

STAT NEWS

Summer 2019

John Grego, Chair

From the Chair

I will be stepping down this year after seven years serving as chair and will return to civilian life. **Don Edwards, Distinguished Professor Emeritus**, served seven years as well, so I like the symmetry of that. Congratulations to **Prof. Josh Tebbs**, who will become chair on July 1. I know it's de rigueur to chafe at being chair, but I always felt I had sufficient flexibility to work with faculty and staff to make substantive changes in the department and really enjoyed my tenure. And I'll really miss the close working relationships I had with all the smart and independent colleagues in the main office over the years—**Tina Ormenisan, Connie Schroyer, Kathryn Dobereiner, Georgie Baker, Maureen Petkewich, Amanda Murphy, Suzanne Rizzo, Rachel Hansford, Lesley Williams, and Geeia Habing**.

We were excited to be authorized for a tenure-track search this year, and it couldn't have gone more smoothly. Our search this year was for someone in data science/complex data/big data—how's that for originality? It was great news when our first choice, **Minsuk Shin** from Texas A&M and Harvard's Data Science

Institute, accepted our offer. Minsuk is profiled inside.

Teaching our service courses is not getting any easier. With record enrollments being matched or exceeded, we found that we needed to hire an additional instructor in the Spring to assist with the demand for STAT 112: Statistics and the Media for College of Nursing students; read about our new hire, temporary instructor, **Xiyun (Joanna) Zou** on the next page. With our hires this year and various promotions, we will have thirteen tenured or tenure-track faculty, and nine instructional faculty; we haven't yet heard if we can hire another tenure-track faculty, but we are keeping our fingers crossed. We hoped for additional hiring opportunities through UofSC's Excellence Initiative, but that program has only been partially supported, and none of the final set of proposals in which we were involved was selected for funding—for now.

The external review was the highlight of the fall semester, with professors Steve Marron of University of North Carolina and Bill Rosenberger of George Mason visiting September 24-25. The Dean seemed favorable to their recommendations for additional hires in data science, though we have not yet learned if the office will support a fourteenth tenure-track position. The review team also recommended a more streamlined PhD program, which we had already identified as an action item in our department retreat, and an increased focus on data science in our undergraduate program.

In the spring, we welcomed **Prof. Xihong Lin** as our eleventh Palmetto Lecturer (see inside), and also had a familiar visitor. **Prof. Ian Dryden** was on sabbatical, and as part of his North American tour, he visited for 11 days. In addition to a talk on networks as functional data, he discussed collaborations with **Xian Huang** and **David Hitchcock** in particular. We also held a "lightning talks" colloquium, with short talks by faculty on a statistics-related issue of their choice; we hope to bring this

popular format back next academic year.

Prof. Dewei Wang is our first McCausland Fellow—a College of Arts and Sciences recognition to support outstanding junior faculty. **Prof. Josh Tebbs** received his second(!) award for the American Statistical Associations (ASA) Outstanding Statistical Application for a Biometrics collaboration with **Chris McMahan** (PhD 2012), Chris Bilder and **Peijie Hou** (PhD 2017). Graduate student **Xichen Mou**, mentored by **Josh Tebbs**, successfully applied for a SPARC fellowship through the Office of the Vice President for Research. We continue to nominate faculty for awards, and have become more active in encouraging graduate student nominations for research awards.

We were able to use lab fees to update LeConte Room 210 for distance instruction. A camera and console were installed so that lectures could be captured by Distributed Learning and shared on Blackboard, our learning management platform. A graphics card was added later in the spring so that students can watch the lecture live through Adobe Connect and interact with the instructor. Thanks to **Mohammed Quasem** for volunteering to be the first to use this new facility. The technology can also be used for "one-button" recording of any lecture or colloquium talk—just plug in a thumb drive, hit a record button, and your lecture will be recorded as a video file on the thumb drive.

Our undergraduate program continues to grow. Last year, we reported 75 to 80 students, while the number of undergraduate majors is now at 95 to 100! Our graduate program is stable at 35 to 40 supported masters and doctoral students. The Distributed Learning program had excellent numbers of masters and certificate. Read our program directors' reports for more highlights.

We are now less than a year away from our big move to the Coliseum in May 2020. We will be there through July 2021 while LeConte College is renovated. With our

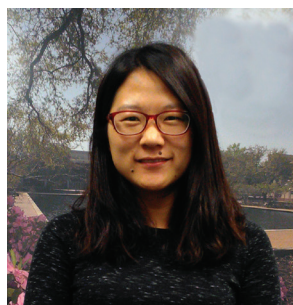
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Palmetto Lecturer Xihong Lin speaks during the South Carolina American Statistical Association Meeting.

35th anniversary approaching, it would be fitting to celebrate it in a renovated LeConte College.

Transitions



Chendi Jiang, PhD who served ably as a temporary full-time instructor in the Fall and Spring of 2018, stepped down from her position. After a brief hiatus, she took a position at Ally Bank as a Senior Model Validation Analyst. We thank her for helping out during a period of expanding service course enrollments and wish her the best in Charlotte, North Carolina..

New Faculty and Staff

Minsuk Shin, Assistant Professor, is our newest tenure-track faculty member, following a successful search this spring for a specialist in data science/complex data/machine learning. He earned his PhD in Statistics at Texas A&M University in 2017 under the supervision of Valen Johnson and Anirban Bhattacharya and holds a post-doctoral position in Harvard University's Data Science Initiative under the supervision of Jun Liu and Natesh Pillai. **Karl Gregory, Assistant Professor**, knew Minsuk at Texas A&M, and we like to think this was a big help in the search.

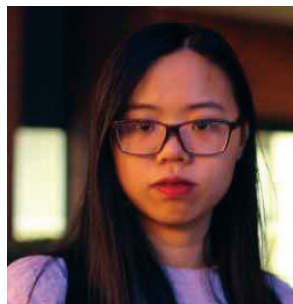
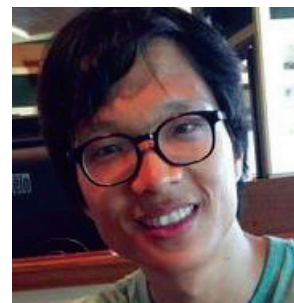
Since earning his PhD, Minsuk authored articles in the *Journal of the American Statistical Association*, *Stastica Sinica* (this paper won a student paper award at the Joint Statistical Meetings), *Bayesian Analysis*, *PloS One*, and *Statistics*.

For his thesis, Minsuk extended his advisor's results on consistency in Bayesian model selection to high-dimensional settings in which the number of predictors is much larger than the sample size. Minsuk independently developed a new class of shrinkage estimators that mimic simple parametric curves when appropriate, but otherwise maintain their nonparametric form; this methodology has been expanded to a wider class of parametric forms, including functional data.

While at Harvard, Minsuk worked with Jun Liu, Professor of Statistics, to develop a unified family of Bayesian shrinkage priors that encompasses well-known methods such as Bayesian LASSO, the horseshoe prior, and spike and slab priors. Minsuk refers to the unified family as "neuronized" priors (he has a facility with labels).

Minsuk also collaborated with Natesh Pillai, Associate Professor (Harvard Data Science Initiative) on Bayesian linear regressions in ultra-high dimensions.

Since his hiring, Minsuk reports that he is working on a project for scalable uncertainty quantification. He wants to introduce and discuss this idea with his new colleagues, and have a small workshop or seminar about this idea in the fall.



Joanna Zou, Instructor, began her first full year of teaching at UofSC earlier this year. She teaches STAT 201: Elementary Statistics and STAT 206: Elementary Statistics for Business. Her first teaching job was at CUNY Hunter College during graduate school and she taught calculus. She discovered her passion for statistics and teaching and decided to pursue teaching full time after she graduated.

Joanna is originally from Chengdu, Sichuan, China. She loves spicy food and enjoys music a lot. She also plays guitar and Chinese Zither.

Faculty and Staff News

Kathryn Dobereiner, Business Manager, has now been with the Department for a little over four years and has now been with the University for 12 years. The time has flown!

Bryonna Edwards, Instructor, completed her first year of teaching at Uof SC, lecturing in STAT 201: Elementary Statistics and STAT 112: Statistics and the Media, and working as lab coordinator of STAT 201.

Not much has changed in a year for **Don Edwards, Distinguished Professor Emeritus**, and wife **Sharon Edwards**. We both continue to work on a part-time basis 10 to 20 hours per week. Sharon is still teaching online and Don still works afternoons as a consultant helping to fight healthcare fraud, mostly with Columbia-based federal contractor Palmetto GBA. He also continues to work on models for subjective-judgment diagnoses with **Xiaoyan (Iris) Lin, Associate Professor** and **Kerrie Nelson, Professor (Boston University)**. It was a real treat for Don to see everyone in the Department this past spring while teaching STAT 540: Computing in Statistics online—by coincidence his biweekly Department visits for live-teaching and office hours occurred on the same day the lunchtime bridge game is held...hmmm. Don's new hips are healing well—he swims a mile twice a week and other mornings he walks several miles, increasing the distance gradually. Come visit us if you're in the Savannah area—we have a guest room, and we're an easy walk to the beach. I'm still reading my edwards@stat.sc.edu email daily.

John Grego, Professor and Department Chair, will be adjusting to life as a regular faculty member with no major administrative responsibilities for the first time in 25 years.

John continued his collaboration with **Paramita Chakraborty, Assistant Professor**, and **Jim Lynch, Distinguished Professor Emeritus** editing manuscripts with **Chong Ma, Principal Biostatistician, Novartis Institutes for Biomedical Research (NIBR), (UofSC Statistics PhD, 2018)** and meeting weekly with Paramita's doctoral student **Tahmidul Islam**. John published papers with **Michelle Androulakis, Clinical Assistant Professor (UofSC Neuropsychiatry)** and grad student **Tianming Zhang, Sr. Statistician (Takeda and Abbott) (PhD, 2019)** and **Greg Carbone, Professor (UofSC Geography)** with Greg's student **Junyu Lu, Postdoctoral Fellow (Purdue University)**. A collaboration with **Ray Torres, Professor (UofSC Earth and Ocean Sciences)** is just getting under way.

John enjoyed presenting during the Department lightning talk seminar this year, and led a wide-ranging department colloquium on the statistical significance controversy. It was fun to exchange ideas with other chairs at a Caucus of Academic Representatives meeting at the American Statistical Association's (ASA) headquarters last summer—their camaraderie will be missed.

John taught STAT 706: Experimental Design and his Honors College service course in Fall 2018, then taught STAT 506: Introduction to Experimental Design in Spring 2019—all his distance courses now have accessible slides, completing a multi-year process! Two students from the Honors College course completed senior theses with him, focusing on a paddling trail guide and interpretive programs at Congaree National Park.

John continues working on the UofSC CIO's IT Advisory Committee, chairing or co-chairing a couple teams working on distance technology. His oldest daughter Caroline received her PhD in Environmental History at University Colorado Boulder in May 2019.

Karl Gregory, Assistant Professor, finished his third year at UofSC and enjoyed teaching STAT 513: Theory of Statistical Inference in the fall, STAT 515: Statistical Methods I, and STAT 720: Time Series Analysis in Spring 2019. Most of his energy in the spring semester was spent preparing the lectures for this class. This was fun and rewarding. Thanks to the students for their participation in the class! Karl took a couple of trips this year, including one trip in December to the National Science Foundation (NSF) to serve on a panel evaluating grant proposals and one to Montréal, Québec to a conference entitled *Colloque CIREQ Montréal d'économétrie: Avancées récentes sur les méthodes de Bootstrap*. Hooray for exotic-sounding conferences with non-English titles! He brought his family along, and all had fun eating croissants and trying to speak French. He will be attending the Joint Statistical Meetings (JSM) in July, and is proud that both of his PhD students, **Tuan Quoc Do** and **Xiangyang Cao**, will give presentations about their research. Karl was very pleased this year to see the paper *Perturbation bootstrap in adaptive lasso*, on which he is a co-author, published in the *Annals of Statistics*.

Tracey Gunter, Instructor, earned her PhD in Measurement and Statistics from Florida State University. She completed her first year of teaching at UofSC, lecturing for STAT 206: Elementary Statistics for Business and STAT 112: Statistics and the Media, while serving as Course Coordinator for STAT 112. This has been an exciting year for her, teaching in her home state. In her first year, she has received the Teaching Towards Inclusive Excellence Certificate and the Fostering Proactive Learning Environment Certificate offered by the Center for Teaching Excellence at UofSC. She was also selected to serve on the College of Arts and Sciences Diversity Committee. In addition to her teaching and service roles, she is preparing two manuscripts on Dependence in meta-analysis and methods for handling dependent effect sizes arising from studies reporting multiple regression analysis. She is truly grateful for the support provided by the faculty and staff in the department and the various opportunities that have been presented to her within her first year at UofSC.

Brian Habing, Associate Professor and Distributed Learning Coordinator, finished his 21st year at UofSC and continues to love teaching and doing research in Item Response Theory (IRT). This year he continued working as Distributed Learning Coordinator (for the Masters and Certificate of Applied Statistics programs), and received a grant from the College of Arts and Sciences to help make the materials being developed for them ADA compliant. Highlights of the past academic year included **Xinchu Zhao** completing his Ph.D. in Statistics,

and co-advisee Phil Sherlock in Educational Studies in partnership with Christine DiStefano, Professor in Education Psychology and Research, UofSC Educational Studies Department in Educational Studies completing his PhD as well. Kevin (now almost 10) is heading on towards fifth grade and is still a Minecraft and Power Rangers fanatic, and is enjoying Cub Scouts and karate.

Geeia Habing, Student Services Program Coordinator, has now been with the Department for a little over three years and has now been working on campus for about 12 years.

Geeia has been busy assisting with course registration; planning for colloquia; creating flyers, posters, newsletters, etc. She keeps busy with helping her husband, **Associate Professor, Brian Habing**, and their son Kevin with Cub Scout activities as well as traveling to visit friends and family.

David Hitchcock, Associate Professor and Undergraduate Director, is finishing his 15th year on the Statistics Department faculty. He continues to serve as Undergraduate Director, overseeing the more than 90 undergraduate students who are Statistics majors. Two of David's Ph.D. students graduated in the past year: **Yawei Liang**, who is working as a Quantitative Associate at Wells Fargo, and **Haigang Liu**, who is taking a job as a statistician for Wayfair, an e-commerce company. In addition, **Geophrey Otero** completed his M.S. thesis, a time series analysis of weather data in several South Carolina cities, under David's supervision.

David continues to work with Ph.D. students **Bridget Manning**, who is investigating clustering categorical data using smoothed dissimilarities, and **Ryan Pittman**, who is researching functional data analysis for river gauge height data and other environmental data. He collaborates with **Dr. Vidya Samadi** of the UofSC Civil Engineering Department on models for rainfall and flood data and **Dr. Joseph Johnson** of the UofSC Physics Department on novel methods of clustering data. Recently he has taught a lot of distributed learning courses and will teach two more in the fall of 2019 (time series, computing in statistics).

Outside of work, David enjoys reading good books and playing tennis, and often helps out with his kids' activities in Cub Scouts and in their sports (tennis, swimming, soccer, basketball).

Yen-Yi Ho, Assistant Professor, enjoyed welcoming the new graduate student cohort and teaching STAT 704: Data Analysis I and STAT 705: Data Analysis II this past academic year. Yen-Yi also enjoys working with graduate students **Zichen Ma**, **Zhen Yang**, and **Wenda Zhang** on research projects. Yen-Yi co-advised Zichen and they submitted a manuscript on modeling dependence structure in count data with applications in analyzing data generated by RNA sequencing technology. Zhen Yang was awarded the Department's Outstanding Graduate Student in Academics award during the Graduate Awards Picnic this year, and he is working on statistical issues related to analyzing single-cell RNA-sequencing data. Wenda received the Department's Outstanding Graduate Assistant award and is working on variable selection for correlations.

This past academic year, Yen-Yi submitted seven collaborative grant proposals and received two National Institutes of Health (NIH) funded grant awards. Her collaborative project with **Jason Kubinak, Assistant Professor of Pathology, Microbiology & Immunology (UofSC School of Medicine)** on B-cell selection received an NIH Exploratory/Developmental Research Grant (R21) award. The other collaborative grant proposal with **Shannon Davis, Associate Professor (UofSC's Biological Sciences)** studying neurocristopathies in deer mice received an NIH Small Grant Program (R03) award.

Yen-Yi was invited to give talks at the *Lifetime Data Science* conference at Pittsburgh, PA and the *Applied Statistics Symposium* by the International Chinese Statistical Association (ICSA) in Raleigh, North Carolina this year. In addition to teaching, mentoring students, and writing grant applications, Yen-Yi also enjoys playing bridge with colleagues at the Statistics Bridge Club. She made the most slams this past academic year.

Xianzheng (Shan) Huang, Associate Professor and Graduate Director, has been actively applying for external grants in recent months relating to her research projects on network inference, mode regression, and directional data analysis. Besides her long-time statistician collaborators, she has also started a new collaboration with a mathematician and a computer scientist. Huang stepped down as the Graduate Director this summer. She looks forward to recruiting new advisees under her research program soon.

Angela Laub, Instructor, just completed her third year in the Department. She has been busy teaching STAT 112: Statistics in the Media and STAT 206: Elementary Statistics for Business.

Xiaoyan (Iris) Lin, Assistant Professor, continues her research in Bayesian modeling and its application to different areas such as survival analysis, medical diagnostic accuracy analysis, and panel count data. During the past year, she, with her students, **Jianhong Wang, Statistical Programming Analyst II (Palmetto GBA), (UofSC PhD 2018)** and **Chunling Wang**, had two papers accepted in *Lifetime Data Analysis and Statistics in Medicine*. She is working with Chunling Wang on a new paper about analyzing multivariate panel count data. She continues to work with **Kerrie Nelson, Professor (Boston University)** and **Don Edwards, Distinguished Professor Emeritus**, under their National Institutes of Health (NIH) Research Project Grant (R01) and aims to develop new statistical methods to study diagnostic accuracy and consistency amongst many experts in large-scale screening studies. She is working on extending latent class models for binary data to analyzing ordinal data to improve the estimation of diagnostic accuracy. Recently, she also developed a research interest in using Gaussian graphical model techniques to analyze survey data and genomic data. Her master's student, **Xinxin Hu**, graduated in Spring 2019.

Geophrey Otero, Instructor, completed his third year of teaching in the Department. He has been very busy teaching STAT 110: Introduction to Statistical Reasoning and serving as the course coordinator for this class as well.

Amanda Murphy, Instructor and Scheduling coordinator, just finished her third year as an instructor and her first year as scheduling coordinator for the department. Amanda continues to teach STAT 201: Elementary Statistics and STAT 206: Elementary Statistics for Business, which she still loves and looks forward to doing for many years to come. Each semester brings new challenges and new ways

to attempt to teach the materials in the best possible way. This past year was the first time Amanda taught an online-blended version of STAT 201 which was a great experience to see the differences between the traditional format and the online format of classes as well as to get to see first-hand the differences in the student interaction between the two delivery forms. Amanda will be taking the knowledge she learned from STAT 201 online and applying it to developing an online version of STAT 206 that will, hopefully, begin in Summer 2020. The first year as Scheduling Coordinator has been full of a lot of surprises and an opportunity to work with faculty members that she had not worked with before. Amanda looks forward to using the knowledge she learned from the first year to make the upcoming scheduling process a smooth one.

Amanda spends her time away from campus chauffeuring her girls, Kinsey (9) and Katherine (7), around to all their extracurricular activities and hanging out at the house with her family.

Edsel Peña, Professor, was happy to graduate another student, **Shiwen Shen, Senior Data Scientist (New York Life Insurance) (PhD 2018)**. (See Shiwen's picture with other UofSC graduates which was taken recently in NYC) Another PhD student, **TaeHo Kim**, is expected to graduate this August. He will be going to Haifa, Israel for a post-doctoral position at the University of Haifa. Edsel and Kim recently had their paper on *Median Confidence Regions in a Nonparametric Model* accepted for publication in the *Electronic Journal of Statistics*. Edsel has also been busy traveling to different exotic places this year, with his wife, **Marge Peña, Director-Mouse Core, (UofSC Center for Colon Cancer Research) and Associate Professor (UofSC Biological Sciences)**, being the most contented visiting all these places. In March, Edsel was a Visiting Professor at the King Abdullah University of Science and Technology (KAUST) located near the Red Sea in the Kingdom of Saudi Arabia, considered to be the best and most endowed (financially) university in the Middle East, where he gave four talks over a period of 10 days. In April he visited Florida State University in Tallahassee to attend and to give a talk at the 60th anniversary celebration of the Department of Statistics where he got his MS and PhD degrees. During a period of one month from May to June, he visited Osaka, Japan; the bustling city of Manila, the resort town of Tagaytay (where an active volcano, Taal, is located) in the Philippines; and Hong Kong, China. In Manila he attended and gave a talk at the *Philippine-American Academy of Scientists and Engineers (PAASE) conference*; while in Hong Kong, he chaired a session and gave a talk at the *Mathematical Methods in Reliability (MMR) conference* held at The City University of Hong Kong; and he also gave a talk at The University of Hong Kong. While in Japan, he visited Kyoto where he finally saw in person the Golden Pavilion, which was featured in the 1956 novel by Yukio Mishima entitled *The Temple of the Golden Pavilion* which he read while a high school student almost a half-century ago. This August he will visit Singapore to give a talk at the National University of Singapore, and will then attend and give a talk at the International Statistical Institute (ISI) sponsored *World Statistics Congress* in Kuala Lumpur, Malaysia. Prior to these trips to Singapore and Kuala Lumpur, he will attend the *Joint Statistical Meetings (JSM)* in Denver. He continues to serve as Executive Secretary of the Institute of Mathematical Statistics (IMS), and also serves in several committees of the American Statistical Association (ASA). He also organized two sessions at the recently-held *Lifetime Data Science (LIDS) conference* in Pittsburgh, where he invited several UofSC graduates to give talks.

Mohammed Quasem, Instructor, entered his 14th year of teaching in South Carolina this year and his second year in the Department. He has kept very busy teaching STAT 201: Elementary Statistics, STAT 205: Elementary Statistics for the Biological and Life Sciences, STAT 515: Statistical Methods I, and STAT 600: Statistics for Applied Management.

Wilma Sims, Manager of the Statistics Lab, is in her tenth year in the Department. See page 8 for an update of the Stat Lab's activities for this past year.

Joshua M. Tebbs, Professor, is mentoring two PhD students in Statistics (**Xichen Mou** and **Ryan Stutz**) and currently serves as Chair of the Faculty Grievance Committee for the University. He continues to work on his NIH funded research in group testing and is a regular panel member on the Biostatistics, Methodology, and Research Design study section for NIH. His recent paper, "Hierarchical group testing for multiple infections," written with co-authors **Peijie Hou** (former graduate student at UofSC), Christopher Bilder, and Christopher McMahan, recently won Best Paper in Biometrics by an IBS member for 2017 and the American Statistical Association's Outstanding Statistical Application Award for 2018.

Lianming Wang, Associate Professor, had another successful academic year. He published three research papers in *Computational Statistics and Data Analysis*, *Statistics in Medicine*, and *Biometrical Journal*. He was a co-investigator on two NIH-funded R01 and R21 projects with Principle Investigator **Daping Fan, Associate Professor (UofSC Cell Biology and Anatomy)**. He also graduated two PhD students, **Qiang Zheng** and **Yifan Zhang**, this summer.

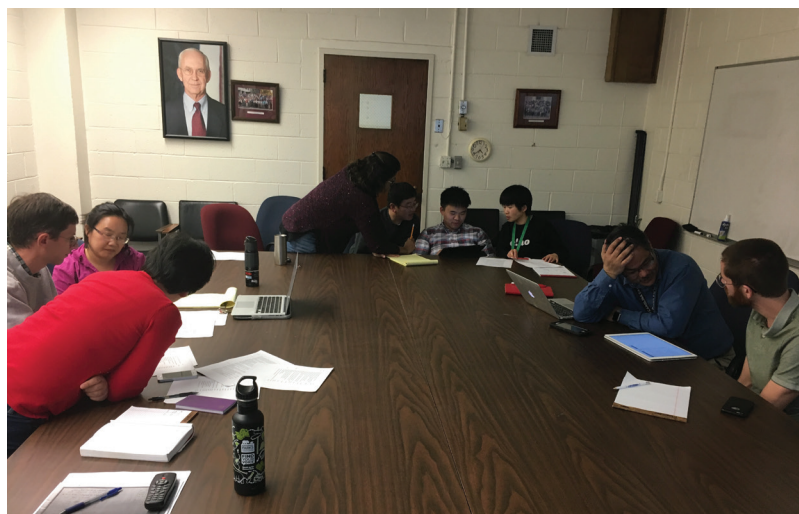
Dewei Wang, Assistant Professor, continues his research in group testing, pooled biological marker (biomarker) data analysis, and order-restricted inference. He directed his PhD student, **Juexin Lin, Senior Data Scientist (Walmart Labs) (PhD 2019)**, to develop a new regression framework for multiple-infection group testing data. A paper summarizing this project was recently accepted by *Statistics in Medicine*. Another PhD student, **Xichen Mou, Assistant Professor of Biostatistics (University of Memphis-Fall 2019), (PhD 2019)**, developed a nonparametric conditional density estimation method for pooled biomarker data. This project was supported by Dewei's recently awarded R03 grant from the National Institutes of Health (NIH). Xichen will graduate this August and then join the University of Memphis as a tenure-track faculty in Biostatistics. In the area of order-restricted inference, Dewei has collaborated with his former PhD student **Chuan-Fa Tang, Assistant Professor (University of Texas Dallas), (PhD 2017)**, to improve the goodness-of-fit test of uniform stochastic ordering proposed in Chuan-Fa's dissertation work. Two papers have been submitted for publication. In addition to Dewei's current R03 grant, he collaborated with **Qi Zheng, Assistant Professor (University of Louisville)** to submit a National Science Foundation grant proposal and a new NIH R03 grant proposal. Dewei has also enjoyed his first time teaching STAT 712: Mathematical Statistics I and STAT 713: Mathematical Statistics II.

Gail Ward-Besser, Instructor, taught STAT 110: Introduction to Statistical Reasoning, and STAT 206: Elementary Statistics for Business.

Nick Yell, Instructor, kept busy teaching STAT 205: Elementary Statistics for the Biological and Life Sciences and STAT 206: Elementary Statistics for Business,. This is his second year working in the Department.



Faculty, Staff, and family at the Spring Graduate Student Awards Picnic 2019. Geeia Habing, John Grego, Tracey Gunter, Mohammed Quasem, Nick Yell, David Hitchcock, Amanda Murphy, Karl Gregory, Angie Laub, Gail Ward-Besse, Geophrey Odero, Kathryn Dobereiner, Josh Tebbs, Iris Lin, Julia Wang, Lianming Wang, Brian Habing, Edsel Peña, Yen-Yi Ho, Viva Gregory, and Dewei Wang



Department members deep in the throes of small-group discussions about changes to our PhD program.



Fun at the Annual Holiday Celebration at **Prof. John Grego's** home.



Profs. Beth Johnson (MS 2002, PhD Ed Research 2009) and her husband **David Holmes** stopped by the department on their way to Kansas City Missouri to grade for the AP Statistics Exam. Beth and Dave now teach at George Mason University. Also pictured at the far left, **Associate Prof. Brian Habing**.



A good crowd for the South Carolina American Statistical Association (SCASA) Annual Meeting.

Statistics Consulting Lab



Wilma J. Sims, Stat Lab Manager

The Stat Lab operates with one full-time staff member, manager **Wilma Sims**. Two graduate students, **Xiangyang Cao** and **Quan Lin**, assisted in the lab this past year, performing data entry and analysis for paid and contract clients. In the coming year, we plan to explore options by which undergraduate statistics majors can obtain consulting exposure and experience through the lab.

The number of clients visiting the lab for assistance has remained steady over the last few years, with the vast majority of clients receiving gratis consulting. In an effort to increase awareness about the lab, we spoke with the Graduate School and Office of the Vice President for Research about lab services and had the lab added to the list of UofSC Research Centers and Institutes on the Office of the Vice President for Research webpage. We also updated the Stat Lab brochure and began limited distribution. We continue to make a presentation on data management and analysis to first-year students in UofSC's School of Medicine Genetics Counseling Program, and we were invited to conduct a seminar on Stat Lab resources at UofSC Upstate.

Palmetto Lecturer X

Dr Xihong Lin, our 10th Palmetto Lecturer, visited campus March 6-9, 2019; **Lianming Wang, Associate Professor** made arrangements.

Dr Lin is Professor of Biostatistics and Coordinating Director of the Program of Quantitative Genomics of the Harvard T.H. Chan School of Public Health, and Professor of Statistics of Harvard Faculty of Arts and Sciences. She is the contact Primary Investigator for a prestigious P01 grant from the National Cancer Institute (NCI), the Harvard Genome Sequencing Program Analysis Center funded through the National Human Genome Research Institute, and a training grant on *Joint Interdisciplinary Training in Statistical Genetics/Genomics and Computational Biology* from National Institute of General Medical Sciences (NIGMS).

Her group's major research interests lie in development and application of statistical and computational methods for analysis of high-throughput genetic and genomic data in epidemiological, environmental, and clinical studies, for analysis of complex exposure and phenotype data in observational studies, and statistical learning and inference methods for massive data.

She is a fellow of the Institute of Mathematical Statistics (IMS), the American Statistical Association (ASA), and the International Statistics Institute (ISI), and has been awarded the Noether Young Scholar Award by ASA, the Committee of Presidents of Statistical Societies (COPSS) Presidents' Award, the Method to Extend Research in Time (MERIT) Award from NCI, and the Spiegelman Award from American Public Health Association (APHA). She also received the F.N. David Award from COPSS and learned she had

been elected to the National Academy of Medicine (NAM) shortly after we invited her to speak.

Prof. Lin's colloquium talk discussed challenges in analyzing massive data from the genome, exposome, and phenome. She discussed the importance of scalable statistical inference integrated with computational science, information science and domain science. Key points were illustrated using analysis of data from Whole Genome Sequencing (WGS) association studies, integrative analysis of different types, and sources of data using causal mediation analysis, analysis of multiple phenotypes (pleiotropy) using biobanks and Electronic Medical Records (EMRs), reproducible and replicable research, and cloud computing.

Prof. Lin was the keynote speaker at the South Carolina American Statistical Association (SCASA) Annual Meeting. She discussed scalable statistical inference for analysis of high-dimensional independent variables and high-dimensional outcomes in the presence of dense and sparse signals. Examples included testing for signal detection using the Generalized Higher Criticism (GHC) test, and the Generalized Berk-Jones test, the Cauchy-based omnibus for combining different

correlated tests, and omnibus principal component analysis of multiple phenotypes. The results were illustrated using data from genome-wide association studies and sequencing studies.

Her talk was preceded by presentations by graduate students from the UofSC Statistics and Epidemiology and Biostatistics Departments, and the Medical University of South Carolina (MUSC). Prizes were awarded to **Zichen Ma** of the UofSC Statistics Department and Zequn Sun of MUSC.



Palmetto Lecturer Xihong Lin

Student News

Graduate Awards

2018-2019

Outstanding Graduate Assistant

Ryan Pittman
Nubaira Rizvi
Wenda Zhang

Outstanding First Year Graduate Student

Yang He

Outstanding Graduate Student in Academics

Zhen Yang

Citizenship Award

Zichen Ma
Yiyao Zhang

James D. Lynch Graduate Student Research Award

Taeho Kim

Undergraduate Awards

2018-2019

Department of Statistics Excellence in Academics

Thomas Michael Best

John D. Spurrier Scholarship

Thomas Douglass Beckett

Mu Sigma Rho Award

Gavin Thomas Cauley

Stephen D. Durham Award

Kara Elizabeth Sulzer



Assistant Prof. Dewei Wang awarded Mu Sigma Rho certificates to Xiran Wang and Caroline Kerfonta at the Department's annual picnic.

Graduate Program Degrees

August 2018–May 2019

PhD in Statistics

Seung Chul Baek

Xiang Li

Juexin Lin

Chong Ma

Yanlei Peng

Shiwen Shen

Jianhong Wang

Qianqian Wang

Xinchu Zhao

Master of Science in Statistics

Bryonna Bowen

Xinxin Hu

Yuan Huang

Stephanie Jones

Pedro Nielsen Rotta

Dongho Shin

Jeff Thompson

Master of Science in Applied Statistics

Aaron Brown

Dillon Clopton

Joy Connor

Christopher Galeano

Heather Haskell

Horst Daichendt

Junyu Lu

Sarah Marchi

James McNeigh

Bradley Perricelli

Marvin Rogerson

Gregory Saint-Amour

William Z. Smith

Daniel Tompkins

Md Majbah Uddin

Grady Weaver

Alissa Wise

Matthew Yates

Junyu Yu

Post-Baccalaureate Certificate of Applied Statistics (PBAC-AS)

Sara Dixon
Qian Fan
Jason Keels
Fawad Kirmani
Jeptha McNair
Anastasia Piteraia
Alicia Plemmons

Certificate of Graduate Study in Applied Statistics (CGS-AS)

Adeweal Adeluyi
Elmira Aknazarova
Joseph Cahill
Faraday Davies
Melissa Gentry
Kathleen Jocoy
Heather Jones
Kai-Yen Lin
Jack McKee
Victoria Rizzardi
Jeannelle Scheper
Breelynn Schwecke
Kyle Smith
Margaret Tate
Gabriela Wrobel

Spring Graduate Student Awards Picnic 2018



Graduate Students at the Spring Graduate Student Awards Picnic 2019. Yizeng Li, Qiang Zheng, Zhen Yang, Xiangyang Cao, Zichen Ma, Tuan Quoc Do, Haigang Liu, Yiyao Zhang, Yifan Zhang, Xiran Wang, Quan Lin, Caroline Kerfonta, Yun Yang, Ryan Pittman, Chunling (Penny) Wang, Wenda Zhang, Ennan Gu, Tahmidul Islam, Yang He, and Jianhuai Hu.

Graduate Program

Our graduate students' dissertation research with their advisors continue to produce a steady flow of publications in academic year 2018-2019 that appeared in mainstream statistical journals such as *Biostatistics*, *Electronic Journal of Statistics*, *Journal of Nonparametric Statistics*, *Lifetime Data Analysis*, and *Statistics in Medicine*.

With support through UofSC's Office of Research, American Statistical Association (ASA), and National Science Foundation (NSF) travel grants, our graduate students gave talks and presented posters at the Institute of Biometric Society's Eastern North American Regional Meeting, The SCROS Research Conference, the Annual meeting of the National Council on the Measurement in Education, the ASA Risk Section Bernard Harris Symposium and the Joint Statistical Meetings (JSM) in the past academic year.

The Department supported around 40 graduate students in academic year 2018-2019. The majority of our recent graduates landed their first jobs in industry as data scientists. We also have recent graduates continued their career in academia as an instructor in our own department, a tenure-track assistant professor at the University of Memphis, or as a postdoctoral research fellow. We will be supporting ten incoming graduate students in Fall 2019.

Outstanding Graduate Assistant Awards went to: Ryan Pittman, Nubaira Rizvi, and Wenda Zhang. The Outstanding Graduate Student in Academics was Zhen Yang, and the Outstanding First Year Student was Yang He. Zichen Ma and Yiyao Zhang won the Citizenship Award, and the James D. Lynch Award for Graduate Research went to Taeho Kim.

Distributed Learning

The Department's Master of Applied Statistics (MAS) and Certificate of Graduate Study in Applied Statistics (PBACC) continued to be strong!

Nine students were award their MAS degrees between August 2018 and August 2019: Aaron Brown, Galeano Christopher, Jeremy Cruthirds, Horst Daichendt, Colleen Hewitt, Megan Hinger, Michael Hornsby, James McNeish, and Daniel Tompkins.

Fifteen students were awarded the certificate: Adeweale Adeluyi, Elmira Aknazarova, Joseph Cahill, Faraday Davies, Melissa Gentry, Kathleen Jocoy, Heather Jones, Kai-Yen Lin, Jack McKee, Victoria Rizzardi, Jeannelle Scheper, Breelynn Schwecke, Kyle Smith, Margaret Tate, and Gabriela Wrobel.

The College of Arts and Sciences awarded the Department a grant that is being used to upgrade STAT 700: Applied Statistics I and 701 : Applied Statistics 2 this fall, including making their materials screen-readable for Americans with Disabilities Act (ADA) compliance. In conjunction with this the online materials on the web page are being updated for our distance degrees

Other major distributed learning news includes LeConte 210 being equipped for the recording of distance classes. A few bumps at the beginning of the semester have been ironed out, and it is successfully being used this semester for STAT 515: Statistical Methods I and STAT 540: Computing in Statistics.



David Hitchcock accompanies undergraduate students during Awards Day. Pictured are Gavin Cauley (Mu Sigma Rho Award), Thomas Best (Excellence in Academics Award), and Kara Sulzer (Stephen Durham Award).

Undergraduate Program

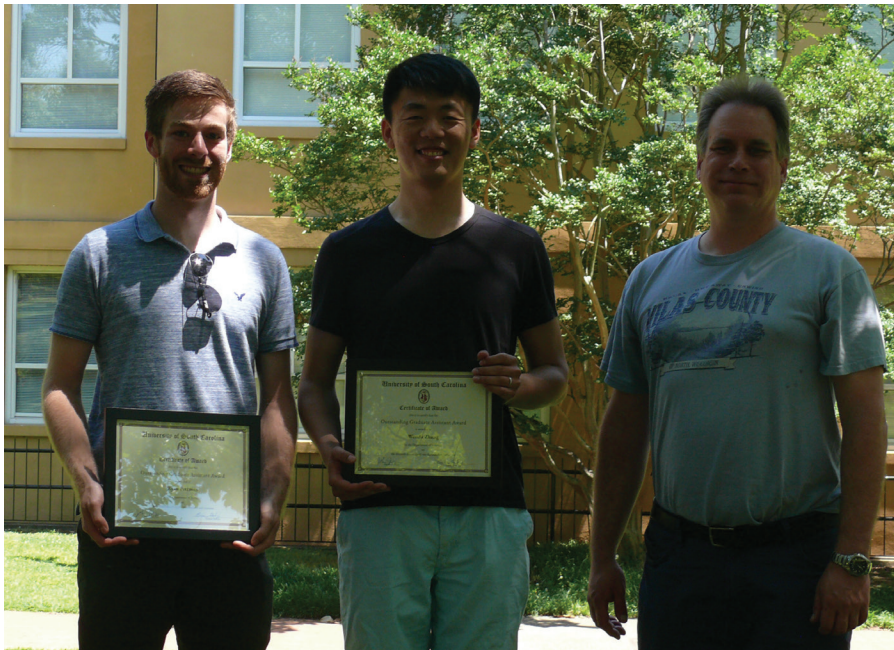
The growth in our undergraduate statistics program continues without an apparent end in sight. We had over 90 statistics majors in Spring 2019, many in our popular actuarial science concentration. David Hitchcock continues as undergraduate director, entering his fourth year in this role.

With the support of the dean's office, the department has stepped up its recruiting initiatives this year. Recruiting letters were sent to incoming accepted freshmen who show interest in statistics, and profiles of current statistics majors were compiled for recruiting purposes. The statistics department also advertises its programs at the Orientation resource fair, where new freshmen and transfer students can learn about statistics programs.

Among the most important aspects of the undergraduate program is student advising. We again have Jenny Leist as our First-Year Advisor, who heads up the advisement of the first-year statistics majors, overseen by the undergraduate director. Once the students reach their sophomore year, they meet with one of our departmental undergraduate advisors: David Hitchcock, Dewei Wang, and Yen-Yi Ho, who will be joined in 2019-2020 by Brian Habing. In the upcoming year, Lianming Wang and Karl Gregory will cycle off the undergraduate advisory committee, and we thank them for their excellent service as advisors.

Several students won awards in Spring 2019 for their outstanding academic work: Gavin Cauley won the department's leading honor, the Mu Sigma Rho award. Kara Sulzer won the Stephen Durham award, signifying recognition as one of the two top experienced statistics majors. Thomas Best won the department's Excellence in Academics Award as top performer among sophomore/junior level majors. Finally, Thomas Burkett won the John Spurrier Scholarship as the top first-year statistics major. These were only a few of the many students who excelled in their academic achievements.

The data science minor that the statistics department offers (along with the computer science) continues to be very popular. The cross-listed course in Big Data Analytics, which starting this spring now covers Hadoop, has grown in popularity. Our modernized Applied Multivariate Statistics course has higher enrollment than ever, and starting in 2020, it will be offered every year rather than every two years, as students seek more training in data science-type coursework. The undergraduate program has set a goal to continue to meet those needs in the future by offering more courses involving programming and the analysis of large data sets.



Assoc. Prof. Brian Habing presents Outstanding Graduate Assistant awards, on behalf of Graduate Director Xian Huang, to Ryan Pittman and Wenda Zhang. Awardee not pictured, Nubaira Rizvi.

Statistics Alumni and Family News



Brad Llewellyn (MS 2012) was invited to speak for the second straight year at a joint meeting of Pi Mu Epsilon, Gamecock Math Club and Statistics Club. Brad, currently a Service Engineer for Microsoft Azure Team, spoke on the networking and training needed to become a data scientist.



Emmy Smith (MS 2005) established an endowed fellowship through a life insurance policy to benefit graduate students in our department who are members of under-represented groups. Emmy visited the department in October and provided insights into private industry careers with some particular insights for women. She is currently employed at Amazon Web Services as a Senior Business Intelligence Engineer.



UofSC was well-represented at the recent Southern Regional Conference on Statistics (SRCOS) Summer Research Conference in Carrollton, Kentucky. Pictured are **Carter Allen** (BS 2017, PhD candidate at MUSC Biostatistics), **Prof. Iris Lin**, **Jackson Maris** (BS student), **Bridget Manning** (PhD candidate), **Elaina Reck** (BS), **Rachel D'Anna** (BS), **Ryan Rogers** (BS), and **Prof. David Hitchcock**. Bridget Manning was one of five graduate students to receive a R.L. Anderson Award for her poster presentation.



Faculty Members from the Statistics and other Departments gather once or twice a week to play bridge. There is a solid group that has kept this tradition going on for years!

We Want To Hear From You!

We would like to share information about your accomplishments and activities. If you have changed jobs, received a promotion or award, earned a new degree, married, traveled, or anything new has happened to you, please let us know. Send information to Geeia Habing, habingg@mailbox.sc.edu along with any updates in your mailing and/or email addresses.

Thank You for Your Support!

Scholarships and fellowships are funded with interest from their respective funds. Contributions to these funds will continue to help in the development of young statisticians. Contribution forms for these funds are attached for your convenience at the end of this newsletter. Thank you so much!

To donate, please go to <https://sc.edu/giving/givenow/education> and use a keyword search for any of the four funds listed below.

UofSC Educational Foundation

Contributions to the department can be made to any of three funds within the UofSC Educational Foundation. Your tax-deductible gifts can be distributed among the three funds in any way you specify.

Scholarships and fellowships are funded with interest from their respective funds. Contributions to these funds will continue to help in the development of young statisticians. Contribution forms for these funds are enclosed for your convenience at the end of this newsletter.

The John D. Spurrier Scholarship

On the event of his retirement in 2008, the department established the John D. Spurrier Scholarship Fund to provide scholarships for first-year undergraduate statistics majors. The fund was vested in 2010 and we now offer an annual scholarship whenever we have an eligible candidate. Please do consider helping with contributions to the Spurrier Scholarship Fund (Account B11516).

The W. J. Padgett Fellowship

This fund (Account 1B1593) was established in 1993 and helps us attract outstanding graduate students to the department by offering supplemental fellowship stipends to the regular assistantship. The Padgett Fellowship has been offered to at least one new graduate student each year in recent years and can really make the difference when competing for students against other outstanding statistics programs.

The Department General Fund

The Department of Statistics General Fund is critical to our operations and recruiting efforts. By law, certain expenditures such as the new James D. Lynch Graduate Research Award, the Stephen D. Durham Undergraduate Award, and other student awards and reimbursements can only be paid with these contributed funds. Please consider a contribution to the Statistics Department General Fund (Account 1A3410).