association on p-values made international headlines in a host of worldwide outlets, including *FiveThirtyEight*, which also published his related limerick: "That's out of date, Our studies don't replicate, *P* point oh oh five, then null is rubbish!"

IN MEMORIAM

Distinguished Professor Emeritus, Dr. **Emanuel Parzen**, world-respected Texas A&M University statistician and expert in signal detection theory and time series analysis, died on February 6, 2016 in Boca Raton, Fla. He was 86. Parzen retired in 2009 as a distinguished professor emeritus of statistics at Texas A&M but continued his research into his retirement. He and his wife, Carol, had relocated to Florida in July 2015.

Among other career achievements, Parzen pioneered the use of kernel density estimation - named the Parzen window in his honor - and authored six books, including "Modern Probability Theory and Its Applications," which is considered one of the classic defining texts in probability theory. Thanks to him, Texas A&M is home to the Emanuel Parzen Prize Lecture Series, established by the Department of Statistics in his honor in 1994 and presented in even-numbered years to North American statisticians in recognition of outstanding careers in the discipline and profession of statistics.

Parzen is survived by his wife of 57 years, Carol, of Boca Raton; his daughter, Sarah Schandelson (Martin) also of Boca Raton; his son, Michael Parzen (Andrea) of Cambridge, Mass. and six grandchildren. (Full story: http://www.science.tamu.edu/news/story.php?story_ID=1541#.WIELvRsrJaQ.)

Retired Associate Professor, **Omer C. Jenkins**, 81, passed away on February 12, 2016. Omer joined the (then) Institute of Statistics as an Assistant Professor in 1965 until his retirement in 1998. During his career, Omer held two Distinguished Visiting Professor appointments with the United States Air Force Academy and served as Assistant Dean for the College of Science for four years.

Jenkins educated many students through teaching, consulting and advising. He was recognized with a University-Wide Amoco Award for Teaching in 1979 and a College-Level AFS Distinguished Achievement Award in Teaching in 1996. After retirement, he enjoyed giving back to the community and making a difference through volunteering in the Kiwanis Club, Brazos Beautiful, and Mending Hearts. He was awarded the American Institute for Public Service's National Jefferson Award in 2011 for his years of community service. Omer was a valued member of the faculty and will be fondly remembered for always distributing peppermint patties. He will be missed.

Texas A&M Statistics Offers Undergraduate Degree

BY SHANA HUTCHINS, COMMUNICATIONS MANAGER, COLLEGE OF SCIENCE

Statistics is one of the world's hottest career tickets by any standard these days. Beginning this fall in Aggieland, undergraduate students will have the opportunity to punch theirs, courtesy of one of Texas A&M University's newest degree programs, a bachelor's of science in statistics.

The Texas A&M Department of Statistics, already home to one of the nation's top graduate programs, is set to expand into the undergraduate market in fall 2016 with its first bachelor's degree, approved earlier this year by the Texas Higher Education Coordinating Board. Since 1962, the department has provided fundamental statistics courses and related instruction in support of other departments' undergraduate degree requirements but never for its own programs beyond master's and Ph.D. degrees.

Valen E. Johnson, professor and head of Texas A&M Statistics, says the move capitalizes on a nationwide trend in higher education as institutions across the country work to expand their statistics and data analytics-related programs and course offerings in order to meet the growing global demand for what is projected by the U.S. Bureau of Labor Statistics (BLS) to be one of the fastest-growing jobs in the U.S. According to BLS data, total employment for statisticians has grown 54 percent since 2000. Moreover, the BLS estimates it will continue to grow by another 34 percent from 2014 to 2024.

"The department is very excited about enrolling Texas A&M undergraduates into our program," Johnson said. "We are expending a great deal of effort to ensure that these students are well prepared for either careers in industry or to continue their statistics education in graduate school. The range of employment options for statisticians is very broad, and we expect that our majors will be in very high demand following graduation."

Texas A&M statistician **Alan Dabney**, one of two faculty advisors for the new major along with fellow Texas A&M statistician Thomas Wehrly, says it's clear that there is no time like the present to launch an undergraduate major in statistics. Beyond the general increase in appreciation for statistics and the vital multidisciplinary role it plays across sectors from business to health care to government, he cites a host of broad endorsements during the past few years of statistics as both a popular and profitable career - perhaps none more famous than career-based professional networking site LinkedIn's declaration of statistics as the "hottest skill" in 2014. More recently, U.S. News & World Report ranked statistician No. 1 in Best Business Jobs and No. 17 among its Top 100 Jobs, while Money magazine reported that professionals with expertise handling big data tend to earn 5-to-6 percent more on average than their peers who lack such expertise.

Any way you slice it, Dabney says, the data point to a bright future for the profession and for students considering a new major, a possible change of one or a double major.

"The degree plan for the bachelor's of science in statistics is modern and comprehensive but also highly flexible," Dabney said. "Undergraduates with a statistics degree are currently being placed well right out of college, according to Shane Reese, a professor of statistics at Brigham Young University. By continuing on to graduate school for a master's or Ph.D. degree - either here at Texas A&M, where our department's graduate program is among the highest rated in the country, or elsewhere - many additional doors of opportunity can be opened. By selecting the appropriate electives and area of specialization, students have great control over their education and professional preparation."

"The Department of Statistics is part of one of only three Tier 1 universities in the state," Wehrly said. "Our students will be taking classes from professors who conduct cutting-edge research and also collaborate with top researchers across numerous fields."

Tom Wehrly says the department will continue to offer a joint undergraduate degree in applied mathematical sciences in partnership with the Texas A&M Department of Mathematics. Interestingly, the same BLS survey that lists statistics as its 9th fastest-growing occupation also predicts mathematical science jobs will grow 28 percent by 2024 as well.

"The program in statistics is flexible enough to allow students to obtain a double major and is ideal for students who have a strong interest in any area of application," Wehrly said.

To learn more about the program and related requirements, visit http://www.stat.tamu.edu/academics/undergraduate/. For additional information about statistics as either a discipline or a possible career, visit the American Statistical Association's This Is Statistics website.

Probabilistic Network Analysis

BY ANIRBAN BHATTACHARYA, ASSISTANT PROFESSOR OF STATISTICS

Analysis of structured network data has witnessed heightened activity in recent years at the intersection of statistics, computer science and machine learning, with numerous applications in social, biological, physical sciences and engineering. In their simplest form, network datasets are available as binary graphs. The set of vertices of the graph correspond to nodes/actors/players in the network, and the presence of an edge indicates some form of connection between the respective nodes. For example, the nodes may indicate academic researchers in a scientific collaboration network, with an edge between two researchers indicating frequent collaboration. Numerous other examples include, but are not limited to, social networks, gene interaction networks, protein networks, brain connectivity networks, and internet traffic networks. Practical applications typically require more complex structures to integrate all available information, such as, the strength of the association between nodes in case there is an edge, covariate information available per node/edge, dynamic networks evolving over time etc.

A common feature empirically observed in a variety of network data is the presence of clusters or communities, typically with stronger inter-community connections and sparser connections across different communities. There are examples abound in social networks where groups of individuals tend to cluster together, forming clusters or communities. Panel (a) in Figure 1 shows an example of a static network with 14 nodes clustered into 3 communities. If the nodes are arranged in accordance to their community memberships, the presence of the communities become immediately apparent from the adjacency matrix in panel (b). However, we seldom observe the nodes in perfect order, which renders the community structure obscured as in panel (c). The problem of community detection refers to unearthing the number of communities as well as the community memberships from an observed adjacency matrix as in panel (c).

There is a rich literature in probability theory on random graph models originating from the classical Erdös–Rényi model where each edge is independently included in the graph with the same probability p. While the Erdös–Rényi models exhibit many interesting phase-transition phenomenon, they have been found unsuitable for modeling real networks. The stochastic block model (SBM) is a popular probabilistic model for community formation in networks whose origin can be traced back to the social sciences literature in the 1980s. An SBM randomly assigns the network nodes to one of several communities, with the probability of an edge between two nodes solely dependent on their community memberships. There has been active research in recent years on obtaining maximum likelihood and Bayes estimates in SBMs and studying consistency of the procedures in recovering the community structure. I have recently worked on developing a class of hierarchical Bayesian models (MFM-SBM) which obviate the need to pre-specify the number of communities. Order selection in SBMs poses a tricky challenge due to identifiability problems and associated issues with BIC-type model selection criterion in such settings. Instead of pre-specifying the number of communities based on some model selection criterion, our proposal defines a prior distribution on the space of all partitions of n objects. The model-fitting proceeds in a straightforward way using a Gibbs sampling algorithm we developed, obviating the need to use complicated trans-dimensional Markov chain moves.

My current and future research directions in this area shall focus on improving theoretical understanding of the community detection problem and developing goodness of fit tests for network models. A complete theoretical understanding of the SBM, even for the most simple two-community and homogeneous case, has only appeared recently. I am currently investigating parameter identifiability and information-theoretic limits on clustering consistency in a MFM-SBM frame-

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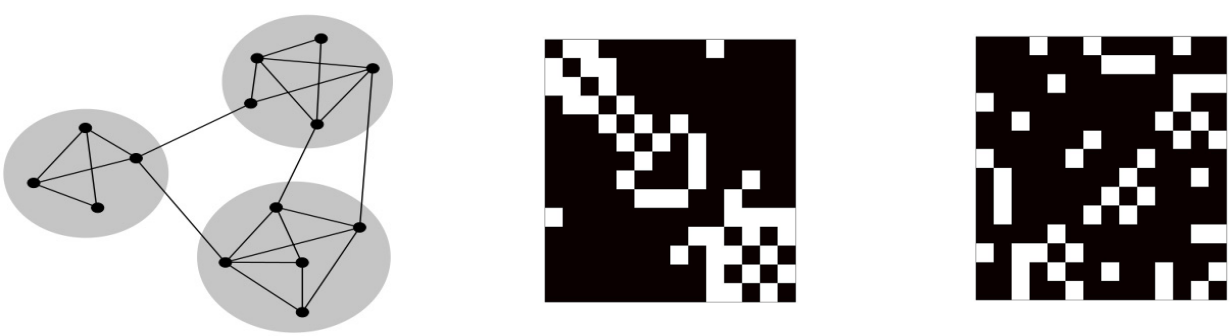

(a) (b) (c)

Figure 1: Panel (a): a network with 3 communities, (b): heatmap of the adjacency matrix with the nodes ordered according to their community memberships, (c): heatmap of the same adjacency matrix with the nodes in random order.

work. There is currently a dearth of methods for checking adequacy of fit for network models. We aim to use techniques from algebraic statistics which has emerged as a powerful tool to derive goodness of fit tests, notably in contingency tables. The methodology developed shall be used to predict cognitive scores from the human connectome project in a network regression framework, with brain connectivity networks as covariates.

About the Author

Anirban Bhattacharya joined our faculty in August 2013. He received a MS from the Indian Statistical Institute and a Ph.D from Duke University. Fields of research include Bayesian nonparametrics, contingency tables, covariance estimation, factor models, Gaussian process regression, high-dimensional data, network data, shrinkage priors, tensor decompositions, variable selection.

HARTLEY AWARD WINNER

Dr. **Scott H. Holan** received the 2016 H. O. Hartley Award. The award is given annually to a former student of the Department of Statistics for distinguished service to the discipline of statistics.

Dr. Holan is currently a Professor of Statistics in the Department of Statistics at the University of Missouri-Columbia. He received his Ph.D. in 2004 under the direction of Dr. Emanuel Parzen and has served as a Senior Research Fellow in the Office of Survey Methods with the Bureau of Labor Statistics, a visiting researcher at the U.S. Census Bureau (2009 and 2010) and with a visiting researcher at SAMSI (2009). Dr. Holan was elected as a Fellow of the ASA and became an elected member of the International Statistical Institute in 2014. He has an extensive and distinguished record of funded research and an admirable publication record. His primary research contributions have been in Bayesian hierarchical models for dependent data, time series and spatio-temporal data. Dr. Holan has applied his methodological advances to solve real problems in collaboration with numerous federal agencies, such as, U.S. Census Bureau, NASS, Bureau of Labor Statistics, and USGS. He is an editor of the *International Statistical Review*, an associate editor for the *Journal of Nonparametric Statistics*, the *Journal of Time Series Analysis*, and has acted as an associate editor for the *Journal of Agricultural, Biological, and Environmental Statistics*.

Dr. Holan was selected for the H. O. Hartley Award based his being a model statistical citizen, an outstanding educator, a creator of new statistical methodology, a collaborator with researchers from a wide range of disciplines, and a provider of extraordinary service to his university and a multitude of statistical societies.

Former Student News

Former student and member of the Statistics Alumni Advisory Board, **Jeffrey S. Morris**, was named the Del & Dennis McCarthy Distinguished Professorship. Jeff currently serves as Professor and Deputy Chair in the Department of Biostatistics at MD Anderson. He received his MS in Statistics and a Ph.D. in Statistics at Texas A&M under the direction of Raymond J. Carroll and Naisyin Wang.

His primary research interests include the development of new statistical methods for complex, structured, high-dimensional object data including functional data, image data, and high dimensional genomics data including mass spectrometry and 2-D gel proteomics data, gene expression, copy number, and genome-level methylation data. Jeff has particular interest in building flexible, unified modeling frameworks for performing regression analyses for these types of data, and methods of integration that combine information across different types of data. He collaborates with numerous researchers at MD Anderson in various areas, with particular focus on various aspects of gastro-intestinal related cancers, in terms of early diagnosis, prevention, treatment, and discovery of biomarkers and more detailed molecular characterization of these diseases and their subtypes with the goal of developing targeted therapies individualized to the patients' tumors.

His overall goal is to do work that can make specific contributions to an applied scientific area while developing a general tool that can also make much broader impact to many other scientific areas, as well.

Arnab Maity was promoted to Associate Professor of Statistics at North Carolina State University in August. He obtained a MS and Ph.D. in Statistics (also under the advisement of Raymond Carroll), from Texas A&M University. He worked as a research fellow during 2008-2010 in the Biostatistics department at Harvard School of Public Health before joining NC State.

Arnab's primary research areas include functional data analysis, kernel machine regression, semiparametric regression and inference. His research has been applied to many areas including gene and environment studies, environmental epidemiology and epigenetics.

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Q&A with Former Student and Donor, Ersen Arseven '74

BY SHANA HUTCHINS, COMMUNICATIONS MANAGER, COLLEGE OF SCIENCE

In celebration of Student Research Week 2016 at Texas A&M, the College of Science took five with five different people involved in various aspects and stages of innovative research at Texas A&M and beyond. This segment features **Ersen Arseven** '74, who earned his Ph.D. in statistics at Texas A&M and is a 2007 inductee into the college's Academy of Distinguished Former Students.

Arseven has served since 2005 as an independent consultant to biotechnology and biopharmaceutical businesses through the company he founded in 1992, Arseven Consulting Inc. Among other accomplishments, he was part of a team that established the anti-cancer activity of the compound Mitoxantrone, which was used for treatment of various types of leukemia and is still used for the treatment of metastatic prostate cancer. His 41-year career as a statistician has included stints with American Cyanamid Corporation (1974-84), Boehringer Ingelheim Pharmaceuticals (1984-92) and Schering-Plough Research Institute (2002-05). In 2003 he received the H.O. Hartley Award, given annually to a former student of the Texas A&M Department of Statistics in recognition of distinguished service to the discipline of statistics.

Why did you decide to become a statistician and pursue an advanced degree at Texas A&M University?

"To become a statistician was not in my career plan. It is an unintended result of my desire to become an econometrician and study under prominent Professor of Econometrics Robel L. Basmann. I came to Texas A&M University from the University of Pennsylvania to study and write my thesis under Dr. Basmann, who recently had moved from Purdue University to Texas A&M and was a professor of econometrics in the Department of Economics. He advised me to take as many statistics courses as my degree program would allow. I took all the econometrics courses he taught in the economics department, and I had already taken sufficient economics courses. If later I wanted to get a degree in economics, I could do it. With his encouragement and with the help of Professor Ronald Hocking in what was then the Graduate Institute of Statistics, I transferred to Statistics, where I continued my studies and became a statistician."

What do you consider your biggest career accomplishment(s)?

"The biggest career accomplishment of mine and my generation of statisticians working in the biopharmaceutical, life sciences and chemical industries was making significant contributions as members of multidisciplinary R&D teams -- in discovery and in the development of new important products, thus establishing the essential role of statisticians and of statistical practice in these industries."

The value of statistical analysis is readily acknowledged in these big-data-dominated days. As a pioneer who helped shape the field of biostatistics, what area(s) do you see as ripe for the next big statistics-related breakthrough?

"Statistics will always be alongside the rapidly advancing science and technology how ever and wherever they progress. Therefore, it is difficult to identify areas ripe for statistics-related breakthrough with reasonable accuracy. However, two areas beckon important statistical developments: modelling and predicting behavior of large gatherings and environmetrics. I hope both will be the focus of intensive research and development efforts."

As someone who spent a good portion of your career in scientific research, why do you feel such efforts are important?

Research findings in natural, social and applied sciences together form our knowledge of men, our culture and our society. They shape our understanding of the world around us and our expectations for our future. We use this continuously accumulating knowledge for the betterment of our society and humanity by trying to address problems, disorders and disasters we face. Stopping or slowing down our research efforts means we will not be adding new knowledge to our accumulated knowledge stock. This will rob us of finding solutions to problems we face now and potential problems we will be facing in the future. As a nation and world, we would lose our creativity and vitality in essentially every area."

Along those same lines, why do you feel it's important to invest in the future of Texas A&M and its faculty and students through endowments to support chairs, conferences, fellowships and awards?

"Texas A&M University is at the threshold of becoming one of the premier universities in the nation with significant contributions to the welfare and safety of our society and humanity. However, the extent of contributions from Texas A&M University is constrained by any number of factors, including the amount of available financial resources, the quantity and quality of physical facilities, the ability to hire and keep accomplished faculty members, and the capability to attract and educate quality, talented students. Endowments to support chairs, conferences, fellowships and awards augments the university's resources and enables it to continue to increase its contribution to society and take additional steps to reach its place among the premier universities.

"Texas A&M was generous and gave me the opportunity to continue my education, which made my life. I would like to do the same thing for other students. I benefited from Texas A&M resources, and I want other students to benefit also."

The full article, along with a bonus question from Arseven, is available here.

MAY 2016 GRADUATES

MASTERS

Herta, Patrick (Jun)
Huang, Xiaoqing (Longnecker)
Ghassan Jreij, Vennessa (Wang)
Payne, Richard D. (Mallick)
Stabile, Lauren Christine (Dabney)

ONLINE MASTERS

Bartkowiak, David Jr. (Sheather)
Burwell, Todd Charles (Long)
Coneway, Benjamin Thomas (Cline)
Feng, Mingen (Sheather)
Field, Justin (Sheather)
Griffin, Gabrielle (Sheather)
Gustafson, Kathleen J. (Cline)
Kovats, Kenneth R. Jr. (Sheather)
Kuchipudi, Lakshmi S. (Sheather)
Lilley, Travis W. (Sheather)
Nguyen, Uyen Duc Thai (Dahm)
Patwari, Krishna (Sheather)
Pena, Oscar Adrian (Sheather)
Reeves, Nicholas Lee (Akleman)
Taghavi, Azam Sadat (Akleman)
Saw, Robert Ernest (Long)
Shannon, Christopher (Sheather)
Starling, Jennifer E. (Long)
Hill, Jon Charles Vander (Long)
Wise, Maxwell D. (Akleman)
Wisnieski, Sean E. (Sheather)
Xia, Shuhua (Sheather)

ANALYTICS MASTERS

Allevato, Federico A. (Sheather)
Arrington, Ivan P. (Speed/Sheather)

ANALYICS continued

Briese, Kyle Richard (Sheather)
Czako, Johana (Jones/Sheather)
Davidson, Michael Paul (Sheather)
Dhakal, Pradyumna (Sheather)
Grutter, Aaron Joel (Sheather)
Hammond, Giewee (Jones)
Hill, Joel Carson (Smith/Sheather)
Johnston, James (Speed/Sheather)
Katrib, Ziad Hamid (Jones/Sheather)
Kay, Kelly J. (Speed/Sheather)
Kluk, Yoel (Jones/Sheather)
Klute, Brian J. (Speed/Sheather)
Liberatore, Bret T. (Smith/Sheather)
Mettry, Matthew M. (Sheather)
Mohan, Sasikala (Smith/Sheather)
Ormachea, Pablo Jr. (Sheather/Jones)
Saurez, John Wesly (Sheather)
Watkins, John D. (Speed/Sheather)
Yowell, Patricia (Smith/Sheather)

AUGUST 2016 GRADUATES

PH.D.

Liu, Senmao (Huang)
Su, Ya (Huang/Zhou)

MASTERS

Cummings, Shelby (Sinha)
Peiskee, James D. (Jones)

ONLINE MASTERS

Busillo, Joseph N. (Dahm)
Carter, Kristin C. (Sheather)
Case, Stephen F. (Sheather)

ONLINE MASTERS continued

Foster, Matthew T. (Longnecker)
Haas, Allen M. (Sinha)
Huynh, Monica Le (Sheather)
Kay, Will Heck (Longnecker)
Moel, Robert Victor (Dahm)
Mullan, Katherine (Sinha)
Patel, Nehal Kantilal (Sheather)
Peters, Michael (Longnecker)
Rachamallu, Avanthi (Dahm)
Watson, Susan Beth (Sheather)
Westwood, Joel R. (Longnecker)
Wu, Dongliang (Dahm)

ANALYTICS MASTERS

Dean, William C. (Sheather)

DECEMBER 2016 GRADUATES

MASTERS

Jiang, Jun (Zhou)
Zheng, Le (Dabney)

ONLINE MASTERS

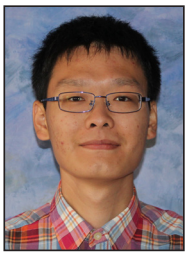
Halstead, Jack T. (Longnecker)
Hils, Brian James (Sheather)
Holland, Laura R. (Sheather)
Kluck, Kevin S. (Zhou)
Liu, Jingjing (Zhou)
Lowe, Stephanie M. (Zhou)
McIntosh, Janeen D. (Zhou)
Ollar, Lyndon B. (Sheather)
Searles, Clay C. (Longnecker)
Selsov, Roger Vassily (Zhou)
Weaver, Peter (Sheather)

Students and faculty enjoy an intense game of volleyball at the SGSA Faculty Appreciation BBQ last April.

Graduate Student Awards & Recognitions

CONNOR AWARD

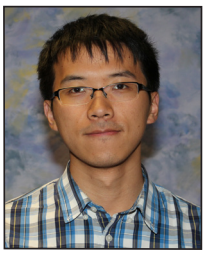
The Statistics Department Awards Committee selected Yabo Niu as the 2016 William S. Connor Award recipient. This award is presented to the student(s) whom the committee deems the most outstanding among current students who have successfully passed both the Theory and Methods Qualifying Exams at the Ph.D. level and have completed eight specified required courses.



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. The award was formally announced at the Aggie Reunion in Chicago.

KSHIRSAGAR FELLOWSHIP

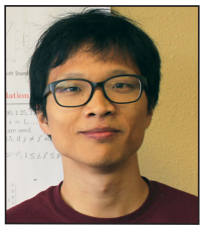
The Anant M. Kshirsagar Endowed Fellowship was established through the Texas A&M Foundation in 2010 by Texas A&M former students Ersen Arseven '74 and Luisa Sia '74 to honor their beloved professor, Dr. Anant M. Kshirsagar. Eligible students are selected on the basis of course grades, classroom performance 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. The 2016 Kshirsagar Endowed Fellowship was awarded to Shiyuan He.



Shiyuan He received a Bachelor's degree 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. Shiyuan is a two-time recipient of the Kshirsagar fellowship. He was also selected in 2014.

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 graduation. The 2016 Parzen Graduate Research Fellowship was awarded to **Minsuk Shin** for his outstanding interdisciplinary work.



Minsuk is a fifth year Ph.D. student in Statistics under the advisement of Val Johnson and Anirban Bhattacharya. He obtained a Bachelor of Arts degree in Applied Statistics from Yonsei University, South Korea in 2010. Minsuk's research interests concern the choice of priors in Bayesian model selection and their applied, theoretical, and computational aspects. He also enjoys collaborative research and applying Bayesian variable selection models to real data sets. Minsuk expects to receive his doctorate in 2017.

NEWTON TEACHING AWARD

In 2003, after spending 25 years as a professor, department head of statistics, and becoming dean of science, Joe Newton, together with his wife, Linda, wanted to do something to "give back" to Texas A&M. As part of the One Spirit One Vision campaign, they decided to donate $25,000 to the Department of Statistics. Recognizing that the hard work of graduate assistants was crucial to the teaching programs of the department and that there were very few ways to honor their work, they asked that the donation be used to create a graduate student teaching award. Rather than have the award named in their honor, they asked that it be named in honor of Joe's parents who had played such an important role in encouraging him to accomplish his goals. The award includes a certificate and $1000 monetary award.

The 2016 Ruth J. and Howard F. Newton Memorial Graduate Student Teaching Award in Statistics was awarded to **Robert Philbin**. The award was presented to Robert during the Aggie Reunion in Chicago via Skype.

Robert was selected to receive the Newton Teaching Award based on his excellent teaching of several undergraduate statistics courses. Robert earned a B.S. in Engineering Physics from Colorado School of Mines, a Master of Arts in Astrophysics from Princeton University and a M.S. in Statistics from Texas A&M University.

The introductory course, STAT 201 is challenging to teach due to the fact that the vast majority of students have an extremely negative attitude towards any quantitative course. Robert was able to overcome his students' negative attitude towards statistics by emphasizing concepts through examples they could relate to without all the equations that most statistics instructors rely on to define and explain statistical methodology.

Students commented favorably of his teaching technique stating, "Robert is the best math professor I have had in college!

continued on next page

Mr. Philbin is really enjoyable and keeps my attention in class."

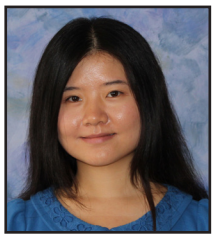
TRAVEL GRANT

Amir Nikooienejad received a George Bush Presidential Library Foundation Travel Grant. The George Bush Foundation provides annual travel grants to undergraduate and graduate students from each of the academic colleges at Texas A&M University. The program is designed to provide educational opportunities to full-time graduate students in amounts up to $1000 per student. These grants facilitate student travel connected with their research topics (attending academic conferences, research projects or study, or internships in the United States or abroad).

The Foundation, Texas A&M University and the College of Science each assisted with this grant to help Amir reach his education and research goals. This is a competitive selection process and we congratulate Amir and we wish him continued success with future accomplishments and goals.

Amir earned a Bachelor of Science in Electrical Engineering from Sharif University of Technology in Iran and Masters degree in Electrical Engineering, Bioinformatics & Computational Biology from Texas A&M. He is working toward his Ph.D. under the direction of Val Johnson and he expects to graduate in August 2017.

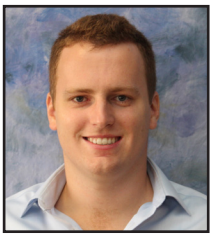
Amir Nikooienejad also serves as President of the Statistics Graduate Student Association (SGSA). Fellow students, **Tianying Wang**, **Marcin Jurek**, **Eli Kravitz**, **Alex Lapanowski** and **Chris Manuel** also serve as officers for the 2017-2018 academic year.



Tianying Wang
Vice President

Marcin Jurek
Treasurer

Eli Kravitz
Secretary/Social Chair



Alex Lapanowski
Web Designer

Chris Manuel
GPSC Delagate

Welcome new officers and we look forward to the exciting SGSA events throughout the year!

FORMER STUDENTS continued...

Former student **Gregory Cepluch** received a Woodrow Wilson National Fellowship Foundation Teaching Fellow in 2016. The highly competitive program recruits both recent graduates and career changers with strong backgrounds in science, technology, engineering, and math—the STEM fields—and prepares them specifically to teach in high-need secondary schools.

Each Fellow receives $32,000 to complete a specially designed, cutting-edge master's degree program based on a year-long classroom experience. In return, Fellows commit to teach for three years in the urban and rural Indiana schools that most need strong STEM teachers. Throughout the three-year commitment, Fellows receive ongoing support and mentoring.

The Woodrow Wilson Indiana Teaching Fellows program is part of a statewide effort to prepare excellent science, technology, engineering, and math (STEM) teachers for careers in Indiana's high-need schools.

Gregory Cepluch received a Bachelor's degree in Mathematics & Economy from Xavier University in 2009 and MS in Statistics from Texas A&M in 2009 under the direction of Jeff Hart. He works as a Mathematical statistician at the U.S. Census Bureau as a teaching assistant/instructor. He also tutors in mathematics, statistics and economics. Gregory currently attends Ball State University while completing his master's and clinical placement. He's set to graduate this spring and will receive a Masters of Art in Education, with a certificate to teach mathematics.

Assistant Professor, Matthias Katzfuss explains Spatial Prediction in a STAT 689 course (top). Matthias hard at work with STAT 211 undergraduate students (bottom).

Statistics Staff News

Elaine James received the 2016 Outstanding Staff Achievement Award from the College of Science. The award was presented during the college's annual Faculty-Staff Meeting and Awards Presentation. Established in 1995, the award commends the dedication, enthusiasm and accomplishments of staff throughout the college.

Elaine has served as an Administrative Assistant in the Department of Statistics for the past 10 years, has served 25 years in the college and as a leader in myriad aspects within Texas A&M Statistics. Her primary roles are many, from technical typist, departmental webmaster and *StatLinks* magazine editor, to seminar coordinator, special events manager and all things organizer extraordinaire. In between, James also serves as backup support to the department head assistant, assisting with all facets of administrative and faculty support, including faculty hiring, annual reviews, promotion and tenure cases, and departmental committee setup and coordination.

She is described by her nominator as "the one real administrative constant" within the department and by another supporting nominator as "the type of person whom the university should use as a role model for staff personnel to achieve success in their careers." Bar none, she finds a way to make things work and, in the process, displays an uncanny ability for and ease with making those around feel part of the solution. Because of her longevity in the department, Elaine acts as an informal mentor to new employees and student workers, assisting in their training and ongoing career development. Her mentorship also extends to the university level and into the wider Bryan-College Station community. Congratulations!

Andrea Dawson joined our staff in March of 2016 as an Academic Advisor II. She previously worked in the TAMU College of Geosciences for two years assisting graduate students and directors. Andrea earned a Bachelor of Science degree in Sociology from Sam Houston State University in 2008. She currently assists our graduate students in their progress to degree completion, assists Graduate Director, Jianhua Huang, with the graduate admission process as well as assisting Drs. Alan Dabney and Tom Wehrly with the new undergraduate degree.

Andrea enjoys watching television, listening to music and learning different languages. She currently only speaks Spanish but hopes to learn another language someday. We are very fortunate to have her!

2016 Parzen Prize

The Department of Statistics awarded the 2016 Emanuel and Carol Parzen Prize for Statistical Innovation to Dr. **William S. Cleveland**, Shanti S. Gupta Distinguished Professor of Statistics and Courtesy Professor of Computer Science at Purdue University on November 16. Dr. Cleveland gave a presentation titled "Divide and Recombine for Bigger Data and Higher Computational Complexity" but also shared fond memories of Manny and Carol Parzen. At the conclusion of the lecture, Simon Sheather gave a tribute to Dr. Parzen honoring his lifetime achievements and statistical legacy.

The Prize was established as an endowment at the Texas A&M Foundation in honor of Dr. Parzen's 65th birthday on April 21, 1994 to promote the dissemination of statistical achievements to North American statisticians who have made outstanding and influential contributions to the development of applicable and innovative statistical methods.

The 2016 Parzen Prize was awarded to William Cleveland "for innovative, influential, and outstanding research in statistical methodology and computational methods for statistics, including time series analysis, nonparametric local regression (loess), statistical graphics and data visualization including scatterplot brushing and trellis displays, and many other contributions to statistical and computational methods; leadership in developing modern methods at the interface of computer science and statistics for the analysis of and visualization of large and complex data sets."

William Cleveland received an A.B. in Mathematics from Princeton University and his Ph.D in Statistics from Yale University. He is an elected Fellow of the American Statistical Association, the Institute of Mathematical Statistics, and the American Association for the Advancement of Science, and an Elected Member of the International Statistics Institute. In 2016, Cleveland received the Lifetime Achievement Award for Graphics and Computing from the American Statistical Association. Cleveland is the author of two influential books and co-author of another book on the use of computer graphics in visualizing data. He has published well over 100 refereed articles in statistical, computational, medical and other journals. His more recent work develops new statistical, graphical, and computational techniques for the analysis of massive data sets.

Insight and Strategies for Professional Success Symposium

The Department of Statistics and the College of Science Diversity Committee sponsored a Symposium centered around Insight and Strategies for Professional Success, Personal Well-Being and Getting Along With Others on February 24, 2017. The Symposium gathered professionals in the sciences to provide a voice of experience for individuals facing unique challenges and pressures for careers and life success.

The all-day symposium featured veteran Texas A&M Science professors, administrators, and thought leaders who shared their insights and proven strategies for succeeding in scientific fields while balancing personal well-being and being inclusive and compassionate with others. The Diversity Committee consisted of representatives from each department within the College: Derya Akleman (Statistics), Alan Dabney (Statistics), Julia Plavnik (Mathematics), Gil Rosenthal (Biology), Coran Watanabe (Chemistry) and Robert Webb (Physics & Astronomy).

Several panelists shared a wide range of insight from academic scenarios to examples and tactics. Others offered professional instruction in mindfulness as a key practice and means to achieving successful outcomes and finding balance between one's various professional and personal commitments and responsibilities.

The format featured five strategy-centric sessions designed to deliver:

--increased knowledge about and confidence in one's ability to succeed professionally;
--increased self-awareness and ability to care for one's personal needs; and
--increased awareness and openness to different cultures, opinions, and lifestyles.

Various participants from all walks of campus life joined together in Rudder 601 for a successful event. For more information on the Symposium, please visit the website.






Big Data Modeling, Computation & Analytics Conference

Two dozen top experts in data science across academia and industry gathered at Texas A&M University for a campus-wide conference to address the latest developments and next big breakthroughs in big data.

The Conference on Advances in Big Data Modeling, Computation and Analytics was organized by distinguished professor and statistician, **Bani Mallick** and held in the Stephen W. Hawking Auditorium on September 23-24, 2016. The two-day conference featured four keynote speakers: Michael Jordan (University of California, Berkeley), Robert Schapire (Microsoft Research), Nilanjan Chatterjee (Johns Hopkins University) and Susan Athey (Stanford University), and four invited sessions on various aspects of big data, including modeling and applications, computing, business and industry.

Registration for the conference had to close early after it reached maximum capacity a month prior to the workshop start date. Event festivities kicked off Friday and concluded Saturday with two concurrent introductory tutorial sessions on data science and cloud computing.

Each invited session featured short talks from multiple speakers representing five global corporations (Microsoft, IBM, ABB Inc., EDP Renewables, Smart Blade-Germany) and 12 universities, including five Texas institutions. Friday also featured a poster session and reception at the University Club in Rudder Tower.

The conference, hosted by the Texas A&M Department of Statistics as part of the big data theme semester unveiled last year by Texas A&M Dean of Science Meigan Aronson, was jointly sponsored by the College of Science, Dwight Look College of Engineering, Mays Business School, the Institute for Applied Mathematics and Computational Science and the Southeastern Texas Chapter of the American Statistical Association.

For additional information, including speaker abstracts, please visit the conference website.

Michael Jordan
UC Berkeley

Robert Schapire
Microsoft Research

Nilanjan Chatterjee
Johns Hopkins

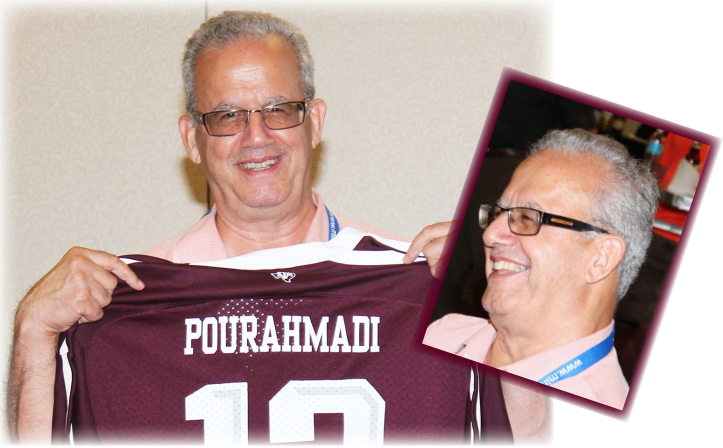
Susan Athey
Stanford

2016 Aggie Reunion

The annual Aggie Reunion was held during the Joint Statistical Meetings in Chicago, Illinois on Monday, August 1, 2016. Current faculty, students, alumni and special guests gathered together to reconnect and celebrate statistics. It was a grand celebration with several awards presented, fantastic Chicago cuisine and a host of friends and colleagues. You won't want to miss the next Reunion so please join us this year on July 31st for the 2017 Meetings in Baltimore, Maryland!

12th Man Treatment

Mohsen Pourahmadi was honored in Chicago with the 2016 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 Pourahamdi with his personalized 12th Man jersey and treated him to a customized slideshow highlighting his career achievements since he joined the Statistics faculty in 2008. Gig 'em, Dr. Pourahmadi!



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UPCOMING EVENTS

SETCASA *Poster Session*

Friday, April 21, 2017
College Station, Texas
https://sites.google.com/tamu.edu/setcasa2017

Advanced Placement Summer Institute in Statistics

July 10-13, 2017
Texas A&M University Campus
http://ap.science.tamu.edu/institutes.php
Registration is now open!

2017 Aggie Reunion

Monday, July 31, 2017
Baltimore, Maryland
Check our online calendar for updates!

What's In The Next Issue?

- We will keep you posted on events and special conferences hosted by the department. Be sure to check our website for the most recent news.

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