LETTER FROM THE DEPARTMENT HEAD

T.N. Sriram | Department Head

Dear Alumni and Friends:

I hope you are doing everything to keep yourself and all around you safe. Together, we are facing a truly unprecedented situation and we have all had to adapt to the new norms—social-distancing, facial masks, zoom meetings, remote learning, and the list goes on. Despite these challenges, students in the Class of 2020 have shown incredible resilience and our faculty and staff have steadfastly remained committed to helping students navigate these uncharted territories. Kudos to faculty, staff, and students! I remain hopeful that our current reality is not permanent.

After an internal Head search, I was appointed as the Head of the Department in July 2018. Since Fall 2018, we have welcomed some exciting new members to our faculty and staff. Justin Strait and Yuan Ke joined us as Assistant Professors in Fall 2018. They are promising young researchers with expertise in statistical shape analysis and statistical machine learning, respectively. At the same time, Maduranga Dassanayake joined as a Lecturer of Statistics and Business Statistics. In Fall 2019, Monsur Chowdhury joined us as a Lecturer to advance the statistical data literacy initiative at UGA, while Nicholas Toebben joined our faculty as an Instructor to reinvigorate STAT 2000, one of our large lecture classes. In Fall 2020, we will be welcoming yet another Assistant Professor, Mohamad Kazem Faradonbeh. who brings his expertise in reinforcement learning to advance our new data science initiative. We were fortunate to add six new faculty members in a span of two years, of which three were recruited through competitive Presidential Hiring Initiatives. In Fall 2018, Kendra Hull joined us as the new Business Manager, and in Summer 2019, Wendy Starnes joined us as the Administrative Associate II. While there were significant additions to our faculty, there were also departures. Jennifer Kaplan, Nicole Lazar, and Megan Lutz left UGA to start a new beginning at Middle Tennessee State University, Pennsylvania State University, and State Farm, respectively. We thank them for all the years of service to the Department of Statistics and the Statistics Education community.

The Statistical Consulting Center (SCC) continues to engage in statistical collaboration activities with faculty, research staff, and students in all departments of the University of Georgia, as well as with individuals from outside academic institutions, non-profit organizations, and commercial clients. In August 2019, Dan Hall was appointed as the new director of the SCC. The Department of Statistics, the Franklin College, the Office of Research, and the Graduate School are immensely thankful and appreciative of Dr. Jaxk Reeves' leadership as the Director of the SCC from 2008 to July 2019. Our undergraduate program continues to thrive. The new

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B.S. in Data Science degree that is jointly managed by the Department of Statistics and Department of Computer Science was launched in Fall 2019 with triple the projected cohort. By Fall 2020, there will be at least 55 Data Science majors. For this new degree, we have created a new introductory statistics course with R, a new statistical theory course, and two new computing courses involving R, Python, SAS, and SQL. To advance the data literacy initiative at UGA, we have also introduced a new lower division course titled Programming and Data Literacy using R, which has had a tremendous response since the first offering in Fall 2019. In 2019, we partnered with Terry College of Business and introduced a new Double Dawgs degree—BS in Statistics and MS in Business Analytics, which provides students an opportunity to complete a BS-MS degree within 5 years. To increase the job opportunities for our Statistics and Data Science majors, we recently collaborated with UGA Career Center and the Office of Development and Alumni Relations and organized a highly successful Computer Science & Data Science Industry Day workshop. This event provided a much-needed, unique networking opportunity for Statistics and Data Science students, among others, to meet with key officials from Chick-fil-A, Home Depot, BlackRock, Mailchimp, and State Farm. In order to ramp up industry connections and collaborations, we will soon be forming an Advisory Council consisting of industry partners to help guide our bachelor's degrees in statistics and data science.

Our Graduate Program draws its purpose and its strength from the quality of students we produce. Job placements of our doctoral students since 2018 has been outstanding. 10 Ph.D. graduates have obtained tenure-track Assistant Professor positions (University of Virginia, University of California - San Diego, Southern Methodist University, University of Arizona (2), University of Central Florida, Tsinghua University, Renmin University, University of New Hampshire, and Shanghai University); three obtained postdoctoral positions at Harvard University, Texas A&M University, and Jackson Laboratory, respectively; one is working as a Statistician at the Environmental Protection Agency; another is a teaching faculty at Temple University; and five others have been hired as data scientists at industries (CoinTribe, Facebook, Liberty Mutual, Sprint, and Wells Fargo)." Please click on *PhD Alumni and Job Placements* for our track record on job placements dating all the way back to 2012.

From June 2019, we devoted considerable time and effort preparing for review of our four degree programs that took place in December 2019 by a panel of four faculty members from UGA. This included drafting a unit overview, a new strategic plan for the department, and preparing a self-study that describes our progress since the previous review in 2012 and a vision for the future. The review team delivered a positive report about our four academic programs in Spring 2020, which will be used by the department and college to map out the strategies needed to keep us among the best programs in statistics.

Our faculty members are not to be outdone with regard to special recognitions, honors, extramural funding, and awards for their contributions to research, teaching, and/or service. Lynne Billard was named the 2020 *Institute of Mathematical Statistics* (IMS) Carver Medalist for her exceptional service to the IMS on a number of key committees; Catherine Case became the new editor of the Statistics Education Web in 2019; Nicole Lazar co-authored an article titled "*Moving to a world beyond "p < 0.05*" that garnered close to 150,000 views and 323 citations since it was published in a 2019 issue of *The American Statistician*; and Abhyuday Mandal received the 2019 *Sandy Beaver Excellence in Teaching Award*. Ping Ma and Wenxuan Zhong continue to generate a lion's share of our extramural funding from the NIH and NSF for their research. Most notably, a recent study on "*NIH&NSF Funding Analysis of Academic Faculty in Statistics Departments in the US*" showed that, for the years 2013 to 2019, their *Big Data Analytics Lab* ranked 3rd in terms of external funding among all NIH&NSF funded labs in the nation. The same study also showed that Wenxuan Zhong and Ping Ma ranked 6th and 9th, respectively, in the nation in terms of external funding among all NIH&NSF funded individuals in the nation. Indeed, these are impressive accomplishments by our faculty!

Graduate Students have also been receiving special recognition and awards. In 2019, Cody Pace received the Best MS Student Award, Hyunnam Ryu clinched the Best Beginning Ph.D. Student Award, Xinlian Zhang won the Best Senior Student Award, Ziyang Ma won the Best Statistical Consulting Assistant (CA) Award and Richard Ross received the Best Volunteer CA Award, Tawanda Benesi, Joseph Powell, Hyunnam Ryu, Eunsil Seok won the UGA Outstanding Teaching Assistant Award, while Jinyang Chen received the 2019 UGA Innovative and Interdisciplinary Research Grant. Most notably, Xiaoxiao Sun was selected to receive the 2019 Excellence in Research by Graduate Students Award in Mathematical and Physical Sciences from the UGA Graduate School.

At the national level, Cheng Meng won a Student Paper Competition on Nonparametric Statistics organized by the American Statistical Association (ASA). In 2020, Bret Stevenson received the Best MS Student Award, Mengyun Yu clinched the Best Beginning Ph.D. Student Award, JC Poythress won the Best Senior Student Award, Juhyung Lee won the Best Statistical Consulting Assistant (CA) Award, and Kristen Knight won the Best Volunteer CA Award. Hongzhi Wang won 2019 Travel Award while Kristen Knight was the winner of the 2020 UGA Innovative and Interdisciplinary Research Grant.

LETTER FROM THE DEPARTMENT HEAD *(continued)*

Our undergraduate majors are also excelling in academics and research, and receiving recognitions. In 2019, Zachary Baker, Evan Knox, and NhuNgoc (Tina) Nguyen won the *Best Student Award*, Mohamad Burjak clinched the *Best Capstone Student Award*, while Sharim Khan and Shivangi Medhekar won the *Best Research Award*. In addition, in 2019, Joseph Resch received the *CURO Summer Fellowship* and 23 students were inducted to the *Mu Signa Rho Honor Society*. Most notably, in 2019, Sarah Robinson from the Class of 2017, was awarded the prestigious *National Science Foundation Graduate Research Fellowship*. Sarah is a third-year Ph.D. student in the Department of Statistics at Rice University. She works with Dr. Christine Peterson at M.D. Anderson Cancer Center to develop methods to model and infer the interactions of microbes in cancer patients over time. In addition, a team of students from the Department of Statistics became finalists for a data analysis competition for undergraduates (*DataFest*), held at Emory University in collaboration with the American Statistical Association. In 2020, Aditya Krishnaswamy and Denali Pray were chosen as co-winners of the *Best Capstone Student Award*. This award is funded by a generous donation from Professor Emeritus Kermit Hutcheson. Jordyn Gulle received the 2020 *Blue Key Honors Society* Membership while Joseph Resch received the *Kohler scholarship* from Rutgers University to pursue a Ph.D. in Statistics. However, Joseph Resch has chosen to join the UCLA Ph.D. program in Statistics. Due to COVID-19, we will be holding our 2020 Statistics Commencement Ceremony on October 16, 2020. During this event, we will present the other Class 2020 student awards.

Our Seminar Series, Georgia Statistics Day, Industry Days, UGA-Clemson Joint Colloquium, and Bradley Lecture Series are vibrant as ever. David Dunson from Duke University delivered the keynote lecture at the 2018 Georgia Statistics Day held at UGA. This keynote lecture was sponsored by *Dr. Mohamed AlLawati Academic Enhancement Fund*. In 2019, Satrajit Roychoudhury from Pfizer gave the Industry Day lecture; Sudipto Banerjee (UCLA) gave the UGA-Clemson Colloquium talk; and the Bradley Lecturer was Art Owen from Stanford University. Susan Murphy from Harvard University delivered the Wells Fargo keynote lecture at the 2019 Georgia Statistics Day held at Georgia Tech. In 2020, Khalifeh Al Jadda from Home Depot presented a talk on data science applications in Home Depot and William Li gave a talk on model-discriminating designs in industries. Due to COVID-19, the 2020 UGA-Clemson Colloquium talk and the Bradley Lecture were not held.

We are extremely grateful to our donors whose generous donations over the years have continued to help support truly excellent students who bring so much energy and enthusiasm to the department. In 2019, generous donations made to the Dr. Mohamed AlLawati Academic Enhancement Fund, Neal Fund, and the Bargmann Fund provided travel funds to 18 graduate students who attended various national research conferences. All the 18 students sent thank you notes to the respective donors. To show our appreciation for the resilience students showed during these unprecedented times and to celebrate their achievements, in Summer 2020, Dr. Al Lawati allowed us to use the Dr. Mohamed AlLawati Academic Enhancement Fund to send a $50 gift check to each of the 41 graduates of the Class of 2020. As the world around us becomes increasingly quantized, we redouble our mission to prepare the next generation. With your help, we are bringing this goal within reach.

On a sad note, Professor Emeritus Kermit Hutcheson passed away peacefully in his sleep on February 2, 2020. He was 90! During his 34 years of service at UGA, Professor Hutcheson was recognized several times as Honors Outstanding Professor. Throughout his tenure, he provided significant statistical research and support for important ecological studies conducted by Dr. Eugene Odum of the Odum School of Ecology at the University of Georgia. Throughout his teaching career, he supported many of his students' ambitions by giving them a place to stay or even helping with financial aid.

Hot off the press! Professor Dipankar Bandyopadhyay, an alumnus of the Department of Statistics, was awarded the prestigious 2020 *Gertrude M. Cox award* from the Washington Statistical Society. The Cox award is presented to someone within 15 years of a terminal degree and contributed significantly to one or many areas of specializations of Dr. Cox, such as biostatistics, survey sampling, experimental designs, and statistical computing. Congratulations, Dipankar!

I thank every member of our department for their valuable contributions to our successes and for their feedback that have helped conceive new efforts to launch our next era of prominence. Thank you so much for your continued interest in what we do. We look forward to updating you on our progress in our next newsletter.

UNDERGRADUATE PROGRAM UPDATE
Anne Vencill | Undergraduate Advisor

What a strange end to the 2019-2020 academic year! Students left for Spring Break and did not return to campus because of the COVID-19 pandemic. Instruction and exams were conducted remotely and commencement postponed.

In the midst of uncertainty, our undergraduate program in statistics continues to flourish and our students are doing great things! In summer 2019, Carmalita Parker was one of a handful of students nationwide selected to participate in the Survey Research Techniques in Diversity Program at the University of Michigan. A number of our students are conducting research with faculty and presenting their results at local and national meetings. There is now a UGA student chapter of the American Statistical Association on campus, started by students from the Department of Statistics and open to all on campus. New courses have been developed and are being taught, including: Programming and Data Literacy in R (STAT 2360/L), electives in Introduction to Quantitative Biology (STAT 4660), Applied Multivariate Analysis and Statistical Learning (STAT 4250), Applied Categorical Data Analysis (STAT 4620), as well as modern and advanced statistical programming courses (STAT 4365 and STAT 4355, respectively) to name just a few. Our number of Statistics and Data Science majors just over 200 with inquiries to the department every week.

In closing, on behalf of the entire Statistics Department, I would like to extend my congratulations to the 44 students who earned their BS Degree in Statistics in May 2020. The Class of 2020 has a special place in my heart, as this is the first group of statistics majors I advised for the entirety of their program. I have gotten to know many of these graduates and have learned a great deal about fortitude, determination, and kindness from them. We wish each graduate all the best in the future and know they are well prepared to make their mark in the field of statistics. We hope many join us on campus on October 16, 2020 to celebrate their achievements.

GRADUATE PROGRAM UPDATE
Liang Liu and Pengsheng Ji |Graduate Coordinators

On behalf of all faculty and staff in the Department of Statistics, we are excited to welcome the new students to our MS and Ph.D. programs. Our graduate programs are becoming increasingly attractive in the past few years and we received about 250 applications for 2020. We have continued to make our best effort to recruit well-prepared and motivated students. The former graduate coordinator Dr. Park visited the College of William and Mary in Virginia in October 2018. During his visit, Dr. Park gave a presentation about UGA and the Statistics graduate program, and had individual meetings with faculty members and students. Dr. Park also attended the Graduate School and Career Fair at the Mathematical Association of America Southeastern Section Spring Meeting, held at Lee University in Tennessee in March 2019. Dr. Seymour attended the Graduate School Information at MathFest, held at Troy University in Alabama in April 2019. Moreover, to attract the best students, the current graduate coordinator Dr. Ji traveled to a few places including the College of William and Mary, the George Washington University (DC) and Wofford College (SC) in the fall of 2019. To attract the best students from the southeast region and especially the underrepresented groups, Dr. Ji reached more than 50 institutions with mathematics or statistics programs including some historically black colleges, and invited their students to attend the webinars about our programs.

The graduate students in Statistics have been very productive for the past two years. They consistently showed a strong record of publications in a wide range of scientific fields, and because of their important works they were invited to present at international conferences and workshops. The recent graduate Dr. Cheng Meng received the 2019 P&G ASA poster competition award. A total of 12 graduate students received the graduate school travel award for two academic years 2018-2019 and 2019-2020. Our graduate students also won the very competitive IIRG (Innovative and Interdisciplinary Research Grant) for two consecutive years; Shushan Wu was the winner of the 2019 IIRG and Kristen Knight was the winner of the 2020 IIRG.

Our graduate students have been consistently competitive in the job market. The 2019 graduates successfully landed 3 academic jobs (Faculty positions) and many industry jobs (Facebook, Coin Tribe, etc.). Although the US job market has been badly hurt from coronavirus layoffs, our recent graduates have been successful in finding jobs in various places, including Statistician/Data Analyst at LexisNexis and Midland Credit Management, and faculty positions at the University of New Hampshire, Tsinghua University and Renmin University of China.

UPDATE: *Colloquium Series*

Abhyuday Mandal, Associate Professor | Justin Strait, Assistant Professor | Yuan Ke, Assistant Professor

During the 2019-20 academic year, the Department of Statistics continued its annual colloquium series with a variety of interesting talks given by regarded speakers in both academia and industry. In the fall, ten speakers were invited, with an emphasis on junior and local faculty with collaborative interests. Talks were given on important statistical research areas such as Bayesian inference, graphical models, experimental design, and causal inference, with applications in biostatistics, climate modeling, brain imaging, and genomic data. Of particular note was a talk by Dr. Marina Vannucci (Rice) discussing spike-and-slab priors applied to sparse graphical modeling, as well as one by Dr. Kai Zhang (UNC Chapel Hill) focusing on a powerful nonparametric test for independence. Both students and faculty were able to interact with these speakers through one-on-one meetings, meals, and post-colloquium refreshments in Brooks Hall.

The spring semester yielded an unprecedented challenge for the department with the advent of the coronavirus pandemic. The original plan was for nine speakers to be invited in total (including the department's distinguished colloquiums) after a month of job talks for open faculty positions. After commencing the spring talks in February, three talks went on as planned, discussing research in big data, neural networks, and causal inference applied to observational data from political science. Unfortunately, with the growing threat of the pandemic within the United States, some speakers expressed concern or postponed their talks, and ultimately, the university announced the suspension of in-person activities for the semester over spring break. This included the postponing of three distinguished lectures: UGA was slated to host Dr. Jeffrey Rosenthal (University of Toronto) for the annual UGA-Clemson Colloquium, Dr. Bin Yu (UC Berkeley) for the annual Bradley Lecture, and Dr. Jianqing Fan (Princeton) for a newly initiated data science colloquium series. We plan to reach out to these prominent statisticians for future visiting possibilities.

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	Support the Department
www.stat.uga.edu/events/colloquia/upcoming	www.stat.uga.edu/giving

New Data Science Major

In Fall 2019, UGA's Departments of Statistics and Computer Science in the Franklin College of Arts and Sciences introduced a new Bachelor of Science degree in Data Science (DSCI). Faculty members in computer science and statistics spent more than two years envisioning, planning, and designing this new degree. There has been a phenomenal response from students for this new degree. At the end of Fall 2019, there were 28 DSCI majors, which was 3 times the initial projection. With new additions, the total number of enrolled DSCI majors for Fall 2020 will be about .

The Bachelor of Science degree in data science will teach students how to use their knowledge of statistical and computing principles to analyze and solve real-world data analysis problems. Our Data Science curriculum is best described by the Venn Diagram to the right. The major is suitable for students interested in careers in industry or in pursuing more specialized graduate study. Please visit UGA Data Science Major for details.

FALL 2019

Whitney Huang
Clemson University

Deborah Kunkel
Clemson University

David Benkeser
Emory University

Luo Xiao
North Carolina State University

Marina Vannucci
Rice University

William Li
Shanghai Jiao Tong University

Kai Zhang
UNC Chapel Hill

Yingying Fan
University of Southern California

Ya Su
University of Kentucky

Zhengwu Zhang
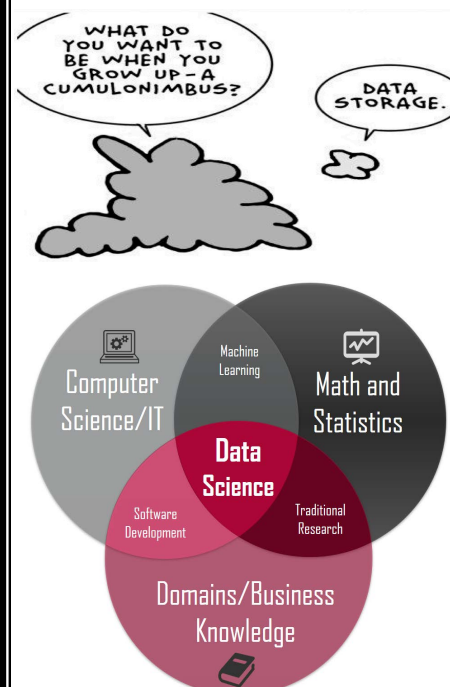University of Rochester Medical Center

Spring 2020

Jason Anastasopoulos
University of Georgia

Khalifeh Al Jadda
The Home Depot

Lin Wang
Georgia Washington University

Wenjing Liao
Georgia Institute of Technology

STAT CLUB UPDATE

Subham Das and Joe Powell | Co-Presidents

The 2019-2020 year started out right where the 2018-2019 year left off! Starting with the New Graduate Student Social Hour during the summer bootcamp course, we held monthly social hours at various locations in downtown Athens. A large group of students attended 2019 Georgia Statistics Day at Georgia Tech. The all-day event featured several first-rate speakers and a wonderful student poster session. To wrap up the semester, Stat Club hosted the annual International Potluck which continued to grow in attendance. The vast diversity in cuisine is always a treat!

In February, we hosted Dr. Khalifeh Al Jadda from the Home Depot Data Science Team at our department Industry Day. Dr. Al Jadda, a UGA alumnus, met with the students and faculty during lunch and also had one-on-one interactions with students regarding the rise of Data Science and the demand from the industry to learn specific skills like cloud-based database management, multiple programming languages, etc. His talk mainly focused on recommendation systems used for the e-commerce business of Home Depot. The main goal of this system is to recommend a proper collection of products to customers according to their search and viewing choices.

As with many universities, UGA's spring semester came to an early close in March due to the COVID-19 outbreak. As such, our typical spring semester events were canceled, including the UGA-Clemson Joint Seminar, the Bradley Lecture, and the Bradley Picnic. Additionally, the selection of Stat Club leadership for the 2020-2021 year has been postponed to the beginning of fall semester. Finally, as graduation was also postponed, we'd like to send best wishes to this year's graduates!

We have enjoyed serving the Stat Club members and the department as a whole over the past year! We look forward to seeing the Stat Club continue to flourish!

CONSULTING CENTER UPDATE

Dan Hall, Director | Xianyan Chen, Associate Director

Academic year 2019-20 was a year of transitions, new initiatives, successes, and challenges for the Statistical Consulting Center (SCC).

In August, 2019, Dan Hall assumed the role of Director of the SCC, taking over from Dr. Jaxk Reeves, who had served in that position for many years. Dr. Reeves continues his relationship with the SCC as a Faculty Associate and, through his experience, relationships with clients, and selfless hard work, was a key contributor in 2019-20. As Associate Director, Dr. Xianyan Chen continues to manage day-to-day operations with a steady and able hand. This year we were fortunate to have an outstanding group of Consulting Assistants: Yan Du, Huimin Hu, Juhyung Lee, Ziyang Ma, and Weifeng Wang, all of whom are Ph.D. students in the Department of Statistics. In addition, over a dozen students volunteered their time working for the SCC during the past year.

Most of you must know John Tukey's famous quote about statisticians getting to play in other people's backyards. Well at the SCC, we play in a lot of really fun and interesting backyards! This year we worked on projects related to property appraisals, bee biodiversity, biomarkers for gastric cancer, perceptions of race and gender identity in advertising, effects of rearing conditions on poultry health, racial disparities in bar passage rates, blood clotting in flamingoes, policing strategies, pesticide application in blueberries, and on and on. Statistical consulting can be challenging, but it is never boring.

This year we launched the SCC Seminar Series on Data Analysis. These non-technical talks are aimed at a mixed audience of non-statisticians who wish to better understand and use statistical methodology, as well as statisticians, students of statistics, and other flavors of data scientist who are interested in statistical applications. This year's talks included presentations on linear mixed models, R graphics, Stata, SQL, and Python. Look for more talks on useful, interesting topics in 2020-21 as well as other initiatives through which the SCC will expand its role as a resource for statistical information and training.

In other SCC news, Juhyung Lee received the Best Consulting Assistant Award and Kristen Knight was recognized as the Best Volunteer Consulting Assistant in 2019-20. Congratulations to these outstanding students and to our entire staff for a great year.

The COVID-19 pandemic affected everyone in 2020 and the SCC is no exception. Starting in mid-March, 2020 we discontinued walk-in hours and the SCC Seminar Series, switched all communications to e-mail and video-conference, and began to work from home. Although these changes had little impact on our ability to serve clients effectively, research at the university slowed dramatically and new projects at the SCC dwindled to a trickle. Fortunately, the university and broader society are rebounding now and business at the SCC picked up dramatically in May. Here's hoping that the trajectory that we are on currently continues and that we all return to normalcy in our personal and professional lives soon!

The SCC would really like to connect with alumni and friends of the Department of Statistics. We strongly encourage you to join our mailing list to find out about our Seminar Series and to keep abreast of other news. To do so, visit our SCC webpage and click on this link. Also take time to read about who we are and what we do. And please drop us a line at consult@stat.uga.edu or e-mail Dan (danhall@uga.edu) or Xianyan (xychen@uga.edu). We'd love to hear from you whether you'd like to support the SCC, use our services as a client, or if you'd just like to tell us your news since moving on from UGA.

Big Data Analytics Lab
Dr. Ping Ma, Professor | Dr. Wenxuan Zhong, Professor

The Big Data Analytics Lab (BDAL) at the University of Georgia (UGA) focuses on interdisciplinary research that aims to develop statistical methodology and theory to resolve grand challenges of big data analytics. Over the past few years, Dr. Ping Ma and Dr. Wenxuan Zhong have established diverse research programs to address computational and theoretical challenges in big data analysis with extramural funding from the NSF and NIH, totaling over 3 million dollars, Under their direction, the lab members have developed many cutting-edge statistical methodologies and successfully applied the methods in modern genomic, epigenetic, metagenomics, text-mining, chemical sensing and brain imaging and machine learning research.

Publications:

❖ In Academic Year (AY) 2018-2020, Big data analytics lab published more than 10 papers in peer-reviewed journals and conferences, including Biometrika, NeurIPS, Plant Science, AISTATS, among   others.

❖ In 2018-2019, Big data analytics lab published more than 10 papers and book chapters in peer-reviewed journals, conferences and books, including Biometrika, *PLOSONE*, Plant Science, Biological Trace Element Research, Springer, InTechOpen, among others.

Outreach and Education:

Education is a key component of the BDAL. In addition to graduate and undergraduate training, we have put significant focus on high school classroom integration.

❖ We have always taken it as one of our priorities to participate in outreach programs targeting students from under-represented groups. For example, our lab members served as volunteer speakers in a lecture series for encouraging high school students, especially women and minority students, to STEM careers hosted by Lambert High School in Forsyth County, Georgia and the Gwinnett School of Mathematics, Science, and Technology in Lawrenceville, Georgia. The lecture series is an excellent and well recognized quarter-annual scientific event that brings together researchers in the higher education community and local high school students, and the events were greatly welcomed by the high-school students and teachers. (AY 2018-19)

❖ Prof. Wenxuan Zhong visited the Fred Hutchinson Cancer Research Center. (AY 2018-19)

Lab Honors:

The proposal, *Leveraging Conversational AI to Grow Audience, Deepen Engagement, and Shape Content Strategy*, has been awarded the Innovation Challenge finalists by PILOT, NAB's technology innovation initiative. PILOT is a coalition of innovators, educators and advocates dedicated to advancing broadcast technology and cultivating new media opportunities. PILOT propels broadcast television and radio into the future. It provides a platform for innovation, an engine for incubation, a venue for testing new technologies, and a forum for broadcaster education. (AY 2019-20)

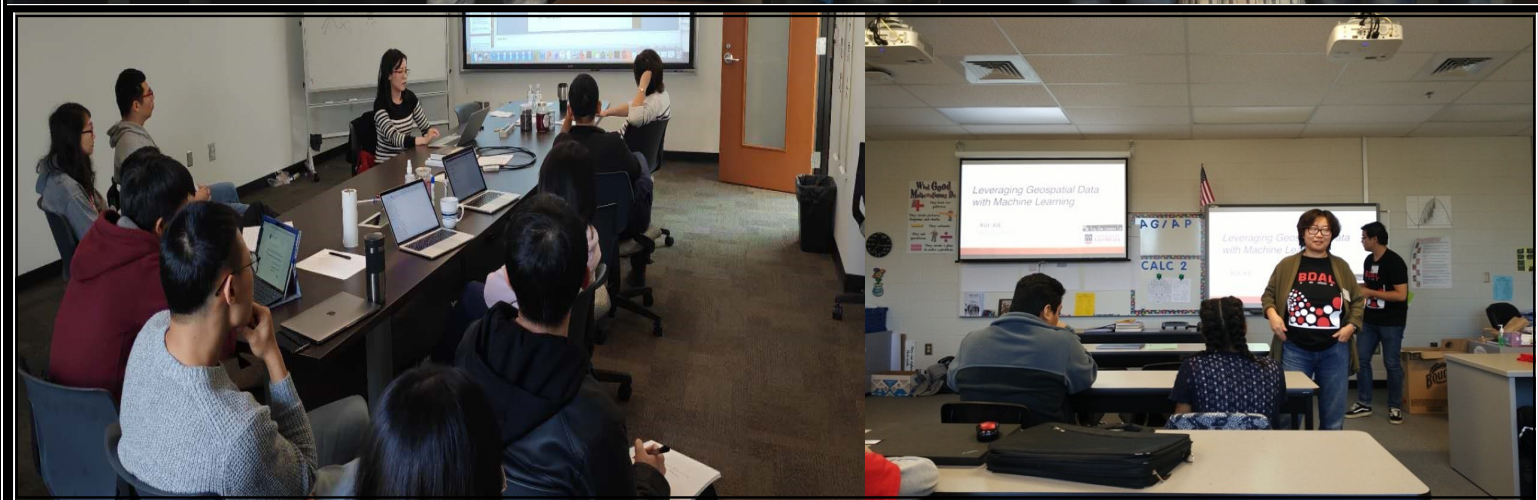*Presentation at Lambert High School*

Invited Speakers:

❖ Dr. Xiang Li and Dr. Hui Ren, from Harvard University, gave the lab a presentation "*Personalized Healthcare for Heart Failure with Preserved Ejection Fraction (HFpEF): Diagnosis, Phenotyping and Treatment Optimization with Imaging and EHR Data*" on 12/07/2019.

❖ Dr. Fangyu Li from the Sensorweb Research Laboratory visited the Big Data Analytics Lab in AY 2018-19

❖ Dr. Shangpeng Sun from the Bio-Sensing and Instrumentation Lab visited the Big Data Analytics Lab in AY 2018-19

❖ Professor Pengyuan Wang from the Department of Marketing visited the Big Data | Analytics Lab in AY 2018-19

New Grants:

❖ National Science Foundation DMS 1925066 to PI Ping Ma for $415,928.00, from 08/01/2019–07/31/2022: (AY 2019-20)
"ATD: Nonparametric Testing and Fast Computing Methods for Spatiotemporal Models with Applications to Threat Detection"

❖ National Science Foundation DMS 1903226 to PI Wenxuan Zhong for $368,876.00, from 06/15/2019–05/31/2023: (AY 2019-20)
"Collaborative Research: Novel Statistical Tools for Metagenomics and Metabolomics Data"

Individual Development:

- ❖ The lab member, Cheng Meng, won the Best Student Presentation Award at the ASA Section on Nonparametric at JSM 2019.
- ❖ The lab member, Cheng Meng, will begin his academic career as an Assistant Professor in the Institute of Statistics and Big Data at Renmin University, China in Fall 2020.
- ❖ The lab member, Jingyi Zhang, will begin her academic career as an Assistant Professor in the Center for Statistical Science at Tsinghua University, Beijing, China in Fall 2020.
- ❖ The lab member, Xinlian Zhang, won the 2020 Graduate Student Excellence-in-Research Award.
- ❖ The lab member, Xin Xing, will begin his academic career as an Assistant Professor in the Department of Statistics at Virginia Tech in Fall 2020
- ❖ The lab member, Cheng Meng, also won honorable mention for Poster Competition in 2018 Georgia Statistic Day.
- ❖ The lab member, Xinlian Zhang, began her academic career as an Assistant Professor in the Department of Family Medicine and Public Health (FMPH) at UC San Diego in 2019.
- ❖ The lab member, Rui Xie, began his academic career as an Assistant Professor in the Department of Statistics at the University of Central Florida in 2019.
- ❖ The lab member Rui Xie's paper was selected as one of the winners of 2019 JSM Best Student Paper Award.
- ❖ The lab member, Xiaoxiao Sun, was selected to receive the 2019 Excellence in Research by Graduate Students Award in Mathematical and Physical Sciences from the Graduate School.
- ❖ The lab member, Xiaoxiao Sun, began his academic career as an Assistant Professor in the Department of Epidemiology and Biostatistics at University of Arizona.
- ❖ The lab member, Yiwen Liu, began her academic career as an Assistant Professor in Department of Mathematics at University of Arizona.
- ❖ The lab member, Xin Xing, was a Post-doctoral Fellow at Harvard University during AY 2018-19.
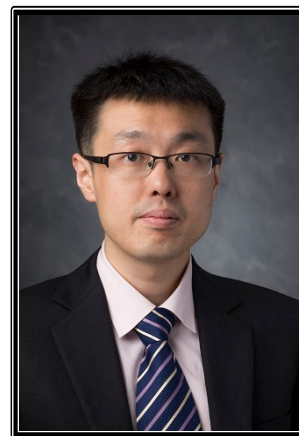
WELCOME NEW FACES!

Justin Strait, Assistant Professor

Dr. Justin Strait earned his Ph.D. in Statistics from Ohio State in 2018. Prior to that, he received a dual BS in Mathematics and Atmospheric Science from the University of Utah in 2013. His areas of focus include statistical shape analysis and functional data analysis. His hobbies include running, snow skiing, and playing tennis; Georgia is the eighth state he has lived in (and first in the south).

Yuan Ke, Assistant Professor

Dr. Yuan Ke earned his Ph.D. in Mathematics from University of York in United Kingdom in 2015. Prior to that, he received an MS in Statistics from London School of Economics and Political Science and BS in Physics from Beijing Normal University. Before he joined UGA, he was a visiting assistant professor at Penn State University and a post-doctoral research associate at Princeton University. His research interests include statistical machine learning, robust statistical methods, non/semi-parametric modelling and financial econometrics. His hobbies include jogging, hiking and cooking.

Monsur Chowdhury, Lecturer

Dr. Monsur Chowdhury earned his Ph.D. in Statistics from University of Manitoba in Canada in 2016. Prior to that, he received an MS in Statistics from Shahjalal University of Science & Technology, Bangladesh in 1999. He also received another M.S. in Mathematics from Georg August University, Germany in 2005. Before he joined UGA, he is a visiting assistant professor at University of Central Florida. His research interests include Optimal Experimental Design, Constrained Optimization, and Factorial Structure Design econometrics.

Maduranga Dassanayake, Lecturer

Dr. Maduranga Dassanayake earned his Ph.D. in Statistics from Arizona State University in 2018. Prior to that, he received an MS in Statistics from University of Texas at El Paso. He received his B.S.(Special), Statistics with Computer Science and Bachelor of Information Technology at University of Colombo, Sri Lanka. His research interests are in the area of goodness-of-fit tests, Generalized Linear Latent and Mixed Models, and Multi-level Structural Equation Modeling. Besides teaching, he enjoys running, hiking, playing cricket, and other outdoor activities.

Kendra Hull, Fiscal Affairs Manager

Ms. Kendra Hull became a member of the Department of Statistics family back in October 2018 when she was hired as the Fiscal Affairs Manager & Assistant to the Department Head. She has a high level of responsibility, and aids the department head in day-to-day operations of the Department. Kendra earned a Bachelor's degree in Business Administration from Paine College, and a MBA degree from Piedmont College. She has been with UGA for over 7 years, during which she gained experience in administration of accounts, budgets, and other financial related functions at the UGA Accounts Payable, UGA Central Foods Storage, and UGA CAES- Southern Regional Extension Forestry, where she worked as Business Manager I.

Wendy Starnes, Administrative Associate II

Ms. Wendy Starnes joined the Department of Statistics in August 2019. She earned a Bachelor of Science degree in Psychology with a minor in Justice Studies from Georgia Southern University in 2016. She provides administrative, building, and safety support to the Department of Statistics.

STUDENT AWARDS 2019

Cody Pace
Best Master's Student

Hyunnam Ryu
Best Beginning PhD Student

Xinlian Zhang
Best Senior Student

Ziyang Ma
Best Consultant Assistant

Richard Ross
Best Volunteer Consulting Assistant

Tawanda Benesi, Joseph Powell, Hyunnam Ryu, Eunsil Seok
Outstanding Graduate Teaching Assistant

Jinyang Chen, Lei Jiang, Shuang Li, Zhizhong Lin, Cody Pace, Jialin Yang, Jianing Xu, and Wei Xu
Graduate Mu Sigma Rho Inductees

Jinyang Chen
UGA Innovative and Interdisciplinary Research Grant

Xiaoxiao Sun
UGA Excellence in Research by Graduate Students in Mathemctical and Physical Sciences

Cody Pace
Georgia Impact Now Master's Fellowship

Mohamad Burjak
Best Capstone Student Award

Zachary Baker, Erin Behrhorst, Jackson Berg, Joshua Bielenberg, Mohamad Burjak, Katelyn Hayes, Halley Henderson, JaNae Holloway, Viet Huynh, Davis Jackson, Adam Jacobson, Sharim yes, Evan Knox, Aditya Krishnaswamy, Rebecca Liu, Nicholas McVay, Brooke Montgomery, Justin Mullane, NhuNgoc (Tina) Nguyen, Uriel Paniagua, Sheena Pradeep, Stephanie Steadman, Brittany Webb
Undergraduate Mu Sigma Rho Inductees

Zachary Baker, Evan Knox, NhuNgoc Nguyen
Best Student Award

Sharim Khan, Shivangi Medhekar
Best Research Award

Sara Robinson
SF Graduate Research Fellowship

Joseph Resch
CURO Summer Fellowship

STUDENT AWARDS 2020

Bret Stevenson
Best Master's Student

Mengyun Yu
Best Beginning PhD Student

JC Poythress
Best Senior Student

Juhyung Lee
Best Consultant Assistant

Kristen Knight
Best Volunteer Consulting Assistant

Huimin Chenh, Byoungseok Choi, Kaiwen Han, Xiaochuan Li, Bret Stevenson, Yifei Tian, Duna Zhan, Li Zhou
Graduate Mu Sigma Rho Inductees

Kristen Knight
UGA Innovative and Interdisciplinary Research Grant

Xianlian Zhang
UGA Excellence in Research by Graduate Students in Mathemctical and Physical Sciences

Will Cranford
Georgia Impact Now Master's Fellowship

Aditya Krishnaswamy, Denali Pray
Best Capstone Student Award

Jeevan Jankar
Graduate School Research Assistantship

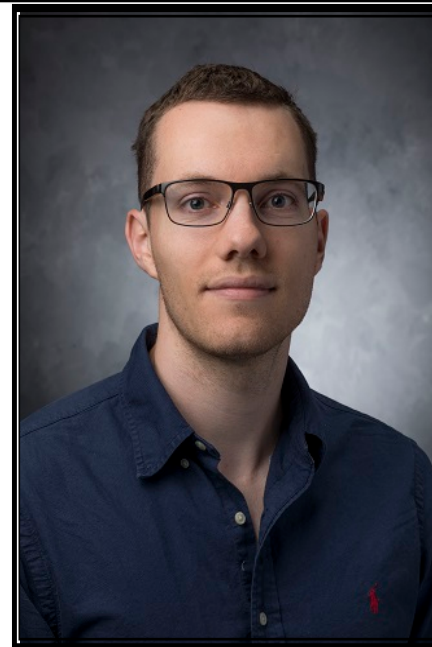**Jordyn Gulle**
Blue Key Honors Society

STAT 2000
Nicholas Toebben | Coordinator

In Spring 2018, STAT 2000 reached an enrollment nadir of 897 students from a high of 1200+ students in Spring 2016, due to a combination of unfortunate factors. When I was appointed as coordinator of the course in Fall 2018 (at first in a limited-term appointment), it was imperative that we restyle STAT 2000 and salvage its impression among a student body frequently looking elsewhere for their introductory statistics credits. I was blessed with a confluence of support from the department in terms of better TAs and classrooms. I was to work with a team of fantastic instructors – Mickey Dunlap provided a veteran presence with invaluable experience, and Claire Sarver was a blessing we have tried to retain for as long as we can. To put the quality of personnel around me into perspective, three of my TAs had already won the UGA Outstanding Graduate Teaching Assistant award! When I was invited to a sorority banquet thanking their favorite teachers from the semester, I found that 1/3 of the instructors present were STAT 2000 instructors. We had an all-star lineup that produced remarkable results.

For my own merit, we also made some adjustments to the course that I think students appreciated. In my own right, I was becoming a better and more experienced instructor, and I found the quality of both my instruction and my interaction with students was improving. The instruction team elected to modify the curriculum slightly, cutting parts that seemed to confuse rather than educate students if we could afford to do so, and reordering other material hopefully to ease the transition between subjects. We dropped the mandatory attendance policy that was taking up a disproportionate amount of student attention relative to its impact on their grade. I rewrote and edited homework assignments to bring them up to date both in context and content with what we chose to emphasize in the course. I adopted Dr. Gilbert's (previous STAT 2000 Coordinator) TA training methodology for the labs, but since I was able to do so outside the confines of the required STAT 7770 course, I was able to take a more focused and efficient approach with my TAs. We decided to keep the final exam as optional, but also make it so that it would not count if it were to hurt a student's grade, hence offering them what is effectively a cumulative extra credit assignment. We became relatively more lax on students' need for documentation when missing one of the three midterms, since losing their opportunity at the only extra credit assignment of the semester was a strong deterrent to falsified emergencies. Finally, I opted to listen to the most common bit of student criticism of the course – that the exams felt too dissimilar in difficulty to the homework and labs – and introduced a new assignment, quizzes, designed to give students a microcosmic testing experience at relatively lower stakes so that they could gauge their preparedness at an assessment-worthy level. After the changes and a year of hard work from our team, the class looked like it was on its way to recovery. Most of our students were still taking the class as a means to an end in some other program, but they seemed to enjoy the course and engage with its material more. The enrollment in STAT 2000 has been steadily rising each semester since the decline in Spring 2018. The total enrollment in STAT 2000 in Fall 2020 has already reached 1,170! Despite teaching lectures of size 180, I have folders of hundreds of appreciative messages from students and have been requested to write multiple letters of recommendation each semester. I say with great pride that we managed to do this without merely inflating grades or diminishing the core conceptual content of the course.

In Fall 2019, I was presented with an opportunity to develop the first online version of STAT 2000, called STAT 2000E, in conjunction with the Office of Online Learning. Development of the course was well underway when we left for spring break in Spring 2020, which proved invaluable as we finished the semester entirely online. We just recently finished our first official offering of STAT2000E to effectively 200 students in Summer 2020. This is the highest summer enrollment it has ever been! I am looking forward both to its recurrence every summer henceforth and the use of its production and resources as we teach Fall 2020 with a heavy emphasis of online availability of material. The class looks primed for another year of success moving forward, and I'm excited to see what other improvements we can make after the dust settles. I hope you are, as well!

We would love to see you soon! Stay tuned for future event information by visiting our website: www.stat.uga.edu

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

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THANK YOU!

We wish to acknowledge gifts from and extend a very special thank you to the following individuals and organizations that made a gift to the Department of Statistics over the last year:

Ms. Katrina R. Baggett

Mrs. Tina Stephens Barrs and Mr. Billy Barrs

Dr. Mae Carpenter

Mr. Yinpu Chen and Ms. Yin Shi

Deloitte Foundation

Ms. Angela Dickey

Dr. Jennifer Dickey

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Unclaimed Property Consulting & Reporting LLC

Mr. Andrew J. Vesper

Dr. Ye M. Wang

Ms. Ruobing Wang

Mr. John W. Washington and Ms. Anne L. Washington

Dr. Yong Zeng

Special thanks to Dr. Mohamed Al Lawati for his continued support to the Department of Statistics.