

# STORies

FALL 2022 **NEWSLETTER**

Department of Statistics and Operations Research



THE UNIVERSITY  
*of* NORTH CAROLINA  
*at* CHAPEL HILL

# STORIES

## FALL 2022

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**Editor:**

Nicolas Fraiman



Dear Friends,

Welcome to the 2022 annual issue of STORies, which looks back at the department's past academic year 2021/2022 and considers its outlook.

As the new academic year 2022/2023 is starting, the department feels like in the pre-pandemic times: more people around, few people wearing masks, and more socializing, with the lunch table again full of faculty and staff. Along similar lines, the faculty and graduate students have started going to in-person conferences, visiting collaborators and places, and vice versa, the department just hosted an in-person conference in probability and started seeing research visitors once again. This is quite a change compared to the past academic year which was still quite disruptive: the delta and omicron waves, juggling in-person and remote teachings, accommodating sick students, hardly anyone in the department being spared by the virus. Getting to this point was not easy for many of us on multiple levels. The pandemic may still have surprises up its sleeve, but the overall sense here is that we are learning to live with the virus and have enough measures to counter its ill effects.

The pandemic aside, the department continued to evolve and grow over the past academic year. New faculty hiring took a lot of oxygen out of the departmental activities. With three tenure-track and one teaching-track lines - an unusually large number of search authorizations - it was the collective effort of the whole department (faculty, staff, and graduate students), and especially the committee chairs Profs. Smith and McLean, that resulted in successful hires of four excellent candidates. Their short bios and pictures are included in these STORies.

Through the past academic year, as well as through all my term, I have been reminded constantly of the research strengths and breadths of our amazing faculty. Research grants continue supporting a lot of our research activities; a CAREER grant by Prof. Banerjee, a large RTG on networks led by Prof. Budhiraja, a big FRG led by Prof. K. Zhang, to name but a few in the last academic year. Their successes would not be possible without the contributions of our graduate students.

Faculty, staff, and graduate students dedicated service to running the department, and making it better have been another bright spot in my experience as the chair. The new academic year brings many personnel changes to various administrative roles in the department; Prof. Argon becoming the new DGS, Prof. Olvera-Cravioto the new DUS, Prof. Hannig the new DGA, amongst other changes. This is happening along with planned and unplanned staff turnover; the department recently welcomed its new manager Mrs. Weaver.

Looking ahead at the new academic year 2022/2023, the department will continue pursuing some of its ongoing priorities related to data science, MS program, and department anniversary. Another theme that emerged over the last number of years is the growth of the department. This is bringing its own issues related to management, space, and other areas, that will continue needing our attention.

Do continue supporting the department in any way you can!

Sincerely,

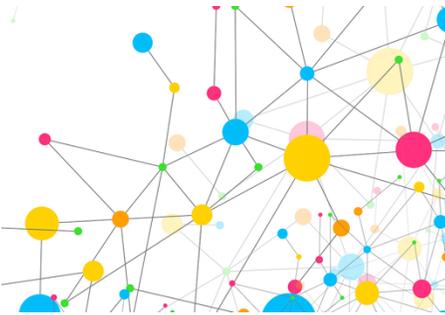


**VLADAS PIPIRAS**  
CHAIR

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# HIGHlights

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A team from the department was awarded a five-year award by the National Science Foundation for a Research Training Group to develop a comprehensive training and mentoring program, for undergraduate and graduate students and postdoctoral associates, centered around the theme of theory and applications of Networks.

The team consists of professors:

- Sayan Banerjee,
- Shankar Bhamidi,
- Amarjit Budhiraja,
- Nicolas Fraiman,
- Yao Li,
- Mariana Olvera-Cravioto,
- Vladas Pipiras,
- Quoc Tran-Dinh.



*Bin Yu*

**CHANCELLOR'S DISTINGUISHED PROFESSOR  
DEPARTMENT OF STATISTICS & EECS  
UC BERKELEY**

The Hotelling Lectures are an annual event honoring the memory of Professor Harold Hotelling, our first chairman. This year we were honored to have Professor Bin Yu from the University of California at Berkeley. She is a member of the National Academy of Sciences and of the American Academy of Arts and Sciences. She is Past President of the Institute of Mathematical Statistics, Tukey Memorial Lecturer

of the Bernoulli Society, Guggenheim Fellow, and a Rietz Lecturer. She holds an Honorary Doctorate from The University of Lausanne in Switzerland. Her talks were on:

- *Veridical data science: the practice of responsible data analysis and decision-making.*
- *Interpreting deep neural networks towards trustworthiness.*



*Sayan Banerjee*

**ASSOCIATE PROFESSOR**

Professor Banerjee received an NSF CAREER grant on:

*Network Centrality and Its Applications in Detection, Dynamics, and Load Balancing.*

The project aims to develop a universal mathematical understanding of networks that evolve over time and processes that live on them. The key idea is to identify certain

network attributes that carry a footprint of a network's past as it evolves and exploit them in reconstructing the early stages of a network from its current configuration. This can be used to detect the origin of a rumor spread, popular individuals and their influence in a social network, or a source of a disease outbreak.

# GRADUATE PROGRAM



*NILAY ARGON*

*GRADUATE PROGRAM DIRECTOR*

I would like to start off my message with some good news. Our graduate program is ranked 11th among all Statistics programs in the nation according to US News 2022 rankings. With this ranking, STOR becomes one of the highest ranked graduate programs in the College of Arts and Sciences at UNC.

I have more good news! A team from our faculty (Profs. Banerjee, Bhamidi, Budhiraja, Fraiman, Li, Olvera-Cravioto, Pipiras, and Tran-Dinh) was awarded a prestigious five-year NSF Research Training Group (RTG) grant (NSF DMS-2134107) to develop a comprehensive training and mentoring program for undergraduate and graduate students as well as post-doctoral associates. This multi-million-dollar grant is centered around the theme of theory and applications of networks and will have a direct impact on our

graduate program through funding support for graduate students and educational initiatives such as minicourses and summer bootcamps. With support from this RTG grant, we already initiated a minicourse series, where international leaders in the field of networks deliver a series of lectures on an advanced area of active research. The line-up for this academic year includes Philippe Robert from INRIA (France), who is an expert in large stochastic networks and applications to biology, and Sidney Resnick from Cornell, who is well-known for his expertise in understanding probabilistic heavy-tailed phenomena and their influence on random network dynamics.

None of these would have been possible without the vision and hard work of the past Director of Graduate Studies Prof. Bhamidi. He spearheaded the unification of

the graduate programs in Statistics and Operations Research and weathered multiple storms during the transition process in the midst of a global pandemic. Thanks to him I am starting my term as Director of Graduate Studies on stable footing!

Despite all the good news, we still face significant challenges in creating a diverse and strong graduate student body. As we compete with other highly ranked statistics programs and engineering and business schools, we need our alumni's support more than ever. In addition to establishing endowments to support graduate students, our alumni can help strengthen our ties with industry through visits to the department and graduate student internships. Please contact me directly ([nilay@unc.edu](mailto:nilay@unc.edu)) if you have ideas along these lines.

# UNDERGRADUATE PROGRAM



*MARIANA OLVERA-CRAVIOTO*

*UNDERGRADUATE  
PROGRAM DIRECTOR*



We are delighted to welcome you to a new academic year! Whether you are a continuing student or have just decided to minor/major in STAN, we hope you will find 2022-23 to be a year when we can all enjoy a more typical college experience, seeing each other's faces and getting together to work on homework and preparing for exams. This year marks the first anniversary of our new minor in data science, which continues to grow and is fast becoming one of the most popular minors on campus. We are also celebrating the 75th anniversary of the Statistics department, so be on the lookout for events to commemorate this major milestone.

Last May we had our first in-person graduation ceremony after a couple of rough pandemic years, and it was great to see all the happy faces of our graduating class and their proud families. Our annual STAN Award, which recognizes majors who have demonstrated academic excellence or outstanding achievements in STAN-related activities outside the classroom, went to Chandler Ross Glat and Rui Xue. Our W. Robert Mann Award, which is given to graduating majors who have shown great success and future potential in actuarial science, went to Siddharth Bowgal. Join me in congratulating all of them!

This academic year is also my first as Director of Undergraduate Studies, and I am excited to see many proposals for new courses and department activities that will enrich our students' undergraduate experience. Your instructors are always thinking of new ways to inspire the next generation of STAN leaders and helping our students get started with promising careers in a diverse range of areas, spanning the natural sciences, business, finance, tech and data science in general. Current students and alumni can also play an important role in shaping the future of our department by sharing your thoughts and suggestions with us.

I wish you all a wonderful start to the fall semester!

# DEPARTMENTAL AFFAIRS

*CINNAMON WEAVER*

*BUSINESS OFFICER*



In January of 2022 the tight-knit staff in Statistics and Operations Research were preparing for another tumultuous spring semester. This time was not only full of a growing, active student body, but also preparing for the retirement of the administrative assistant, and the loss of fifteen years of departmental knowledge. The semester turned out to be harder than expected. Soon after, the business officer and the accounting technician took promotions and left the department in February and March, respectively. Christine Keat, the student services manager, was left to pick up all the pieces, cover all the jobs, and work with inexperienced temps during the interim. Amazingly, Christine has kept a positive attitude through this extended transition. My first day of work I stepped into Christine's office door, "Welcome to STOR. Here are your keys. Let me show you to your office." I don't remember where it fell in her line of statements, but the other greeting I remember is "I'm so glad you're here."

Step 1: Hire a full staff. I had about three days of quiet while I didn't have access to anything in STOR. Around

day four, Dr. Pipiras asked "Who should I bug?" So, even with so few people present in Hanes Hall, the summer was chaotic. Christine and I were both learning new tasks and new processes, and still trying to do the work of four, or even five.

By the beginning of the fall semester, we were both exhausted but feeling positive after completing a staff hire. In mid-August we welcomed Danielle Ross to the department as our new and enthusiastic administrative assistant. She is a graduate of NC State University and has many years of experience in teaching elementary and secondary education. While learning about her new position she has been focusing on documentation and procedures to help the department's organization and dissemination of information. In September we welcomed our new accounting technician, Russell Andrews. He is a graduate alum of KFBS after earning an MBA, and a transplant from New York where he retired from the police force. He has also been a devoted UNC fan most of his life.

For this singular moment, we are now fully staffed. In addition, we have

been lucky enough to find (and retain) an amazing temp, Brenda Hodges, who will continue to work with us, half time, behind the scenes to help us all catch up, move forward, and give us some breathing room to learn our jobs. She is currently supporting the administrative organization of our department, reviewing budget proposals, and working on special projects. I am so glad we're all here.

Step 2: The reintroduction of resources for the department. There are so many instructions, notifications, policies, guidelines and procedures that are sent to us by email, but our email-centric work style for communication can be messy and incomplete. The next goal is for faculty, staff and employed students to have a central location to access information, forms and answers that will assist us all in accomplishing work more efficiently. The idea is to increase convenience and self-reliance so we may all experience more growth and less stress as we move towards a stronger team in Statistics and Operations Research. Each year will bring its own set of obstacles. We will keep setting goals and taking it one step at a time.



*Kevin O'Connor*

**PH.D. CLASS OF 2021**

When I first arrived in Chapel Hill in Summer of 2017, I had little idea of what to expect. Throughout the PhD application process, UNC STOR had advertised itself as the friendliest department around, situated in a great town, with world-renowned yet

approachable faculty. After only a few days into my first semester there, it became clear that the PhD experience at UNC STOR had even more to offer. I immediately felt welcomed by the faculty and upperclassmen. As in undergrad, there was a built-in community of faculty, staff and students that welcomed the new students into the fold. In my courses, I found that the faculty respected our different academic and personal backgrounds, helping each of us find success in our own way. They pushed us to learn the material while keeping it fun. My thesis advisor Andrew Nobel

treated me not as a student but as a colleague, giving me the space to think for myself, make my own mistakes, and test my ideas. He, as well as the other faculty in the department, taught me much more than a few theorems and algorithms. They taught me how to ask interesting questions and find answers, two skills that I carry with me to every part of my life. Some of the things I will miss most include getting coffee from The Meantime, walks around the quad with classmates, Weaver Street Market, and the Spicy 9 lunch special. Thanks for the great experience UNC STOR.

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## STORies

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*Chandler Glat*

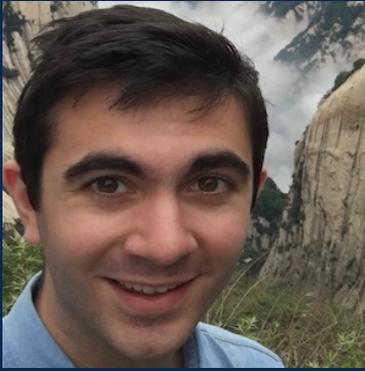
**B.S. CLASS OF 2022**

As I started my academic career at Carolina, I knew I wanted to find a focus that would allow me to benefit from a variety of STEM-based disciplines. As someone with very broad interests, I valued the holistic focus of the STOR curriculum. During the program,

I've been able to develop critical skills in the fields of Mathematics, Computer Science, and Data Science, while understanding how to actively apply critical findings to drive decisions in multidisciplinary contexts.

My statistics education has provided an amazing framework to help explain the world around us. From being able to effectively visualize complex data sets and build robust predictive models, I've learned to appreciate the ability of Statistics to answer questions and derive meaningful insights. Having been exposed to these practices across the fields of finance and economics to physics and chemistry, I feel

ready to tackle key problems from a cross-industry lens. Ultimately, I think my biggest takeaway from the program was learning how to better think probabilistically about dynamic systems, in which derived results are often open to interpretation. In other words, Statistics is a quantitative field that relies on sufficient qualitative analysis to really drive results. I think this mindset and informed judgment is essential for anyone hoping to reap the benefits that Statistics can offer. I'm so grateful for the skills and relationships this program has provided, and I hope everyone can appreciate and enjoy it as much as I have!



*Thomas Keefe*

GRADUATE STUDENT LIASON

I'm delighted to see a new cohort of students in the basement. Unfortunately, I recently decided that I will have to step down from the liaison position to spend more time in my hometown with my family.

So, instead of talking about liaising I'd like to thank a couple of people who have done a lot for our students.

First, to Shankar Bhamidi for the excellent job he did as Director of Graduate Studies the last three years. Shankar pushed to overhaul the 600-level curriculum to reflect what today's graduate statisticians, operations researchers, stochasticians, and probabilists need to know, and he figured out where the program requirements could be altered to make students' lives more manageable while retaining the department's high standards.

Nilay Argon will replace Shankar as DGS, and I think she will be great for the students. Nilay also deserves a thank-you from STOR for her previous service as Director of Graduate Admissions. As DGA, Nilay greatly increased the representation of women in the department, both domestic and international. I believe we should actively try to increase departmental diversity so that everyone in the department feels they have community, and so that STOR students develop in an environment where they see important contributions coming from a diverse group of people.

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## STORies

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# STOR is turning 75 (ST) / 50 (OR)!

Our anniversary activities  
will be announced soon.



The professors of the Department of Statistics in the early 1960s: Hotelling, Nicholson, Johnson, Hoeffding, Bose, Roy.

Keep in touch with us via our website and social media accounts.

 [stor.unc.edu](http://stor.unc.edu)

 [facebook.com/uncstor](https://facebook.com/uncstor)

 [twitter.com/uncstor](https://twitter.com/uncstor)



*The department is very happy to welcome its new members!*

### **OLUREMI ABAYOMI**

**TEACHING ASSISTANT PROFESSOR**



Oluremi (who usually goes by Remi) received his Ph.D. in Statistics and Analytics from Central Michigan University in May 2020. His core professional interests lie in establishing a connection between students' everyday questions and answers based on statistical reasoning and techniques. When he isn't in class, Remi enjoys watching soccer, playing pool and tennis, and having good family time.

### **GUANTING CHEN**

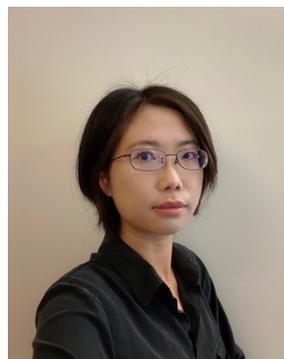
**ASSISTANT PROFESSOR**



Guanting's research lies at the intersection of sequential decision making, stochastic modeling, and optimization. He designs and analyzes algorithms with a focus on understanding how an agent interacting with an unknown environment can learn over time to make better decisions. Guanting received his Ph.D. from Stanford University, under the supervision of Professors Kay Giesecke and Yinyu Ye.

### **ZOE HUANG**

**ASSISTANT PROFESSOR**



From 2021 to 2022 Zoe was a postdoctoral fellow at the Mathematics Department, University of British Columbia, mentored by Prof. Jonathan Hermon. Zoe received her PhD in mathematics in the year 2021 from Duke University, advised by Prof. Rick Durrett. Her research lies in the field of probability, in particular spatial stochastic models. Zoe has worked on topics in interacting particle systems, random networks, mixing time of Markov chains.

### **MICHAEL O'NEILL**

**ASSISTANT PROFESSOR**



Michael was a postdoctoral researcher in the Department of Industrial and Systems Engineering at Lehigh University. He received his Ph.D. in 2020 from the Department of Computer Sciences at University of Wisconsin-Madison. His research lies in the design and theory of continuous nonlinear optimization algorithms, with a focus on worst-case complexity results. He is a recipient of a 2020 Computing Innovation Fellowship from the Computing Research Association.

*The department congratulates its undergraduate students for their great achievements!*

*Statistics and Analytics Award*

Chandler Glad  
Rui Xue

*W. Robert Mann Award*

Siddharth Bowgal

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# AWARDees

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*The department is very proud of its Ph.D. students for their excellent work!*

*Outstanding academic performance during first year of PhD studies:*

*Cambanis-Hoeffding-Nicholson Award*

Morgan Smith  
Bongsoo Yi

*Outstanding teaching performances:*

*Walter L. Deemer Excellence in Teaching Award*

Will Lassiter  
Nikolai Lipskomb

*Excellence in Teaching Assistance and Instruction Award*

Daiqi Gao  
Peter Lin  
Taylor Petty



# INCOMING STUDENTS



**Izzet Egemen Elver**  
*Bilkent University*

walking, swimming, reading



**Dilay Ozkan**  
*Middle East Technical University*

tennis, pilates, reading



**Jason Hu**  
*UNC - Chapel Hill*

video games, trumpet, running



**Akshay Sakanaveeti**  
*Indian Statistical Institute - Kolkata*

playing cricket, watching movies



**Geonhyeok Jeong**  
*Pusan National University*

playing and watching basketball



**Grace Smith**  
*College of William & Mary*

playing guitar, thrifting, concerts



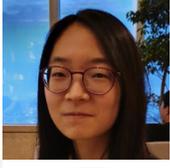
**Kyung Rok Kim**  
*Seoul National University*

snowboarding, listening to music



**Eun-Ah Song**  
*UNC - Chapel Hill*

Movies, traveling, books



**Hyeon Lee**  
*Seoul National University*

hiking, board games, playing piano



**Kendall Thomas**  
*Davidson College*

CycleBar, lifting, coffee



**Tianzhu Liu**  
*Bucknell University*

Lego, soccer, bouldering



**Fuwei Yu**  
*University of California - Davis*

anime, manga, hiking



**Daniel Meskill**  
*University of Connecticut*

rock climbing, hiking, writing



**Charles Zhao**  
*University of Maryland*

playing piano, reading



**Trung Nghia Nguyen**  
*Hanoi U. of Science and Technology*

TV series, music, writing poetry, dogs



**Yuhao Zhou**  
*UNC - Chapel Hill*

piano, strategy games, aviation geek

# SUPPORT STOR

Private giving is now more critical than ever. We welcome your gifts to STOR, either to our unrestricted fund that provides the Chair the flexibility to apply funding where it is needed most at any given time, or to support our existing fund-raising priorities.

## HOW TO GIVE

### Online:

<https://stor.unc.edu/about/support-us>

### Mail:

To make a gift via check, please make check payable to “Arts & Sciences Foundation, Inc.” with the name of the fund you wish to support in the memo line and mail to:

Cassie Diltz  
Director of Development  
The Arts and Sciences Foundation  
The University of North Carolina at Chapel Hill  
523 East Franklin St  
Chapel Hill, NC 27514

Remember that matching gifts can double or triple your gift. If you or your spouse works for a matching gift company, please ask your personnel officer for a matching gift form to send in with your gift.

## QUESTIONS

For questions about creating scholarships and professorships, making stock or estate gifts, donating to specific programs, please contact:

Cassie Diltz  
Director of Development  
The Arts and Sciences Foundation  
919-843-0345

### *Department Discretionary Fund*

This fund covers activities and initiatives at all levels, including career development, lecture series, stipends, and community outreach.

### *Graduate Opportunity Fund*

This newly created endowment provides support for undergraduate and graduate students in the department who enhance the diversity of the student body of the department, with particular emphasis on graduate student support.

### *Raj Chandra Bose Graduate Student Travel Fund*

This endowed fund through Gary G. Koch and Carolyn J. Koch and friends of the Department of Statistics and Operations Research provides support for graduate student travel.

### *Dr. Walter L. Deemer Excellence in Teaching Fund*

This endowed fund is used to annually recognize and reward teaching excellence of a faculty member and/or graduate student in the department.

### *Hoeffding Scholarship Fund*

Contributions to this fund support scholarship awards to graduate students. Awards are made based on demonstrated academic merit.