



THE UNIVERSITY OF GEORGIA
DEPARTMENT OF STATISTICS
STATISTICS NEWS

Spring
2018



LETTER FROM THE DEPARTMENT HEAD

T.N. Sriram | Interim Department Head

Dear Alumni and Friends:

This has been an extraordinary year of change, excellence, growth, and new initiatives. Relocation to Brooks Hall on North Campus, five promotions, a new faculty and three new hires, a new dual-degree, and a new bachelor's degree in Data Science on the horizon all point to a very bright future for the Department of Statistics at UGA.

While major renovations were underway on the 4th and 5th floor of Brooks Hall and in Caldwell Hall next door, we were busy chalking out the logistics of our big move. The actual move to Brooks Hall happened during December 2017. Our new facility has spacious offices with high ceilings and large windows, wide corridors, two skylights, two research laboratories with spacious meeting rooms, a new Cohen room, small meeting rooms, a large conference/class room, even a large kitchen area, and a spacious Statistical Consulting Center. In addition, we converted five existing classrooms in Caldwell Hall into four state-of-the-art instructional laboratories and a graduate student laboratory (*Bargmann Lab*) for our exclusive use. We are very proud of our new home, which is a significant upgrade in comparison to our old building.

We had promotions galore this year. Congratulations to Dan Hall, Abhyuday Mandal, Cheolwoo Park, and Wenxuan Zhong on their recent promotion to the rank of Full Professor and Pengsheng Ji

on his promotion to the rank of Associate Professor with tenure. This is an impressive slate of promotions and we all have reason to be very proud of their superior efforts and accomplishments.

We welcomed a new Assistant Professor, Qian Xiao, who brings his expertise in computer experiments and experimental design from UCLA. We also grew in faculty size. In Spring 2018, we recruited one open-area Assistant Professor in Statistics, another Assistant Professor in Statistical Machine Learning (SML), and a Lecturer of Statistics and Business Statistics, all of whom will join us in Fall 2018. The SML and the Lecturer positions were part of a Presidential Hiring Initiative—*Investing in the Student Experience*.

“The actual move to Brooks Hall happened during December 2017. Our new facility has spacious offices with high ceilings and large windows...”

We were very fortunate to receive these two new positions this year! While our total faculty size next year will increase to 26, our Senior Lecturer, Kim Gilbert, has recently announced her retirement from Fall 2018. She has been a dedicated faculty member of the Department of Statistics, playing multiple lead roles in our instructional mission since 2008. We thank her for all the years of wonderful service to the Department of Statistics at UGA and the Statistical Education community.

The department has redoubled its commitment to promote curricular

innovations in Statistics. In August 2017, Shuyang Bai and Abhyuday Mandal taught the inaugural Statistics Bootcamp—a rigorous overview of important topics in Mathematical Analysis and Linear Algebra for incoming MS and Ph.D. students. We recently introduced a new dual-degree program, BS in Statistics and MS in Educational Psychology & Quantitative Methodology, with the College of Education. This provides an opportunity to earn both a bachelor's degree and a master's degree in five years or less, which would give ambitious and motivated students a competitive advantage in today's knowledge economy. An ad hoc committee chaired by Dan Hall proposed a complete revision of our graduate curriculum, which was recently approved by the faculty. Paul Schliekelman and Megan Lutz developed a new sequence of statistics courses for majors in the life/biological sciences. However, a unique accomplishment this year was submission of our proposal to introduce a new bachelor's degree in Data Science at UGA. Faculty members in Computer Science and Statistics spent more than a year envisioning, planning, and designing the new degree, which will bridge key elements of Computer Science and Statistics into an interdisciplinary degree to develop future generations of data scientists. This is awaiting approval by the Board of Regents. We will be launching this new degree in Fall 2019.

Our faculty continue to receive

Inside This Issue

Letter from Department Head	1-2
Undergraduate Program Update	2
Graduate Program Update	3
Statistics Student Update	3
Colloquium Series Update	4
Consulting Center Update	5
STAT Club Update	5
New Grant Projects	6
Industry Day Fall 2017	7
Industry Day Spring 2018	7
New Faces	8
Faculty Spotlight	8
CURO	9
Best Capstone Student 2018	9
Student Awards	9
Alumni Profile	10
Alumni Updates	10-11
Donor Recognition	12

Statistics

LETTER FROM THE DEPARTMENT HEAD *(continued)*

TN Sriram | Interim Department Head

special recognition, honors, and awards for their important contributions to research, teaching, and to applications of importance in other fields.

Catherine Case is the recipient of the 2018 *J. Hatten Howard III Award* at UGA, which recognizes her special promise in teaching Honors courses early in her career. Jennifer Kaplan was selected as the Editor of the *Statistics Education Research Journal*. Nicole Lazar ended her term as Editor of *The American Statistician* and was recently elected President of the *Caucus for Women in Statistics*.

Abhyuday Mandal has been recognized for the second time for his superior teaching by the university and he was one of the five finalists of the Franklin College Outstanding Undergraduate Teaching Award. Lynne Seymour's 2017 article in the *Annals of the Association of American Geographers* has been named the 2018 *John Russell Mather Paper of the Year* by the Climate Specialty Group of the *American Association of Geographers*. Wenxuan Zhong's research was featured in *Technology.org*, *The Franklin Chronicles*, *UGA Research*, *UGA Today*, and *Science Diffusion*. Joint work of Wenxuan Zhong and Ping Ma on *New Statistics for Smelling out Disease* was featured in *Scientia*—a scientific communication that connects science and society.

We also engaged in outreach

efforts to promote research in Georgia high schools. Wenxuan Zhong and her *Big Data Analytics* laboratory students were invited to a Speaker Series event at the Gwinnett School of Mathematics, Science, and Technology (GSMST) to present their research in utilizing statistical methods to detect bacteria and Big Data. Ping Ma and his lab members were invited to Lambert High School to present their research in big data analytics.

Graduate Students also received special recognition and awards. At the department level, Elizabeth Gieseck received the *Best MS Student Award*, JC Poythress clinched the *Best Beginning Ph.D. Student Award*, while Xin Xing won the *Best Senior Student Award*. Graduate students were also recognized for consulting service and teaching. Yan Du won the *Best Statistical Consulting Assistant (CA) Award* and Mengyao Li received the *Best Volunteer CA Award*, while Natalia Costa Araujo, Kristen Knight, Ye Wang, and Benjamin Washington won the *UGA Outstanding Teaching Assistant Award*. In a Student Poster Session held during the 2017 Georgia Statistics Day, Rui Xie received the second prize and Cheng Meng and Chul Moon were Runners Up. At the national level, Xinlian Zhang won a Student Paper Competition on Bayesian Statistical Science organized by the *American Statistical Association (ASA)* and received the highly competitive Dissertation Completion Award

at UGA, and Xiaoxiao Sun won a Student Paper Competition on Statistical Computing and Graphics conducted by the ASA; the award will be presented at the 2018 Joint Statistical Meeting.

Our undergraduate majors are also excelling in research, receiving recognition, and joining top places after graduation. Rhiannon Euhus' research article on "*Health Status and Healthcare Access of Incarcerated Women*" won the national research paper competition organized by the *American Society of Criminology*. Connor Gibbs carried out multiple research projects, while Shuchi Goyal was awarded a *Center for Undergraduate Research Assistantship* to pursue her research on small area estimation, and Shreya Ganeshan was honored with the Udall Scholarship. After graduation, Connor Gibbs will join Colorado State University and Shuchi Goyal will join UCLA to pursue a Ph.D. in Statistics. Rachel Zilinskas will go to University of Minnesota Biostatistics, while Shreya Ganeshan will join Google.

Our Seminar Series, Georgia Statistics Day, Industry Days, UGA-Clemson Joint Colloquium, and Bradley Lecture Series are vibrant as ever. Xihong Lin from Harvard University delivered the Plenary lecture at the 2017 Georgia Statistics Day; Hendrik Hamann (IBM) and William Myers (Procter & Gamble) presented talks on statistical applications in industries; Daniel Apley (Northwestern University) gave the UGA-Clemson Colloquium talk; and

this year's Bradley Lecturer was Larry Wasserman — winner of the prestigious 1999 Committee of Presidents for Statistical Societies (COPSS) Presidents' Award—from Carnegie Mellon University.

Now more than ever, the growth of our program stems from the investment of our generous alumni and corporate sponsors. Your donations fund travel of graduate and undergraduate students, the Best Capstone Project Award, the Best Consulting Assistant Award, among others. Most notably, we recently facilitated a planned gift agreement between Mr. James David Lifsey and the University of Georgia Foundation establishing the "*James David Lifsey Graduate Fellowship fund in Statistics*." The creation of an endowed professorship for statistics is one of the major goals of our department, and you can help make it happen!

The Department organized

an event for alumni and friends at the 2017 Joint Statistical Meetings in Baltimore, which was well-attended. We hope to continue this tradition every year. We just heard that one of our alumnus, Dipankar Bandopadhyay, was named a 2018 Fellow of the ASA, which is a highly prestigious award. Dipankar is our third alumni to become a Fellow of the ASA since the mid-1990s. I want to take this opportunity to wholeheartedly thank all of you who made donations to the department during the past years. You are recognized by name in this Newsletter.

We are looking forward to another exciting year ahead. I hope you enjoy reading this Newsletter. We will do our best to stay connected. And, do drop by to see us in Brooks Hall when you are in Athens.



T.N. Sriram

UNDERGRADUATE PROGRAM UPDATE

Anne Vencill | Undergraduate Advisor

As we come to the close of another academic year, the undergraduate program in statistics continues to grow. Spring semester began with 185 declared majors, 92 minors, and 2-3 students contacting the department to inquire about or change their major to statistics every week.

Perhaps the most exciting undergraduate news of the year

was the approval of the proposed BS-Data Science major by University Council at the end of April. The proposal (collaboration between the statistics and computer science departments) will now go to the Board of Regents for final approval. If all goes to plan, the new major will be available to students in Fall 2019.

During Fall Semester, Provost

Whitten unveiled the Double Dawgs program designed to allow students to complete a bachelor's and master's degree in five years or less. The statistics department currently offers a BS-Statistics/MA-Educational Psychology (Quantitative Methodology) Double Dawg. There are four students interested participating in this program. Several other Double

Dawgs offerings are in works and should be available to students in the Fall semester. A number of course changes went into effect in Fall 2017 including: increasing the capstone course hours from 2 to 3; adding STAT 4360 (Statistical Programming) as a prerequisite to the first semester capstone; adding MATH 2250 (Calculus I) as a prerequisite for STAT 4230

and STAT 4220. Linear algebra (MATH 3300) has moved from Area VI into the major and the number of required electives has increased from 3 to 9.

Finally, our department bids farewell to 40 undergraduate students who will complete their degrees in 2018. These students have been an asset to our program and we wish them well in their future endeavors!

GRADUATE PROGRAM UPDATE

Cheolwoo Park /Graduate Coordinator

I hope that 2018 is off to a good start for everyone. I can't believe that it is already spring. Moving into the Brooks Hall was the biggest change this year, but several other changes also have happened in the graduate program. Beginning last summer, our department started offering a two-week "Statistics Bootcamp" course to the incoming graduate students. This course is meant to provide a rigorous overview of important topics in mathematical analysis and linear algebra, which are fundamental mathematical tools for probability and statistics. Each day there were two 2-hour lectures plus one tutorial. We received good feedback on the first boot camp and plan to continue to offer it in the future. We have also introduced a mentor-mentee system by pairing current and new students. We hope that these changes help incoming students get settled into the graduate program comfortably and have a smooth experience in their first-year courses. Recruiting well-prepared students is important but always challenging. To advertise our graduate program, I have traveled to a few places. I visited Brigham Young University (BYU) in

Utah in November 2017. In the Statistics Department at BYU, there are currently 528 undergraduate statistics majors and 28 MS students. While I was visiting the department, I gave a presentation about UGA and the Statistics graduate program, and had individual meetings with faculty members and students. In September 2017, I attended StatFest (<https://nhorton.people.amherst.edu/statfest/>), which was held at the Emory University. StatFest is a one day conference aimed at encouraging undergraduate students from historically underrepresented groups to consider careers and graduate studies in the statistical sciences. I also attended the Graduate School and Career Fair at the Mathematical Association of America Southeastern Section Spring Meeting (<http://sections.maa.org/southeastern/2018Conference/>), held at Clemson University on March 23, 2018. We have also made efforts to increase communications between faculty and graduate students. We have included more comments from faculty in the student's annual progress letters, and

students also had an opportunity to share their professional and personal activities with faculty. In order to share research activities happening in our department more efficiently, we resumed our faculty research presentation series in the spring semester, and also held a graduate student poster session at the UGA-Clemson joint seminar. Seventeen of our graduate students presented their research along with five Clemson students. It was great to see lots of exciting on-going research in our program. We are constantly enhancing our graduate program. We recognize the importance of effective communication skills and incorporate that component into our curriculum. We held a writing workshop led by the StatClub, the UGA Writing Center, and Dr. Lazar in the fall semester, and plan to continue that effort in STAT 8920 (Statistical Research and Professional Practice). Also, the adhoc Graduate Program Review Committee recently revised both our MS and PhD programs.

We restructured the curriculum and proposed new courses to keep pace with rapid changes and new challenges happening in the real world. We have also revised our Qualifying Exams. The job placement in Statistics is still going strong and our graduate students have been consistently successful in finding jobs in various places, including Statistician/Data Analyst at Liberty Mutual, Johnson & Johnson, and State Farm; faculty at the University of Arizona, Southern Methodist University, and Indiana University; postdoc at Harvard University; and lecturer at the University of Virginia. If you have any ideas or suggestions to revamp our graduate program, please don't hesitate to contact me. I also would like to thank those who have responded to our MS and PhD alumni survey. Your responses will greatly support our efforts to improve the graduate program. I look forward to another great year and wish all of you well!

UGA STATISTICS STUDENTS JOIN ASA TRAVELING COURSE AT GEORGIA TECH

Derek Dyal /Statistics MS Student

One early Saturday morning, a group of UGA Statistics students, including myself, attended the ASA Council of Chapters Traveling Course at Georgia Tech. We travelled to Atlanta in search of answers. Many of us had assembled data for a project or problem we were attempting to solve, but within our respective datasets, we shared a mutual concern: How do we handle missing or incomplete values in the data? The course was appropriately titled "An Introduction to the Analysis of Incomplete Data" by Dr. Ofer Harel, and, I believe we found what we were looking for.

There were many things we learned while joining the lecture. Dr. Harel emphasized that statistics is not just data analysis. We can analyze anything, but without the correct data, we are not answering our question of interest. In fact, we may be answering a different question altogether. So, data collection matters, and we need to be careful on how we define our study. Without accounting for missing data, our conclusions may be completely invalid. Missing data is a common issue. There are many ways to deal with missing data but we must, at least, acknowledge the issue

and put some thought into it.

The subject was fascinating to us because of its applicability to our own work in the past and what we intend to pursue in the future. At first, we didn't know what we didn't know (Because it was missing...), but after attending Dr. Harel's lecture, I am confident that what we learned will add depth to our analyses and understanding of statistics. I do believe that knowledge in this area would undeniably benefit many of us doing projects/research.

Overall, the trip was a great experience for us to meet other students, research professionals, and professors at different universities. During our breaks, we got to share ideas and build relationships with people in the field. Many of the attendees possessed diverse backgrounds in their education and research interests, and, they had some very cool stories!

So, the lecture was a wonderful opportunity for us to add to our knowledge and expand our statistical tool belt. Most importantly, the food in Atlanta was awesome!



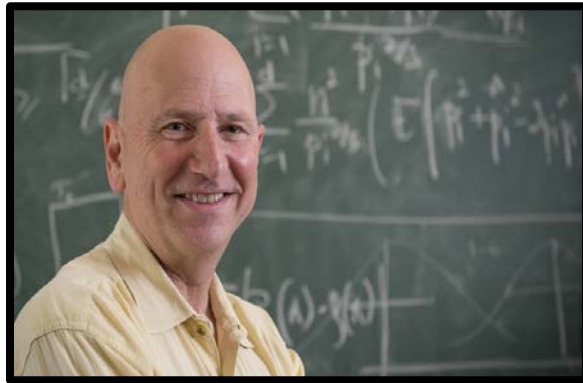
UPDATE: *Colloquium Series*

Abhyuday Mandal, Associate Professor | Pengsheng Ji, Assistant Professor
Ray Bai, Assistant Professor

The Fall 2017 Colloquium series featured an array of inspiring and distinguished speakers from academia and industry. A total of 15 speakers presented talks on a variety of both theoretical and applied topics in areas that utilize statistics and Faculty and students were able to interact with the speakers more informally as well.

The regular colloquium series in the Spring 2018 semester was shortened due to an interview period, but we were compensated with engaging talks from the job candidates that reflected the fast growing nature of the university-wide statistics community.

As part of the colloquium series, we hosted several events this year, including the UGA-Clemson joint seminar series with guest speaker Dr. Daniel Apley from Northwestern University. His presentation topic was "Understanding the Effects of Predictor Variables in Black Box Supervised Learning Models". Students from both UGA and Clemson participated in a poster presentation during this event. We also hosted the Noggins event, where Dr. Timothy Johnson from the University of Michigan presented two lectures on "A time-varying AR, bivariate DLM of functional near- Modeling of fMRI Data



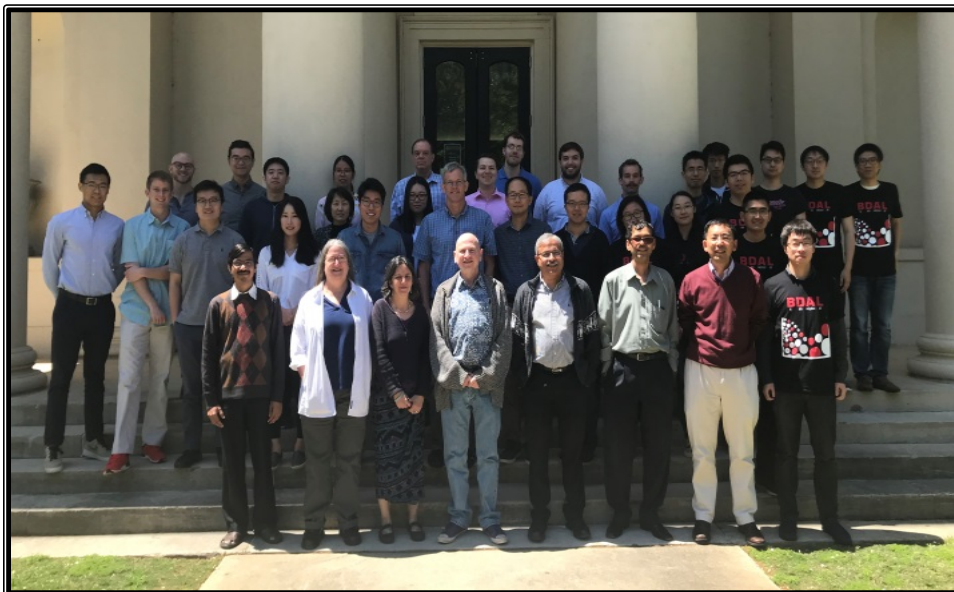
Bradley Lecture Speaker, Dr. Larry Wasserman

for Pre-Surgical Planning". Lastly, the Bradley Event and Dinner was held at the Special Collections Library, featuring Dr. Larry Wasserman from Carnegie Mellon University. Dr. Wasserman spoke on "Local Minimax Testing" and gave an after dinner talk on "Should Statistics Be More Like Computer Science?" Afterwards, guests convened to enjoy an evening of fun, food, and fellowship followed by a picnic at Sandy Creek Nature Center the next day.

We encourage you to visit the colloquium website for the most up-to-date information on upcoming speakers, presentation abstracts and links to guest speakers' websites. Our colloquium series enhances the educational experience of our students, provides research opportunities for our faculty, and enriches the academic environment of the department. If you would like to support this endeavor, please click the link below.

[Colloquium Series Website
www.stat.uga.edu/events/colloquia/upcoming](http://www.stat.uga.edu/events/colloquia/upcoming)

[Support the Department
www.stat.uga.edu/giving](http://www.stat.uga.edu/giving)



Bradley Speaker, Dr. Larry Wasserman, with Statistics faculty and students

COLLOQUIUM SPEAKERS 2017-2018

FALL 2017

Sudipto Banerjee
University of California, Los Angeles

Anuj Srivastava
Florida State University

Hao Zhang
Purdue University

Xinwei Deng
Virginia Tech

T.N. Sriram
The University of Georgia

Alan Gelfand
Duke University

Piotr Kokoszka
Colorado State University

Yong Zeng
National Science Foundation, University of
Missouri- Kansas City

David Jones
SAMSI

Shane Reese
BYU

Liang Peng
Georgia State University

George Michailidis
University of Florida

Kary Myers
Los Alamos National Lab

Scott Holan
University of Missouri

Haonan Wang
Colorado State University

SPRING 2018

Ting Zhang
Boston University

Hendrik Hamann
IBM

Daniel Apley
Northwestern University

William Myers
The Proctor and Gamble Company

Timothy Johnson
University of Michigan

Larry Wasserman
Carnegie Mellon University



STAT CLUB UPDATE

Kristen Knight | STAT Club President

The year 2017-2018 was full of exciting social and academic events organized by the Statistics Club! The fun started off by a cook-out and potluck held the first week of school at the Family and Graduate Housing picnic shelter. New this year was a mentorship program where first-year Masters and PhD students were linked up with current graduate students. The mentors met with the new students and offered advice on graduate school and life in Athens. Also new this year, the first Friday of every month undergraduate and graduate students alike were invited to get together for a Social Hour, held at various locations in downtown Athens.

In October, Georgia Statistics Day took place at Emory University and required three vans to transport our students who attended the event! Undoubtedly, we learned a lot from the many interesting research talks and posters presented. In November, Dr. Kary Myers from Los Alamos National Lab was the speaker for Industry Day. The semester came to a close in December with the International Potluck, which drew a small crowd from our diverse department; the Indian,

Korean, Chinese, Brazilian and traditional American dishes were delectable!

In the spring, our monthly Social Hours continued. The department was honored to have two guest speakers for two more Industry Days: Dr. Bill Myers from Proctor & Gamble and Dr. Hendrick Hamann from IBM. The UGA/Clemson seminar was also hosted here in Athens this year with speaker Dr. Daniel Apley. Finally, the Bradley Lecture brought us Dr. Larry Wasserman from Carnegie Mellon, who delivered a dynamic talk and after-dinner talk about the shifts and advances in modern-day Statistics. The Bradley Picnic was held at the beautiful Sandy Creek Park and all attendees enjoyed a fabulous assortment of grilled food and side dishes.

Many thanks to the leadership: PhD student Arunava Samaddar as the Vice President, and undergraduates Soyeon Youk as the Treasurer, Rachel Zilinskas as the Secretary, and Coordinating Team Members Elliot Terris and Shuchi Goyal. Best of luck to all those graduating this year. We wish you the best!

CONSULTING CENTER UPDATE

XianYan Chen | Associate Director

Under the leadership of Director Dr. Jaxx Reeves and Associate Director Dr. Xianyan Chen, the SCC continues to run very well. It has continued its tradition of training graduate students to be effective consultants, while adapting operational procedures to better manage consultants and projects, yet simultaneously providing excellent services to our clients on and off campus. We moved to our new office (339 Brooks Hall) at the beginning of this year. The main consulting office is about twice as large as our previous office, and has an adjoining room with office space for the supported Consulting Assistants. With this better facility, the SCC hopes to begin offering some walk-in consulting and remote consulting in addition to the more formally scheduled consultation sessions that we now provide.

During the 2017-18 Academic Year, the SCC has provided consulting assistantships for five graduate students from the Department of Statistics: Wenhao Pan, Xiaodong Jiang, Yan Du, Huimin Hu, and Rich Ross. These paid consultants, along with about 20 volunteer consultants, have made strong contributions to research efforts at UGA and beyond. Support for the SCC continues to be provided by the Franklin College of Arts and Sciences, the Office of the Vice President for Research, and the UGA Graduate School, in addition to the income earned through SCC projects. The SCC's collaborative relationships across the University remain strong. The SCC has continued to maintain a strong

client base from the Franklin College of Arts and Sciences, the College of Agriculture and Environmental Science, the College of Family and Consumer Sciences, the College of Veterinary Medicine, the College of Pharmacy, the College of Education, and the College of Business all provide several interesting projects during the current year. Our primary corporate client, Unclaimed Property Consulting and Reporting, remains the largest commercial client, providing us with eight projects this academic year. We hope to develop more strong corporate relationships so as to be better equipped to handle the financial exigencies which seem to occur fairly regularly with academic budgets.

The Director has been an active participant in bi-weekly conference calls with similar staff at eleven other land-grant institutions (Penn State, Texas A&M, Purdue, NC State, Nebraska, UCLA, Colorado, Colorado State, Montana State, Kansas State, and Washington State) which have statistical consulting/collaboration centers. These conversations have proven quite useful in allowing UGA's SCC to learn what others are doing and to help us be at the forefront of academic statistical consulting centers.

The SCC hopes to continue to develop ways to meet the three areas of its mission, including making statistical support available to UGA researchers, increasing the quality of quantitative research at the University, and providing valuable educational experience and training to graduate students in the Department of Statistics.



Statistical Consultants at work in new SCC Office

NEW EXTERNALLY FUNDED GRANT PROJECTS IN THE DEPARTMENT OF STATISTICS

Ping Ma, Professor, PI

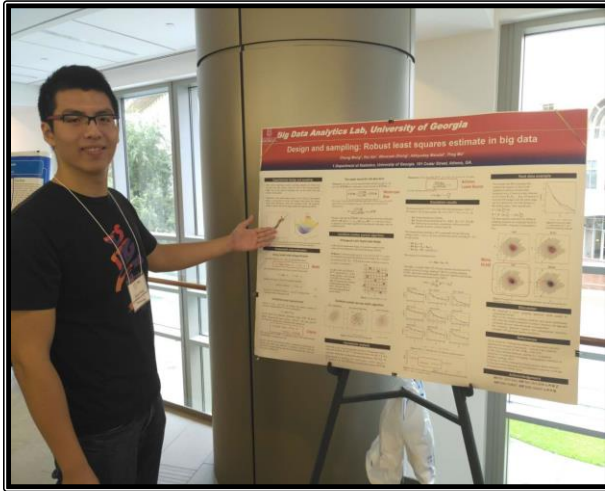
The President's Interdisciplinary Seed Grant Award

Twelve faculty teams at the University of Georgia have been selected to receive research awards through the President's Interdisciplinary Seed

Grant Program. More than 150 faculty teams submitted research proposals to this competitive program. Professor Ping Ma in the Department of Statistics

and his Big Data Analytics Lab were among the chosen twelve to receive this grant for their proposal "Using

robotic systems to accelerate the application of genome information in the improvement of food crops".



Statistics student, Cheng Meng, presents at GA Statistics Day



Statistics Professors Park, Sriram, Mandal, Hall, and Zhong



Dr. Dipankar Bandyopadhyay, Dr. Somnath Datta, Dr. Abhyuday Mandal



Big Data Analytics Lab Retreat



Dr. Zhong at GSMST



GSMST Group Photo

Industry Day Fall 2017 Kary Myers by Nick Toebben

Dr. Kary Myers, scientist at Los Alamos National Laboratory (LANL) in Los Alamos, New Mexico, was kind enough to join the UGA Statistics Department for its Industry Day in Fall 2017. Serving as a member of the Statistical Sciences group and as the director for the Information Science and Technology Institute at LANL, Dr. Myers was able to enlighten attendees of her lunchtime presentation on opportunities the lab presented both for careers and continuing education.

Dr. Myers was able to expound upon the multiple locations of government-sponsored national labs across the United States, with the closest to Athens being the Oak Ridge National Lab in Tennessee, and the type of work they do and topics they research in her particular compound in Los Alamos. Although the national labs

were originally founded for research into development of nuclear weapons, unsurprisingly, many of the labs have branched out towards less destructive points of study. The Los Alamos lab continues some research into weapons, but Dr. Myers pointed out that she has colleagues working on research topics including astronomical spectroscopy, energy efficiency, and disaster protocols. The astronomical spectroscopy application presented a unique challenge in big data analysis; the Very Large (Satellite) Array from which the data is taken collects data so quickly and in such massive quantities that it is more expedient to transport hard-drives by the truckload than rely on Ethernet to digitally transport the information! In fact, the national labs system has a history of groundbreaking research in non-weapons applications, including, for example, the development of Latin Hypercube designs. In addition to the

careers available at LANL, Dr. Myers also elaborated on some educational opportunities. As deputy director of the Information Science and Technology Institute, she is responsible for offering specialized courses in data analysis and computing technology that range from more traditional classroom-based approaches to extremely hands-on applications (i.e. literally constructing a computer mainframe/server system). These programs, offered over the summer in Los Alamos, are free of charge and available to graduate and undergraduate students from a variety of fields including statistics. Information on the programs and applications can be found at isti.lanl.gov.

Before wrapping up, Dr. Myers introduced us to her Conference on Data Analysis (CoDA), which she heads and encouraged us to attend. In her words, “the best part about running a

conference is that you get to schedule a bunch of talks that interest you,” and the slate of presentations does appear both varied and interesting; refer to cnls.lanl.gov/coda for more details on the early-March conference.

Finally, Dr. Myers was willing to answer a few student questions before breaking out for small group sessions. Of particular note, she mentioned that employment at LANL and other national labs is not restricted to native-born Americans; although different projects have different security requirements for which citizenship would help. Dr. Myers emphasized that there are many non-US citizens employed at her particular lab with room for many more. She implied that a Ph.D. in statistics would improve one’s chances much better than a U.S. passport.

Industry Day Spring 2018 Bill Myers Richard Ross

On April 5th, Dr. Bill Myers visited the department for the annual Industry Day Speaker Program. Dr. Myers serves as a Principal Statistician for Proctor and Gamble. He gave a lunch presentation discussing the history of Proctor and Gamble and how statisticians fit into the organizational breakdown of P&G. Dr. Myers also described the growing field of statistics outside of academia, skills needed to succeed in industry, and growing applications of statistical methods in product research. Students were highly engaged by his talk and afterwards had many questions including seeking advice for how to

best prepare themselves to be attractive candidates for industry jobs. Later in the afternoon, Dr. Myers gave a technical talk concerning the implementation of computer experiments as a cost-effective alternative to physical experiments. His talk focused on modern methods using simulations to answer research questions compared to traditional design of experiments methodologies. Dr. Mandal and Dr. Xiao also provided some comments about this progressive area of statistics.

Industry Day Spring 2018 Hendrik Hamann Benjamin Washington

Dr. Hendrik Hamann spoke to our department in March of 2018. His talk was somewhat unorthodox from the perspective that Dr. Hamann is not technically a statistician, but rather a distinguished researcher in the Physical Sciences Department at IBM. Although much of Dr. Hamann’s past research dealt with physics and engineering, he is also very interested in the collection and analysis of geospatial-temporal data. During this talk, Dr. Hamann introduced us to a new IBM platform called IBM PAIRS (Physical Analytics Integrated Data Repository

and Services). One extremely useful feature of the PAIRS platform is that users are able to request access to a vast network of climatological and remotely-sensed data over a specific time period at very high resolutions. Dr. Hamann also spoke about IoT (Internet of Things) sensors. These sensors make up a network of devices (appliances, cars, phones, etc.) ,which are constantly collecting data. Dr. Hamann believes a major challenge in the near future will not only be the analysis of IoT data but also its storage.



Faculty and students enjoying lunch with Dr. Bill Myers

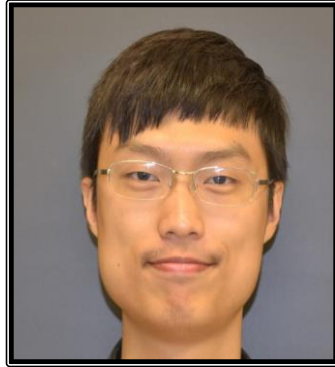


Faculty and students enjoying lunch with Dr. Hendrik Hamann

WELCOME NEW FACES!

Qian Xiao, Assistant Professor

Dr. Qian Xiao comes to us from UCLA where he earned his PhD in Statistics in 2017. Prior to that he earned his BS in Investment Management from Central University of Finance and Economics, China, in 2012. His area of specialty is design and analysis experiments. We are very proud to have Dr. Xiao as part of our department.



Xiaonan Xie, IT Professional Specialist

Xiaonan Xie became the IT Professional Specialist for the Department of Statistics in January 2018 when the department changed locations to Brooks Hall on North Campus. Xiaonan has many years of experience at UGA and we are proud to have him as part of our department.



Nikki Rowden, Administrative Associate

Nikki Rowden joined the Department of Statistics in October 2018 as the Administrative Associate II. She grew up in Oglethorpe County just outside of Athens. She obtained her Bachelor's degree from UGA in Administrative Recreation and later obtained her Master's degree in Elementary Education. Over the last several years she has been a mom to her two children Mason (9) and Emmalyne (6). In her spare time she enjoys playing softball, golf and other outdoor activities.

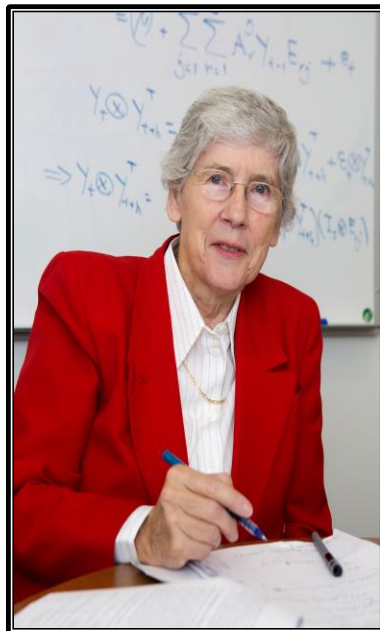


WELCOME
UGA
FACULTY
&
STAFF

Statistics Faculty Lynne Billard Recognized by IBS

As The International Biometric Society (IBS) celebrated its 70th anniversary on September 6, 2017, the story of its conception could be found scribed by the Statistic Department's own Professor Lynne Billard in a published piece describing the beginnings of the IBS.

Founded in September of 1947 at the Marine Biological Laboratory in Woods Hole, Massachusetts, the Biometric Society began to slowly take shape over that year to continue its growth to this day. Dr. Billard chronicled these communications that facilitated this growth during that time in the celebrated article, "The World of Biometry" which was published in *Biometrics* in 1994. Her piece is a valued part of the history of how the IBS came to celebrate its 70th year.



Congratulations Jennifer Kaplan

Dr. Jennifer Kaplan, Associate Professor in the Department of Statistics at the University of Georgia was appointed to the position of Editor of Regular Papers for the Statistics Education Research Journal (SERJ) by the Executive Committee of the International Association of Statistics Education (IASE) for a

4 year term beginning January 1, 2018. According to the IASE Committee, Dr. Kaplan was highly recommended for the position, having served as an Associate Editor for SERJ and for the Journal of Statistics Education (JSE) and bringing a solid background in Statistics education research to the position.



CURO

Shuchi Goyal | Student

On April 9, statistics students presented their work at UGA's annual research symposium held by the Center for Undergraduate Research Opportunities (CURO). Among the students featured were seniors Rhiannon Euhus, Shuchi Goyal, and Rachel Zilinskas who have worked on separate research projects for the past year under the guidance of different professors.

Rhiannon completed two projects, one in the Department of Health Promotion and Behavior related to the study habits of college students, and another in the Department of Sociology regarding healthcare access for incarcerated women. Shuchi carried out her research investigating robust hierarchical

Bayes models for use in small area estimation under the guidance of statistics professors Dr. Gauri Datta and Dr. Abhyuday Mandal. Rachel also worked with Dr. Mandal, as well as Dr. Suraj Sharma in the Department of Textiles and Merchandising, to research the efficacy of a new dyeing technique designed to reduce

water pollution.

Students had the opportunity to present their work at the CURO symposium through either a poster display or a lecture. Rhiannon was also recognized by the UGA Libraries' as a runner-up for their Undergraduate Research Award.



2018 Best Capstone Student Award Winners:

Ryan McCollough and Rachel Zilinskas

Nicole Lazar and Lynne Seymour | Directors

The Statistical Capstone course is taken by graduating seniors and focuses on practical data analysis skills as well as written and oral communication.

Student teams work on data analysis projects with clients from UGA and beyond. There were 15 projects this year, such as Franklin advising office surveys, citizen science with a "marine debris tracker" app, study of vineyards in the Southeast, working with local charities (United Way, Animal Shelters). There were 45 students (largest Capstone class ever) divided into project teams of three students. The teams

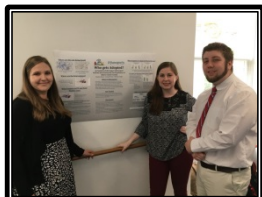
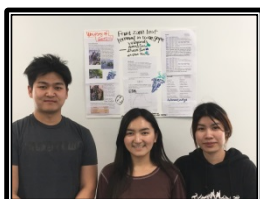
started working on their projects in October. They started with exploratory analysis in the fall and then developed a full analysis in the spring working with the client, professors, and TAs. The spring semester culminated with a poster session, group oral presentations, and a written report from each group.

Each year, a student from the course is selected for the Kermit Hutcheson Best Capstone Student Award. This award, which includes a \$500 prize, comes from a non-endowed account funded by Professor

Emeritus Kermit Hutcheson.

The award is given to the student who best exemplifies the Capstone guiding principles of rigorous analysis that focuses on the big picture, clear written and oral communication, and professionalism.

This year's winners were Ryan McCollough and Rachel Zilinskas. Rachel will join the PhD program in Biostatistics at the University of Minnesota. Both of these students did a fantastic job and we wish them well in their careers after UGA.



STUDENT AWARDS

Elizabeth Giesecking
Best Master's Student

JC Poythress
Best Beginning PhD Student

Xin Xing
Best Senior Student

Yan Du
Best Consultant Assistant

Mengyao Li
Best Volunteer Consulting Assistant

Natalia Costa Araujo, Kristen Knight, Ye Wang, Benjamin Washington
2018 Outstanding Graduate Teaching Assistant

Marissa Angle, Jessica Cooper, Rhiannon Euhus, Shuchi Goyal, Jonathan Hayne, Ximeng He, Phillip Jones, John MacNeil, Bradley Sabin, Katie Sanders, Taylor Smith, Alyson Wright, Sara Yarbrough, Rachel Zilinskas
2018 Graduate Mu Sigma Rho Inductees

Chen Chen, Elizabeth Giesecking, Ziyang Ma, Hyunnam Ryu, Eunsil Seok, Yanyan Tan, Rui Xie, Mengyun Yu, Jiankun Zhu, Wanxue Zou
2018 Graduate Mu Sigma Rho Inductees

Ryan McCullough and Rachel Zilinskas
2018 Best Capstone Student Award

Rui Xie
GA Statistics Day Student Poster 2nd prize

Cheng Meng and Chul Moon
GA Statistics Day Student Posters Runners Up

Xiaoxiao Sun
ASA Statistical Computing and Statistical Graphics Student Award

Xinlian Zhang
Dissertation Completion Award

Di Xiao
Graduate School Research Assistantship

Cody Pace
Georgia Impact Now Master's Fellowship

Xiaoxiao Sun
ASA Statistical Computing and Statistical Graphics Student Paper Competition

Xinlian Zhang
ASA Bayesian Statistical Science Student Paper Competition

Jeremy Mulcahey: University of Georgia's Department of Statistics MAGNet Alumni

The Modeling and Analytics Graduate Network (MAGNet) internship program is approaching the conclusion of its 4th academic year at the University of Georgia. State Farm's partnership with UGA was launched due to the need to hire and train employees with exceptional data and analytics related mindsets for full-time employment at the Atlanta hub. State Farm's search landed the MAGNet program about 60 miles east of the new hub - at the largest and most established university in the state, but UGA's reputation alone was not enough to ensure the MAGNet expansion would thrive, as its parent program had at the University of Illinois at Urbana Champaign's Research Park. One of the key elements that made UGA stand out among the competition was the Statistics Department's commitment to maintaining a two year M.S. curriculum, in a climate where one year graduate programs in analytics were growing in popularity and number (and still are). The two year program emphasizes the Statistics Department's focus on instilling students with the theory and application-based education desired by established research and analytics organizations.

As a graduate of the Statistics Department's M.S. program and the

MAGNet program, I am familiar with how a rigorous theory-driven degree curriculum complements the complexity of applied statistics in industry. The challenging nature of both programs, thoroughly prepares students to be productive professionals on their first day of full-time employment. The applied experience is obviously an essential component for producing capable employees; however, analysts have differing views on the importance of understanding algorithms used by statisticians and data scientists. There seems to be a growing belief among some analysts that algorithms have evolved to the point that an understanding of the theory of these algorithms is no longer necessary. So if an analyst is trained on the use of an algorithm, and how to accurately interpret its results, what benefit could be gained by taking the time to fully understand the theory and implementation of it? Instead, consider a series of questions aimed at defining what it means to be trained on the use and interpretation of a method. If maximum likelihood estimation fails to converge, what are the causes and solutions? If a tree based model has high multicollinearity, what happens to the variable importance and how does

that affect variable selection? If a linear model has high multicollinearity, how does that affect the accuracy of the coefficient estimates and model predictions? Is the model still interpretable? Which variable selection techniques are appropriate? What level of multicollinearity is an issue and how does it impact the previous questions? What happens when three approved algorithms for a task each produce different results? Which one do you choose? Are they all correct? Can they be combined? And is there a wrong choice? Is there a way to include non-significant predictors in a model because a client requires it, and is the model impacted? How should one deal with incomplete cases? How does data imputation impact the final results? Can the missing information tell its own story? Which situations benefit more from removing a variable rather than imputing it? That is a small sample of the questions that come up on a regular basis in modeling work. Successfully executing code and running algorithms is the least time consuming component of my job. As a MAGNet leader I need to effectively educate interns, other analysts, and business partners not only on core statistical and machine learning

techniques, but on emerging applications of mathematics and statistics as well. The theoretical knowledge I gained during my time in graduate school equips me to handle the common aforementioned situations around how methods bend and break, to solve increasingly more complex problems, and to evolve with a rapidly changing industry by critically evaluating the mathematics driving the changes. Since partnering with UGA, the MAGNet program has maintained a steady conversion rate for the creative, hardworking, and knowledgeable interns it sought to hire from the Statistics graduate program to positions in Atlanta. State Farm has transitioned at least one student to full-time employment each semester since the first full-term intern graduated in May 2016. As members of the analytics community at State Farm, these UGA alumni apply their skills to solve business problems for a variety of departments in the enterprise including Property & Casualty (P&C) Claims, Marketing, P&C Actuarial, State Farm Bank, P&C Underwriting, Health and Life, and State Farm Digital. Every former UGA MAGNet intern hired for full-time employment is still working at State Farm, making this partnership a true success.

ALUMNI UPDATES

Manoj Rema B.S. | 2011

Manoj Rema is currently serving as First Lieutenant in the United States Airforce, as a healthcare administrator and is currently stationed at Kunsan Air Base in South Korea. Lt. Rema's current job titles are Executive Officer, Medical Readiness Flight Commander, and the Information Systems Flight Commander. At the end of June, Lt. Rema will be headed to Lakenheath RAF, in England.

Randolph Cooper M.S. | Applied Statistics

Randolph Cooper served as District 77 Director from 2016-17 for Toastmasters International. From 2012-13 he was the District 77 Club Growth Director. The District was distinguished. He earned the Distinguished Toastmaster award in 2010, which is the highest educational award. Mr. Cooper is still a systems analyst at Protective Life Corporation in Birmingham, AL where he is still happily married to his wife Melissa.

Muhammad Ali Jaleel M.S. | Applied Statistics

Muhammad Jaleel is serving as the Chairman and CEO for Philips Malaysia and Growing markets of APAC region. Five years with Philips! Prior to Philips he was managing Apple Computers business for Malaysia and South Asia Growing Economies as General Manager. He has also worked for Dell and Microsoft since graduating from UGA.

Sam Hempel B.S. | 2015

Sam is finishing up his third year of the Finance PhD program at Cornell University's Johnson School of Management. In April, he received the Byron Grote Scholarship for outstanding PhD students in the Johnson School, and in June he will begin a one-year term as the Editorial Assistant for the Journal of Financial Intermediation. His research focuses on market microstructure and financial regulation. He graduated from the University of Georgia with a B.S. in Statistics and an A.B./M.A. in Economics.

Katrina Renee Baggett M.S. | 1999

Katrina Baggett is originally from North Carolina. For the sixteen years following her graduation from UGA she lived in Raleigh, NC. In the fall of 2015 she relocated to Rockville, MD for a new job. She is now the Global Product Programmer in Oncology within Biometrics and Information Sciences at AstraZeneca. Prior to her relocation she worked at PRA, Paraxel, Cato research, State Center for Health Statistics and the Wake County Public School System in her home state of North Carolina.

Alumni updates continued on page 11...

ALUMNI UPDATES *(continued)*

Mary Martha Clark

B.S. | 2014

Mary Clark works at Georgia-Pacific as a Strategic Analytics Manager; essentially an internal strategy consultant leveraging light statistics and research. She recently received her MBA from Georgia Tech, where she concentrated in Operations Management.

Hayley Nelson Holtje

B.S. | 2009

Hayley accepted and started a new position at Elsevier (in Philadelphia) as their Customer Analytics Manager after a three and a half year stint at Nutrisystem where she was the Senior Manager of Advanced Analytics.

Alan Hamm

B.S. | 2009

Alan took on the role of principal SAS programmer with Median Technologies.

Bill Chen

Ph.D. | 1978

Bill has a recent publication in applied mathematics titled "On finding geodesic equation of normal distribution and Gaussian curvature. Published on AM, vol. 8 no. 9 2017; ID, 7403704.

Noah Jones

B.S. | 2017

Noah accepted an Underwriting Assistant position at Hiscox's Atlanta office in January on their Technology, Media and Telecommunications team.

Huiling Xiao

M.S. | 2002

Huiling has published 40 more papers so far this year.

Jamal Parker

B.S. | 2010

Jamal started a new job at Microsoft in July of 2017 as a program manager where he works with developers and data scientists to create powerful data features and products within Office 365 that leverage AI and ML. He and his wife, Brittany, welcomed a son, Prosper, in November.

Guo-Jing Weng

M.S. | 2006

Guo-Jing is currently an associate professor at the Institute of Wildlife Conservation, National Pingtung University of Science and Technology in Taiwan.

Jung Ae Lee

PhD | 2013

Jung has been working at the University of Arkansas as an Assistant Professor in Agricultural Statistical Laboratory since 2016 after finishing his post doc for three years at the Washington University School of Medicine during 2013-16.

Cody Walls

B.S. | 2016

Cody has been working as a Data Analyst for State Farm since graduating.

We invite all of our alumni to keep in touch!
Let us know how you are doing by submitting an alumni update form on our website at:

<http://www.stat.uga.edu/alumni-update-form>

MARK YOUR CALENDARS:

We would love to see you soon! Stay tuned for future event information by visiting our website:

www.stat.uga.edu

- DEPARTMENT OF STATISTICS FALL 2018 COLLOQUIUM SERIES
*Begins Thursday, August 23, 2018
Athens, Georgia*
- BRADLEY LECTURE 2019
*Friday, April 26, 2019
Athens, Georgia*



Statistics T-shirts For Sale

Short Sleeve - \$15 Long Sleeve - \$20

Contact Nikki Rowden

nrowden@uga.edu or 706-542-5232

STATISTICS NEWS SPRING 2018

brought to you by

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Tharuvai Sriram

Newsletter Editors

Mollie Hicks & Nikki Rowden

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