Purdue University Department of Statistics Newsletter

ODDS AND ENDS

OUR HIGHLIGHTS

BFF9

Purdue Statistics hosted the 9th annual BFF Conference.

DEPARTMENTAL NEWS

Updates on hiring, retirements and much more

AWARDS

Prestigious Awards for faculty, students and alumni at the departmental and college level.

STATISTICS FOR PURDUE STATISTICS

FACULTY

35
TENURED+ TENURE TRACK

2
PROFESSOR OF PRACTICE

7
VISITING SCHOLAR

14
LECTURER

GRADUATE STUDENTS

88
PhD

73
MASTER

UNDERGRADUATE STUDENTS

192
STAT MAJOR

307
ACTUARIAL SCIENCE

1,400
DATA MINE

MESSAGE FROM THE HEAD OF PURDUE STATISTICS

It has now been over a year since I took on the role of Head of Purdue Statistics, and I'm once again excited to share our latest department newsletter with the Purdue Statistics community—our faculty, staff, students, alumni, and friends. We are all part of the Purdue Statistics family!

Over the past year, we've had many exciting developments. We hosted two joint seminars to strengthen our collaborations with Lilly Statistics and Indiana University Biostatistics, fostering new partnerships between our faculty and external scientists. We also successfully organized the 9th Bayesian, Fiducial, and Frequentist (BFF) Conference at the Purdue Indianapolis campus, featuring over 50 speakers—including members of the National Academy of Sciences and COPSS award recipients.

Within Purdue, we launched our first graduate student conference, introduced new courses focused on artificial intelligence, and established a new actuarial science program at the Indianapolis campus. These initiatives reflect our continued commitment to being one of the world's most forward-thinking and modern statistics departments.

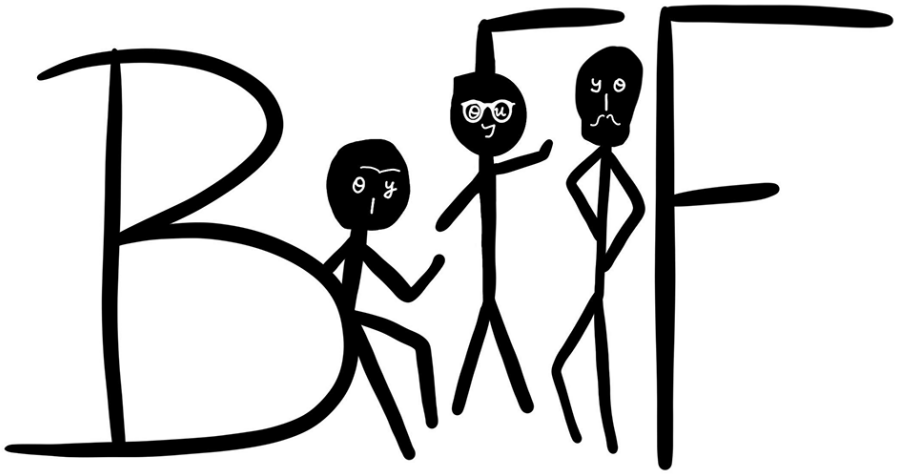
Purdue Statistics has grown significantly over the years, and I am confident that our future remains bright. I am deeply grateful to our alumni, faculty, staff, students, and friends for their unwavering support and dedication. Thank you all!

We look forward to reconnecting with Purdue Statistics friends and alumni at the Joint Statistical Meetings in Nashville, TN, this year. Please join us for the Purdue Statistics Reception at 6:00 PM on Sunday, August 3, 2024, at the Omni Nashville Hotel – Ballroom A. As always, there will be great food, drinks, and conversation. We hope to see you there!

Boiler up!

- Xiao

Xiao Wang, Ph.D.
Head, Department of Statistics
J.O. Berger and M.E. Bock Professor of Statistics



The BFF9 was held on May 12-14, 2025 by the Department of Statistics at the Tower Ballroom Foyer in Indianapolis. The BFF community began in 2014 to facilitate scientific exchange among data scientist and scholars in related fields that develop new methodologies and within the foundational principles of data science. The community encourages and promotes research activities to bridge foundations on data-based decisions to facilitate objective and replicable scientific learning, and to develop analytic and computing methodologies for data analysis.

Over the last 10 years, BFF conferences have served as a venue to bring together researchers and practitioners from Bayesian analysis, fiducial statistics, and frequentist statistics with interest important open problems in both theory and implementation, and most importantly discuss future directions of such research. The diversity of the conference attendees has created a dynamic, in-depth exchange of thoughts and ideas like no other conference in data science. Purdue Statistics is proud to host this year's conference at our campus in Indianapolis.

To see photos from this year's event, visit: https://purduesci.com/bff9_photos

SPONSORS

Corporate Support has always been and will continue to be a critical factor in the success of the BFF conference and Purdue Statistics Program. Contributed funds support student awards, reimburse keynote speakers, cover the cost of program books and bags, etc. We thank the following sponsors for their support of the 9th BFF conference:

Purdue College of Science
Purdue Department of Statistics
American Statistical Association
National Institute of Statistical Sciences
Eli Lilly and Company

KEYNOTE SPEAKERS

Xihong Lin, Harvard University
Karen Lynn Price, Eli Lilly
Jun Liu, Harvard University and Tsinghua University
Banquet Speaker
Xiaoli Meng, Harvard University

INVITED SPEAKERS

Antik Chakraborty, Department of Statistics, Purdue University
Armine Bagyan, Department of Statistics, Penn State University
Bill Prucka, Eli Lilly
Bryon Aragam, Chicago Booth School of Business, University of Chicago
Daniel Alabi, Department of Electrical and Computer Engineering, University of Illinois, Urbana-Champaign
Faming Liang, Purdue University
Fang Liu, University of Notre Dame
Guanyu Hu, The University of Texas Health Science Center at Houston
Hui Zou, School of Statistics, U of Minnesota
James Bailie, Department of Statistics, Harvard University
Jan Hannig, Department of Statistics and Operations Research, University of North Carolina at Chapel Hill
Jianwei Chen, San Diego State University
Jing Lei, Carnegie Mellon University
Kyle Cranmer, Department of Physics, University of Wisconsin
Leonardo Cella, Wake Forest University
Li Wang, Abbvie
Lingsong Zhang, Purdue University
Linjun Zhang, Department of Statistics, Rutgers University
Marco Avella-Medina, Department of Statistics, Columbia University
Jian Huang, Department of Applied Mathematic, Hong Kong Polytechnic University
Nicole Pashley, Rutgers University
Peter Song, Department of Statistics, University of Michigan
Ping Ma, University of Georgia
Quan Zhou, Texas A&M University
Razieh Nabi, Rollins School of Public Health, Emory University
Richard Payne, Eli Lilly
Run Zhang, Unlearn AI
Sally Paganin, Department of Statistics, Ohio State University
Sherry Xinlei Wang, The University of Texas at Arlington
Thomas Lee, UC Davis
Veronika Rockova, Chicago Booth School of Business, University of Chicago
Weijie Su, University of Pennsylvania
Weixin Yao, Department of Statistics, UC-Riverside
Xiaoli Meng, Harvard University
Xiaotong Shen, School of Statistics, U of Minnesota
Xinran Li, University of Chicago
Xiwei Tang, University of Texas at Dallas
Ya'acov Ritov, Department of Statistics, University of Michigan
Yazhen Wang, University of Wisconsin- Madison
Yichen Cheng, Georgia State University
Ying Nian Wu, Department of Statistics, UCLA
Ying Nian, University of California, Los Angeles
Yves Atchadé, Department of Mathematics and Statistics, Boston University
Zhanyu Wang, Research Scientist, Meta

Photos included by Purdue University and cover art by Adobe.

2025 ANNUAL SPRING AWARDS

On Friday, April 25, 2025, the Purdue University Department of Statistics came together for a joyful celebration in the state-of-the-art Data Science and AI building. The event honored the outstanding achievements of students, faculty, and staff with well-deserved awards, delicious refreshments, and a strong spirit of camaraderie. It was a vibrant gathering filled with pride, laughter, and shared success as the department reflected on a year of excellence and innovation.

UNDERGRADUATE AWARDS

Outstanding College of Science Students in Statistics

When making the selections for these awards, the College of Science considered outstanding academic achievement, a strong academic program, and evidence of co-curricular involvement, such as undergraduate research, community service, and leadership.

Recipients

- Outstanding Senior: Lingzhu Yu
- Outstanding Junior: Joe Van Valer
- Outstanding Sophomore: Elliott Shi
- Outstanding Freshman: Alice Zhang

V.L. Anderson Scholarship Award

This scholarship is awarded to an undergraduate student who shows promise of contributing to statistics and its applications. The scholarship is in honor of the late Dr. Virgil L. Anderson, who retired from the Department of Statistics in 1986, after nearly 36 years. Professor Anderson was a leader in applied statistics on the Purdue campus and was the Director of the Statistics Laboratory, which was the forerunner of the Statistical Consulting Service. In great demand as a statistical consultant in industry, he authored widely used textbooks in experimental design.

Recipients

- Joy Gao
- Jacob Strietelmeier
- Jordan Reynolds

David S. Moore Undergraduate Scholarship Award

The David S. Moore Undergraduate Scholarship is an annual scholarship given to students who enter as freshmen planning to major in statistics. The scholarship honors Emeritus Professor David S. Moore's contributions to his field and to Purdue.

Recipients

- Yiyang Pan
- Ayden Cline

Joseph Ruzicka Undergraduate Research Award

The Joseph Ruzicka Undergraduate Research Award is made possible through the generous support of Art and Kathryn Lorenz. Kathryn, an alumna of the College of Science dedicated her life to scientific research. Kathryn and Art established this award to honor her father, Joseph Ruzicka, and to acknowledge his unwavering encouragement of Kathryn's scientific career.

Recipients

- Jiayi He
- Muhammad Arfan bin Abdul Halim

GRADUATE AWARDS

William J. Studden Publication Award

The Dr. William J. Studden Publication award recognizes work done by a current Purdue Statistics Ph.D. candidate on an outstanding mathematical statistics paper accepted for publication. The award honors the late Dr. William J. Studden who retired from Purdue University's Department of Statistics in 2005 after 41 years with the department.

Recipients

- Hyeong Jin Hyun
- Taegyu Kang

I. W. Burr Award

This award was established in 1974 upon the retirement of Professor Burr, an eminent statistician who taught at Purdue for nearly 35 years. The criteria for this award are: (a) promise of contribution to the profession as evidenced by academic excellence in courses and exams, and by the quality of the thesis research, (b) and excellence in teaching or consulting as a graduate student at Purdue.

Recipient

- Jiwon Jung

George Casella Travel Award

The George Casella Travel Award program provides support for a student to travel nationally or internationally to attend a conference and make a presentation. The award honors the late Professor George Casella, who received his MS and Ph.D. in Statistics from Purdue. George had a very distinguished career as a teacher, mentor, and researcher at Rutgers, Cornell, and the University of Florida working in the areas of both theoretical and applied statistics.

Recipient

- Young Hyun Cho

L. J. Cote M.S. Excellence in Statistics Award

This award is in honor of the late Professor Louis J. Cote who retired from the Department of Statistics in 1991. He was an outstanding mentor to generations of graduate students. This award is given to Statistics graduate students completing a M.S. program and for their excellence in academic work, consulting and teaching.

Recipient

- Carmen Sullivan

Outstanding Teaching by a Statistics T.A. Award

Teaching assistants contribute substantially to the teaching mission of the Department of Statistics. Their classroom performance is important to the quality of service to students. Therefore, the Department of Statistics faculty annually recognize a statistics teaching assistant for teaching excellence in the classroom.

Recipient

- Bo-Yu Chen

FACULTY AND STAFF AWARDS
DEPARTMENT OF STATISTICS

Norma Lucas Excellence Award

This award was established in 2009 upon the retirement of Norma Lucas to honor her high level of service to the department for 39 years. It is given to staff members in the Department of Statistics to recognize exceptional service, dedication and/or loyalty to the department.

Recipient

- Amanda Taylor

Outstanding Assistant Professor Teaching Award

The Outstanding Assistant Professor Teaching Award is given to recognize excellent performance and service to the Department of Statistics and to students through outstanding classroom teaching.

Recipient

- Haibo Liu

Bravo+ Award

The Bravo+ award recognizes a stand-out accomplishment or over-the-top achievement by a Purdue faculty or staff member to recognize the excellence that exists among employees across the University. It reinforces the values and behaviors that are important to the Purdue.

Recipient

- Christina Munson

College of Science Awards

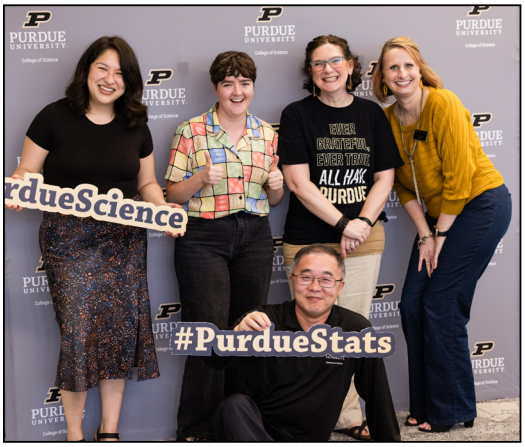
- Customer Service Award: Karla Sicaju
- Graduate Student Mentoring Award: Kiseop Lee
- Leadership Awards: Raghu Pasupathy and Jianxi Su
- Outstanding Service to College/Dept Award: Drew Yarger

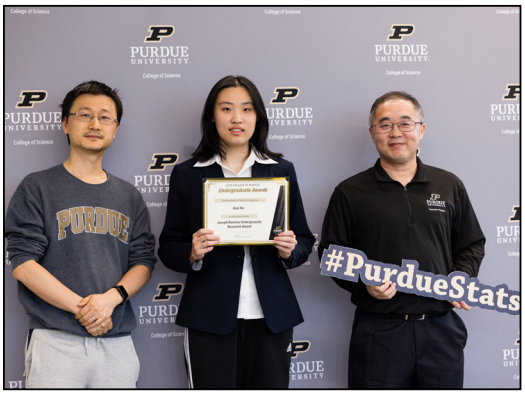
Thank you to our donors

We would like to acknowledge the donors who have given generously to help set up scholarships and awards for our students. Their kindness makes it possible for the next generation of Boilermakers to establish their own giant leaps in statistics. Thank you to all who attended and celebrated with us!

To see photos from this year's event, visit:

https://purduesci.com/2025StatsAwards





Faculty and Student External Awards

Chuanhai Liu, Associate Head and Professor of Statistics, was named an Institute of Mathematical Statistics Fellow. He was recognized for highly original contributions to the foundation of statistical inference and computational statistics.

The designation of IMS Fellow has been a significant honor for 90 years. Each Fellow has demonstrated distinction in research in statistics or probability or has demonstrated leadership that has profoundly influenced the field.

Antik Chakraborty, Assistant Professor of Statistics (PI) and **Anindya Bhadra**, Professor of Statistics (Co-PI), have been awarded a three-year NSF grant, totaling $375,000, for their research on probabilistic graphical models with applications to social sciences. The award, titled: "Likelihood-based Inference for Exponential Family Graphical Models," has been funded by the Social and Economic Sciences (SES) division of the NSF under the Methodology, Measurement and Statistics (MMS) program for three years.

Exponential family probabilistic graphical models are useful for modeling complex dependencies between multiple variables. The partially observed version of these models allows departure from the exponential family via a "product of experts" model to capture more complex dependence, most notably via Boltzmann Machine-based architectures, and forms a key tool for generative AI. Unfortunately, these models often contain an intractable normalizing constant that makes likelihood-based (both maximum likelihood and fully Bayesian) inference challenging. The project will address this key barrier. Additionally, the newly developed methods will be applied to study psychometric datasets.

The Korean International Statistical Society (KISS) has announced that **Kiseop Lee**, associate professor of Statistics at Purdue University, will serve as the seventh president of the organization. KISS is a non-profit corporation that is organized and operated for educational, charitable and scientific purposes.

"KISS is one of 13 organizations consisting of Joint Statistical Meetings(JSM), which is the largest statistics meeting in the world", says Lee. "Being a president of such an academic society is considered as the highest level of service to the profession. Personally, I have worked as the executive director and on the board of directors for many years. I've watched that KISS has grown a lot in the last ten years. In the era of data science, KISS faces new challenges and opportunities, like other statistics societies. I am happy to serve as a leader in this critical moment. I am also excited to work with other statistical associations such as ASA, ICSA, IISA actively. This eventually will broaden my sights on statistics and help me to contribute more to the department and the profession."

Lee's research area is quantitative finance, including stochastic analysis, statistical inference, and machine learning as main tools. Quantitative finance is considered as an interdisciplinary area with a relatively long history.

"Traditionally, quantitative finance was considered as an application of stochastic analysis. However, in recent years, the focus has been diversified to various methods of machine learning, and data scientific methods," says Lee. "Among my Ph.D/MS students, some are doing more traditional math-oriented research while others are using more computational and applied approaches. Last year, I gave the plenary public lecture on the history of quantitative finance (Title: Statistics Meets Wall Street) at the Korean Statistics Society (KSS) annual meeting. I am also in charge of MS data science in finance program in our department."

KISS was formed as the current form in 2010 by the efforts of Korean American statisticians and became the organization member of JSM. An organization has to meet several criteria to be qualified as a member organization of JSM. KISS publishes an academic journal "Communications for Statistical Applications and Methods (CSAM)", holds annual conference with Korean Statistics Society(KSS), and recognizes early career awards, students paper awards, etc.

"I have been involved in KISS activities even before KISS became the current form and was nominated and served as an officer and a board member from 2016," says Lee. He will serve as president-elect (2025-2026), president (2027-2028), and past-president (2029-2030).

The ASA announced winners of the 2025 American Statistical Association (ASA) Business and Economic Statistics (B&E) Section Student Paper Awards in January of 2025. One of the students awarded is **Young Hyun Cho**, of Purdue University, for his paper titled "Privacy-preserving dynamic assortment selection."

He will present his paper at the upcoming Joint Statistical Meetings (JSM) in the Topic-Contributed Session, Business and Economic Statistics Student Paper Awards, sponsored by the B&E Section. Each student awardee will receive a cash award.

Business and Economics Statistics Section has awarded Young Hyun Cho, of Purdue University, a JSM student paper award. Students took part in a Join our comprehensive web course led by Dr. McElroy, Senior Time Series Mathematical Statistician at U.S. Census Bureau.

PROGRAM UPDATES:

Graduate, Undergraduate, Actuarial Science, and Statistical Consulting Services

Contributions provided by Professors Jun Xie (Graduate Chair), Qifan Song (Undergraduate Chair), Jianxi Su (Director of Actuarial Science Program), Tadd Colver (Manager of Statistical Consulting Service) and Bruce Craig (Director of Statistical Consulting Service).

GRADUATE STUDENT WORKSHOP

The department hosted its inaugural Graduate Student Workshop on November 21, 2024, organized by the Graduate Student Organization in collaboration with the graduate office. The event featured nine PhD students, each delivering a 30-minute presentation on their research. Topics spanned a wide range of areas, including probability, applied statistics, causal inference, Bayesian conformal inference, large language models, and differential privacy.

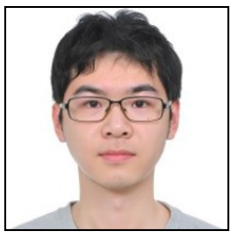
Faculty members attended the sessions and provided evaluations, fostering a dynamic and engaging academic environment. The quality of the presentations was outstanding, closely mirroring the standards of professional statistical conferences.

Two students were recognized with awards based on faculty evaluations:

- First Place: Young Hyun Cho (advised by Jordan Awan and Wei Sun) – $300 prize
- Second Place: Haoze Li (advised by Jun Xie) – $200 prize

Special thanks to Hyunwoo Chung, an officer in the Graduate Student Organization, for coordinating and scheduling the event. The workshop was well received by both students and faculty, offering an excellent platform for scholarly exchange and community building.

Young Hyun Cho)



Haoze Li

UNDERGRADUATE PROGRAM HIGHLIGHTS

New Course Launch: STAT 41800 – Computational Methods in Data Science

Beginning in the 2025–2026 academic year, the department will offer a new course, STAT 41800, designed to introduce essential computational techniques in modern data science. Key topics include:

- Simulation and resampling methods
- Bayesian data analysis
- Applications of large language models (LLMs) in data workflows

Students will explore foundational techniques such as inverse CDF sampling and rejection sampling, and gain practical experience with bootstrapping, cross-validation, and model evaluation. The course emphasizes responsible use of LLMs for tasks like text preprocessing, feature extraction, and leveraging pre-trained models. A capstone project will allow students to apply their knowledge to real-world data science problems.

New Undergraduate Certificate in Biostatistics

In collaboration with Purdue's College of Health and Human Sciences, the department has developed a new Undergraduate Certificate in Biostatistics. The program's learning outcomes include:

- Building a strong foundation in probability and statistical reasoning
- Mastering quantitative techniques for analyzing health science data
- Gaining a comprehensive understanding of epidemiology and clinical research methods
- Acquiring computational skills for data management and algorithm implementation

ACTUARIAL SCIENCE PROGRAM DEVELOPMENTS

Purdue's Actuarial Science Program, jointly administered by the Departments of Statistics and Mathematics, continues to excel as a nationally recognized leader in actuarial education. With approximately 300 undergraduate majors, the program offers a rigorous curriculum that prepares students for careers in risk management, insurance, and data-driven decision-making.

The program is supported by:
Three tenured/tenure-track faculty with research expertise in statistics, economics, and actuarial applications
Three lecturers with strong industry and teaching backgrounds
In Fall 2025, the team will grow with the addition of one new tenure-track faculty member and one new lecturer.

Accolades and Recognitions:

- Center of Actuarial Excellence (CAE) designation from the Society of Actuaries (SOA)
- Silver Level recognition from the Casualty Actuarial Society (CAS) University Recognition Program
- University Earned Credit (UEC) status from the SOA
- To expand access, the program will extend to Purdue Indianapolis, broadening its reach and impact.
- Research and Student Engagement:
- Faculty have secured over five competitive SOA research grants in the past year
- Students have actively participated in national competitions, including:
  - Presenting at the Midwest Actuarial Students Conference
  - Finalist placement in the Munich Re Cup, with a team presenting in Toronto

CAREER OUTCOMES:

Over 80% of graduates secure employment in insurance-related roles, with others pursuing careers in finance, data science, or advanced studies. Purdue alumni hold leadership positions at top firms worldwide.

LOOKING AHEAD:

The program is developing a professional graduate degree that integrates actuarial science, risk management, and advanced data science—positioning Purdue at the forefront of training professionals to manage emerging risks across industries.

Students participated in the 2025 Munich Re Cup, one of the largest actuarial case study competitions in North America.

UPDATES ON STATISTICAL CONSULTING SERVICES

The 2024–2025 academic year marked a period of exciting transformation for the Statistical Consulting Service (SCS).

LEADERSHIP TRANSITION

After more than a decade of dedicated service, CeCe Furtner retired from her role as SCS Manager. Her unwavering support and guidance were instrumental in the growth and success of our consultants. We extend our deepest gratitude for her many contributions.

Stepping into this pivotal role is Tadd Colver (MS 2003), who brings a wealth of experience and organizational insight. Like his predecessor, Tadd will divide his time between managing the SCS and teaching in the department. His fresh perspective and operational expertise are expected to guide the SCS through a time of rapid change and innovation.

NEW LOCATION

The SCS has moved to the 9th floor of the MATH building, marking a significant upgrade in visibility as we now have a meeting room with window! The move includes:

- Offices for both the Director and Manager
- A dedicated consulting room, MATH 946, which will serve as the central hub for client meetings

This consulting room will also honor Dr. George P. McCabe with a commemorative plaque, recognizing his enduring legacy and contributions to the SCS.

TECHNOLOGICAL INNOVATION

Primarily due to the efforts of Dr. Arman Sabbaghi, the SCS has launched its own large language model (LLM) platform to support consultants in preparing meeting agendas, conducting follow-up research, and drafting reports—all while maintaining strict client confidentiality.

This platform is built on an open-weight LLM (currently Microsoft Phi-4) and is enhanced with a custom Knowledge Graph (KG) and Retrieval-Augmented Generation (RAG) system. It incorporates historical consulting data, including applications, meeting notes, and end-of-semester reports. The goal is to shift consultant training toward deeper issues of study design, statistical analysis, and interpretation, while automating routine tasks.

Although still in its early stages, this platform represents a bold step forward and may serve as a model for similar initiatives at other institutions.

ACKNOWLEDGMENTS

The SCS extends heartfelt thanks to the faculty and staff who have made these advancements possible:

- Bruce Craig, Chong Gu, Arman Sabbaghi, Lingsong Zhang, Antik Chakraborty, and Andrew Yarger for their faculty leadership over the past two years
- Tadd Colver and Karla Sicaju for their tireless efforts in keeping operations running smoothly.

Faculty and statisticians from Eli Lilly at the Joint Seminar in May

Purdue Statistics participates in two joint seminars for the 2024-25 academic year

The department participated in two joint seminars over the past year.

In May 2024, a group of faculty visited Eli Lilly and Company's campus in Indianapolis to discuss shared statistical interests, statistical applications in the pharmaceutical industry at Eli Lilly, and other areas for collaboration between departments.

In October 2024, the department welcomed visitors from the Biostatistics Department at Indiana University School of Medicine for our second joint seminar with their department to discuss shared interests including statistical genetics, imaging, and estimation of drug efficacy.

Each seminar featured presentations from members of both departments and had 30+ participants. These meetings led to great discussions and continued collaboration between the departments.

Dr. Pengyue Zhang, Assistant Research Professor in Biostatistics at IUSM, presents at the joint seminar. Photos provided by Drew Yarger.

PURDUE STATISTICS ALUMNI AND FRIENDS RECEPTION

August 3, 2025

Omni Nashville Hotel

250 Rep. John Lewis Way S.

Nashville, TN 37203

Ballroom A

6pm-7:30pm

Join Purdue Statistics as we bring together faculty, students, alumni, friends, and all who are curious to explore the latest advances in data science and celebrate the strength of our program.

Boiler Up!

PURDUE UNIVERSITY®

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