

Pitt Biostatistics and Health Data Science



Greetings Biostatistics & Health Data Science family and friends!

The field of biostatistics has evolved significantly in recent years, especially with the integration of biostatistics and data science becoming increasingly central to our discipline. Reflecting these advancements, our department has been aptly renamed Biostatistics and Health Data Science. This change underscores our commitment to leading data-driven science in public health through innovative methodology, interdisciplinary collaboration and impactful education. As the domain of data science expands, we are dedicated to equipping our graduates with cutting-edge knowledge and skills to make meaningful contributions regionally in Pennsylvania, and around the world. This fall, we are excited to welcome 15 new MS students and 10 new PhD students, bringing our total to 25 matriculated students. These talented individuals bring tremendous energy and positive vibes to our program. We are also pleased to introduce three new faculty members: Drs. Pedro Baldoni, Soumik Purkayastha and Qiong Wu. I extend my sincere thanks to the search committee and everyone involved in recruiting these rising stars who are poised to make significant contributions to our research and teaching efforts.

As we move through the 2024-25 academic year, it is also crucial to acknowledge the achievements of the past year, including faculty and student awards, promotions, exciting updates from our alumni and much more.

We hope this newsletter serves as a bridge between the department and each of you. Please stay connected with us through our social media channels as we look forward to another remarkable year ahead.

Yan Ma, PhD
Professor and Chair



University of
Pittsburgh®

Department of Biostatistics
and Health Data Science
School of Public Health

Department Updates

Ranking

We're thrilled to announce that the Department of Biostatistics and Health Data Science has ranked 17th in the 2024 US News & World Report rankings for best biostatistics programs in schools of public health, with Pitt's School of Public Health ranked 16th. This achievement highlights our commitment to excellence in education and research, fortifying our reputation as a leader in the field. Congratulations to our extraordinary faculty, staff and students, whose dedication and passion drive our success and made this well-deserved recognition possible!

Department Name Change

[Announcement from Pitt Public Health: August 5, 2024](#)

The University of Pittsburgh School of Public Health is changing the name of one of its longstanding departments. The Department of Biostatistics will become the Department of Biostatistics and Health Data Science to reflect the increasing growth of complex data and biotechnology now being employed in the field of public health.

Faculty research in the department—one of four when the school was founded in 1948—initially focused on the health of workers at the many Pittsburgh-area plants and factories. Indeed, the first major study conducted by department investigators compared the health of workers in coke ovens to those elsewhere in the same plants, establishing an excess of lung cancers in the former. With support from the University of Pittsburgh and the School of Public Health, the department has grown into a top-ranked national program.

Building on its rich history, the Department of Biostatistics and Health Data Science will strengthen multidisciplinary efforts around data science with the formation of new collaborations across the University of Pittsburgh and beyond.

"The field of biostatistics has undergone significant changes in recent years, with the integration of biostatistics and data science becoming increasingly important," said Department Chair and Professor Yan Ma, PhD. "The new name better reflects our mission to lead data-driven science in public health with innovative methodology, interdisciplinary collaboration and impactful education." The name change is effective immediately and will be incorporated throughout the school and University in a phased approach over the coming weeks. It will not affect the department's current degree offerings.

"Incorporating health data science into our biostatistics department's name exemplifies our school's focus on precision public health as a key strategic imperative to use data-driven strategies to counter the most urgent and intransigent public health threats," said School of Public Health Dean Maureen Lichtveld, MD, MPH. "As the field of data science grows, we have an obligation to equip our graduates with the most contemporary knowledge and skills so they can serve communities locally, in Pennsylvania and globally."



Meet our New Faculty and Students

Welcome new faculty members

➤➤➤ Pedro Baldoni, assistant professor

Pedro Baldoni, PhD (BIOST '20, University of North Carolina at Chapel Hill) was a postdoctoral researcher in the Smyth Lab at the Walter and Eliza Hall Institute (WEHI) of Medical Research. At WEHI, his research primarily involved analyzing and interpreting bulk and single-cell epigenomic, transcriptomic, and proteomics data. He is passionate about developing new statistical methods and creating efficient bioinformatic tools to aid researchers in data analysis. The Biostatistics and Health Data Science Department attracted Pedro with its rich tradition of pioneering public health methods and extensive interdisciplinary opportunities. Upon joining, he discovered a dynamic and expanding hub of collaboration, supported by the University's renowned reputation for excellence. His research focuses on data-driven approaches, particularly in causal discovery for biomedical data and modeling infectious diseases. He looks forward to integrating his projects with ongoing departmental studies and fostering interdisciplinary partnerships, while contributing to the vibrant academic community at Pitt.



➤➤➤ Soumik Purkayastha, assistant professor

Soumik Purkayastha, PhD (BIOST '24, University of Michigan, School of Public Health) is a native of India and is thrilled to join the department as an assistant professor given the department's distinguished history of contributing to public health research and policy, which was a significant draw for him. During his graduate studies, Soumik worked on causal discovery for biomedical data and modeling infectious diseases. He explains he is eager to continue learning about causality by integrating his research projects with ongoing departmental studies and fostering interdisciplinary partnerships. He is also thrilled to be part of a vibrant community of students, staff and faculty. The warm and welcoming atmosphere he encountered assured him of a smooth transition from graduate student to assistant professor.



➤➤➤ Qiong Wu, assistant professor

Qiong Wu, PhD (STAT'21, University of Maryland, College Park) is a former postdoctoral researcher in the biostatistics program at the University of Pennsylvania and holds a PhD in statistics from the University of Maryland. Her research interests span statistical modeling and inference for high-dimensional and complex structured data (such as neuroimaging and network data), multi-source data integration (including transfer learning and federated learning) in large, distributed research networks (e.g., OHDSI, PEDSnet, and OneFlorida), and causal inference using real-world data (e.g., electronic health records). The supportive atmosphere and rich opportunities for interdisciplinary collaboration in the department are greatly attractive to her. She is enthusiastic about continuing her methodological pursuits driven by leveraging real-world data to address pressing scientific and clinical inquiries, collaborating on ongoing projects within the department, and contributing to the University's research goals.





➤➤➤ Welcome New Students

As we begin a new academic year, we're excited to welcome our newest students to the School of Public Health! They're about to embark on a journey of rigorous coursework, cutting-edge research and hands-on projects, guided by our distinguished faculty.

New MS Students

Alaa Alghwiri	Joseph Armstrong	Ryan Karbon	Tyler Kelly
Grace Luikart	Junlin Liu	Xin Li	Ishta Madan
Quintin Payne	Evan Trump	Mackenzie Wilcox	Benjamin Witowski
Xinrui Xie	Menchun Zhang	Vivian Zhang	

New PhD Students

Anna Barefield	Stephen Glass	Lufeiya Liu	Tianshu Liu
Edwin Lu	Wenzhou Lin	Yumeng Shao	Yuxin Shi
Shiyue Tao	Hao Wang		

»» Celebrating Excellence in Biostatistics and Health Data Science

We are excited to announce and celebrate the outstanding achievements of our students. Their dedication, hard work and innovative research have not only enriched our academic community but also contributed significantly to advancing the field. Congratulations to all the award winners for their remarkable accomplishments and continued pursuit of excellence in biostatistics.

Student Award Winners 2023-2024

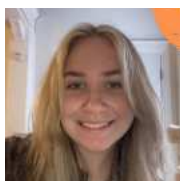
MS



Jamal Adrien
2023 ASA Student Travel Award - Participate in the Diversity Mentorship Program



Nicole Auerbach
Best MS Comprehensive Exam Performance (Theory & Applied)



Bridget Mayrer
-2024 Biostatistics Research Day - Best Master's Poster Award
-2024 Dean's Day Biostatistics Master Award



Tianyuzhou Liang
2024 Outstanding Student Award



Benjamin Panny
2024 Delta Omega Thesis Award



Celeste Picone
-2024 Delta Omega Membership Awards
- Best MS Comprehensive Exam Performance (Applied)



Isha Sahasrabudhe
2024 Delta Omega Membership Awards

PhD



Na Bo
-ASA Health Policy Statistics Section Student Paper Award
-Travel Award for 2024 Statistics in the Age of AI
-Conference Winner of 2024 Health Disparity and Social Justice Poster Competition, University of Pittsburgh
-2024 Biostatistics Research Day - Honorable Mention



Manqi Cai
-2024 Delta Omega Dissertation Award
-2024 Delta Omega Membership
-2024 Dean's Service Award



Yusi Fang
2024 ASA SIE Early Career Award, ASA Section on Statistics in Epidemiology



Penghui Huang
-NESS Student Research Award
-Research Poster Award at ICSA 2023



Danyang Li
-2024 International Biometric Society ENAR Distinguished Student Paper Award
-2023 Best Qualifying Exam Performance Award



Runjia Li
-2024 Biostatistics Research Day - Honorable Mentions
-2024 Outstanding Biostatistics GSR Award



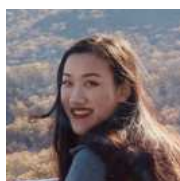
Wenjia Wang
2024 ASA Pittsburgh Chapter Student of the Year



Yueting Wang
2024 Dean's Day Biostatistics Doctoral Award



Xiangning Xue
2024 Outstanding Student Award



Xue Yang
-JSM 2023 Biopharmaceutical Section Poster Award
-2024 Biostatistics Research Day - Best PhD Poster Award
-The 46th Midwest Biopharmaceutical Statistics Workshop, Mir Masson Ali Student Poster Award Winner
-ASA Biopharmaceutical Section 2023-2024 Student Paper Competition, winner of Honorable Mention



Lang Zeng
2024 Outstanding Biostatistics TA Award



Gehui Zhang
-2024 ASA SBSS (Bayesian Statistical Sciences Section) Student Paper Award
-2024 Biostatistics Research Day - Best Oral Presentation Award



Xueping Zhou
2024 Outstanding Student Award
Honorable Mention

Graduation

This fall, we marked a significant milestone as a new cohort of talented MS and PhD graduates joined the ranks of biostatistics professionals. Their dedication, perseverance and passion for the field have earned them this outstanding achievement.

As they embark on the next chapter of their careers, these individuals will make a profound impact on health care, research and beyond. Their skills and knowledge will drive innovation, improve outcomes and shape the future of biostatistics.

We take pride in celebrating their accomplishments and wish them continued success, innovation and fulfillment in their future endeavors.

➤➤➤ 2024 Selected Student Job Placement Examples

MS Students:

- **Ian Jacobs**; PhD Student, Epidemiology, University of Pittsburgh | Advisor: Ada Youk
- **Tianyuzhou Liang**; PhD student, University of Pittsburgh | Advisor: Jiebiao Wang
- **Bridget Mayrer**; Data Scientist, UPMC | Advisor: Jenna Carlson
- **Dominika Oliver**; Senior Data Analyst, ReefPoint Group | Advisor: Jenna Carlson
- **Benjamin Panny**; Intelligent Systems Program (ISP), University of Pittsburgh, PhD Program | Advisor: Chaeryon Kang
- **Madelyn Peterson**; Healthcare Data Analyst, Southwest Michigan Behavioral Health | Advisor: Jenna Carlson
- **Celest Picone**; Data Scientist, University of Pittsburgh-Physical Medicine and Rehabilitation | Advisor: Jeanine Buchanich
- **Michele Sun**; PhD student, University of Chicago | Advisor: Jiebiao Wang
- **Rachel Witt**; Data Coordinator & Analyst, UPMC | Advisor: Jenna Carlson

PhD Students:

- **Manqi Cai**; Mathematical Statistician, FDA | Advisor: Jiebiao Wang
- **Runjia Li**; Research Advisor – Statistics, Eli Lilly | Advisor: Joyce Chang
- **Xiangning Xue**; Data Analyst, American Express, New York | Advisor: George Tseng
- **Gehui Zhang**; Assistant Professor, Southwest Petroleum University | Advisors: Robert Krafty and Gong Tang



We are pleased to announce the following new appointments and promotions in our school:

Andriy Bandos

- MS Program Director, Department of Biostatistics and Health Data Science. Andriy Bandos has been appointed director of the MS program. He will oversee the program's curriculum and operations, ensuring that our students receive a high-quality education.

Jeanine Buchanich

- Vice Dean, School of Public Health. Jeanine Buchanich has been appointed vice dean for the school of public health. In this role, she oversees development and implementation of the strategic goals and is responsible for ensuring the strong operations and day-to-day functioning of the school.

Reena, Cecchini

- Vice Chair for Practice, Department of Biostatistics and Health Data Science. Reena Cecchini has been appointed vice chair for practice. She will work to advance the department's practice-based initiatives and foster collaborations with external partners.

Ying Ding

- Professor, Department of Biostatistics & Health Data Science and Associate Dean for Graduate Student Affairs, School of Public Health. Ying Ding has been promoted to full professor and appointed associate dean for graduate academic affairs. She will provide leadership and oversight to our graduate programs, ensuring academic excellence and student success.

Lu Tang

- Vice Chair for Education, Department of Biostatistics & Health Data Science. Lu Tang has been appointed vice chair for education. She will work to advance the school's educational mission, promoting innovation and excellence in teaching and learning.

Ada Youk

- Associate Dean for Undergraduate Affairs and Director of the BSPH Program, School of Public Health. Ada Youk has been appointed associate dean for undergraduate affairs and director of the Bachelor of Science in Public Health degree program. She will provide leadership and guidance to our undergraduate students and programs, ensuring a high-quality educational experience.

Guan Yu

- PhD Program Director, Department of Biostatistics and Health Data Science. Guan Yu has been appointed director of the PhD program. He will provide guidance and support to our PhD students, ensuring a rigorous and rewarding academic experience.

Faculty & Staff Recognition

We are grateful to recognize the dedication and commitment of our faculty and staff who have reached significant milestones in their service to the department, demonstrating their passion for education, research and public health. Their years of service have been marked by countless contributions to our academic community, including innovative research, exceptional teaching and service.

Faculty with 20+ years of service

- **Gong Tang**; professor
- **George Tseng**; professor
- **Ada Youk**; associate professor, associate dean for undergraduate academic affairs

Faculty with 10+ years of service

- **Andriy Bandos**; associate professor, director of MS program
- **Hanna Bandos**; research assistant professor
- **Jeanine Buchanich**; associate professor, vice dean
- **Reena Cecchini**; research assistant professor, vice chair for practice
- **Ying Ding**; professor, associate dean for graduate academic affairs
- **Daniel Normolle**; associate professor
- **Yongseok Park**; assistant professor
- **Hong Wang**; research associate professor
- **Greg Yothers**; research professor

Staff with 10+ years of service

- **Caroline Deasy**; personnel administrator
- **Allen Lin**; grants administrator



From left to right
George Tseng | Ada Youk | Gong Tang



From left to right
**Ying Ding | Jeanine Buchanich |
Andriy Bandos | Hong Wang**

Faculty Publications

Our faculty continues to drive innovation in biostatistics and health data science through research.

Selective publications include:

- Zuley ML, **Bandos AI**, Duffy SW, Logue D, Bhargava R, McAuliffe PF, Brufsky AM, Nishikawa RM. Breast Cancer Screening Interval: Effect on Rate of Late-Stage Disease at Diagnosis and Overall Survival. *Journal of Clinical Oncology*. 2024 Aug 21;JCO-24
- Rastogi P, **Bandos Hanna**, Lucas PC, van 't Veer L, Wei JPJ, Geyer CE, Fehrenbacher L, Graham M, Chia SKL, Brufsky A, Walshe JM, Soori GS, Dakhil SR, Paik S, Swain SM, Menicucci A, Audeh MW, Wolmark N, Mamounas EP. Utility of the 70-gene MammaPrint assay for prediction of benefit from extended letrozole therapy (ELT) in the NRG Oncology/NSABP B-42 trial. *Journal of Clinical Oncology*,
- **Buchanich Jeanine**, Newcomb CW, Washington TL, Foster CS, Sobrin L, Thorne JE, Jabs DA, Suhler EB, Rosenbaum JT, Sen HN, Levy-Clarke GA, Nussenblatt RB, Bhatt NP, Lowder CY, Goldstein DA, Leiderman YI, Acharya NR, Holand GN, Read RW, Dunn JP, Dreger KA, Artornsombudh P, Begum HA, Fitzgerald TD, Kothari S, Paval AR, Daniel E, Gangaputra SS, Kacmaz RO, Liesegan TL, Pujari SS, Khachatryan N, Maghsoudlou A, Suga HK, Helzlsouer KJ, Pak CM, Kempen JH for the Systemic Immunosuppressive Therapy for Eye Diseases (SITE) Cohort Study Research Group. Use of Immunosuppression and Subsequent Cancer Incidence: Cohort Study. *British Medical Journal Oncology*; 2023; doi: 10.1136/bmjonc-2023-000037.
- Ganz PA, **Cecchini Reena**, White JR, Vicini F, Julian TB, Arthur DW, Rabinovitch R, Kuske RR, Parda DS, Scheier M, Winter KA, Paik S, Kuerer M, Vallow L, Pierce LJ Mamounas EP, Costantino JP, McCormick B, Curran, Jr. WJ, Wolmark N. Quality-of-Life outcomes from NRG/NSABP B-39/RTOG0413: whole-breast irradiation vs accelerated partial-breast irradiation after breast conserving surgery. *JNCI*. 2024 Sep 10:djae219. doi: 0.1093/jnci/djae219. Online ahead of print.
- Hu H, Wang X, Feng S, Xu Z, Liu J, Heidrich-O'Hare E, Chen Y, Yue M, Zeng L, Rong Z, Chen T, Billiar T, Ding Y, Huang H, Duerr RH, **Chen Wei**. A unified model-based framework for doublet or multiplet detection in single-cell multiomics data. *Nature communications*. 2024 Jul 2;15(1):5562. doi: 10.1038/s41467-024-49448-x. PubMed PMID: 38956023; PubMed Central PMCID: PMC11220103.
- **Deek Rebecca**, Ma S, Lewis J, & Li H. (2024). Statistical and computational methods for integrating microbiome, host genomics, and metabolomics data. *eLife*, 13, e88956. || <https://doi.org/10.7554/eLife.88956>
- Bo N+, Wei Y+, Zeng L, Kang C, **Ding Ying***. (2024). A Meta-Learner Framework to Estimate Individualized Treatment Effects for Survival Outcomes (An earlier version won the 2022 JSM LiDS section student paper award). *Journal of Data Science*. <https://doi.org/10.6339/24-JDS1119>
- Douville, C., Lahouel, K., Kuo, A., **Grant, Haley.**, Avigdor, B. E., Curtis, S. D., Summers, M., Cohen, J. D., Wang, Y., Mattox, A., Dudley, J., Dobbyn, L., Popoli, M., Ptak, J., Nehme, N., Silliman, N., Blair, C., Romans, K., Thoburn, C., Tomasetti, C. (2024). Machine learning to detect the Sines of cancer. *Science Translational Medicine*, 16(731). <https://doi.org/10.1126/scitranslmed.adi3883>
- **Kang Chaeryon***, Zhang D, Schuster J, Kogan JN, Nikolajski C, Reynolds III CF. Bias-corrected and doubly robust inference for the three-level longitudinal cluster-randomized trials with missing continuous outcomes and small number of clusters: simulation study and application to a study for adults with serious mental illnesses. *Contemporary Clinical Trials Communications*. 2023 July; 35 :101194. PubMed PMID: 37588771.
- Zhang Y, Tang L, Huang Y, **Ma Yan***. Smart data augmentation: One equation is all you need. * Corresponding author; *Stat. Anal. Data Min.: ASA Data Sci. J.*17(2024), e11672.
- Castanha, Priscila MS, Patrick J. McEnaney, **Yongseok Park**, Anthea Bouwer, Elton JF Chaves, Roberto D. Lins, Nicholas G. Paciaroni et al. "Identification and characterization of a nonbiological small-molecular mimic of a Zika virus conformational neutralizing epitope." *Proceedings of the National Academy of Sciences* 121, no. 21 (2024): e2312755121.

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- Fu, H., **Tang, Lu.**, Rosen, O., Hipwell, A.E., Huppert, T., and Krafty, R.T. (2024). Covariate-guided Bayesian mixture of spline experts for the analysis of multivariate high-density longitudinal data. *Biostatistics*, kxad034.
- Yujia Li[^], Peng Liu[^], Wenjia Wang[^], Wei Zong, Yusi Fang, Zhao Ren, Lu Tang, Juan Celedon, Steffi Oesterreich, **George C. Tseng***. (2024) Outcome-Guided Disease Subtyping by Generative Model and Weighted Joint Likelihood in Transcriptomic Applications. *Annals of Applied Statistics*. Accepted.
- Mukherjee A, Epperly MW, Fisher R, Hou W, Shields D, Saiful Huq M, Pifer PM, Mulherkar R, Wilhite TJ, **Wang Hong**, Wipf P, Greenberger JS. Inhibition of tyrosine kinase Fgr prevents radiation-induced pulmonary fibrosis (RIPF). *Cell Death Discov.* 2023 Jul 17;9(1):252. doi: 10.1038/s41420-023-01538-3. PMID: 37460469; PMCID: PMC10352363.
- Huang P, Cai M, Lu X, McKennan C, **Wang Jiebiao**. Accurate estimation of rare cell type fractions from tissue omics data via hierarchical deconvolution. *Ann. Appl. Stat.* 2024 Jun;18(2): 1178-1194. doi: 10.1214/23-AOAS1829. || 2023/2-2027/11 || R01AG080590 (Statistical methods for population-level cell-type-specific analyses of tissue omics data for Alzheimer's disease) || NIH, Contact PI
- Geyer, Charles E Jr, **Yothers Greg**, et al. "Long-Term Follow-Up of the Anthracyclines in Early Breast Cancer Trials (USOR 06-090, NSABP B-46-I/USOR 07132, and NSABP B-49 [NRG Oncology])." *Journal of clinical oncology : official journal of the American Society of Clinical Oncology* vol. 42,12 (2024): 1344-1349. doi:10.1200/JCO.23.01428
- Estock J, Schlegel C, Shinall MC Jr, Varley PR, **YOUK ADA**, Hoehn R, Hall DE. Interpreting the Risk Analysis Index of frailty in the context of surgical oncology. *J Surg Oncol*, 2023;127:1062–1070 2023
- Sheng, H., & **Yu, Guan**. (2023). TNN: A transfer learning classifier based on weighted nearest neighbors. *Journal of Multivariate Analysis*, 193, 105126.

Department Activity Highlights

Research Day

Biostatistics Research Day 2024 was a resounding success, giving a dynamic platform for graduate students to present their research, receive valuable feedback, and build connections with faculty and researchers.



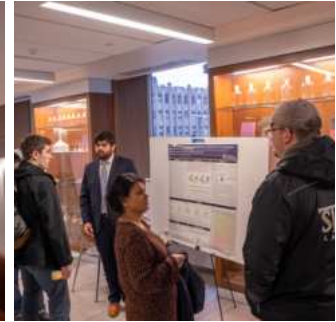
Gehui Zhang
(BIOST PhD Student)



Bridget Mayrer
(BIOST MS Student)



Presentation room



Poster Session

StatGen Conference - American Statistical Association (ASA) Section on Statistics in Genomics and Genetics (SSGG)

StatGen 2024, held from May 1-3 in Pittsburgh, was a great success, marking the inaugural section conference of the American Statistical Association (ASA) Section on Statistics in Genomics and Genetics (SSGG). Organized by ASA SSGG and the Department of Biostatistics and Health Data Science, with support from three other departments at Pitt, Carnegie Mellon University, and local industry, the conference brought together leading experts in the field and highlighted the importance of interdisciplinary collaboration and groundbreaking research in genomics and genetics.

Keynote speakers:

- **Gonçalo Abecasis:** vice president and chief genomics and data science officer, Regeneron; Felix E. Moore Collegiate Professor of Biostatistics, University of Michigan School of Public Health (on leave)
- **Rafael Irizarry:** professor of applied statistics, Harvard University and Dana-Farber Cancer Institute; chair of the Department of Data Sciences, Dana-Farber Cancer Institute; professor of biostatistics, Harvard T.H. Chan School of Public Health
- **Xihong Lin:** professor and former chair, Department of Biostatistics; coordinating director, Program in Quantitative Genomics, Harvard T. H. Chan School of Public Health; professor, Department of Statistics, faculty, Arts and Sciences, Harvard University; associate member, Broad Institute of MIT and Harvard
- **Kathryn Roeder:** UPMC professor of statistics and life sciences, Departments of Statistics & Data Science and Computational Biology, Carnegie Mellon University



Rafael Irizarry
Keynote Speaker



From Left to Right
George Tseng (BIOST faculty)
Maureen Lichtveld (Pitt Public Health Dean)
Wei Chen (BIOST faculty)

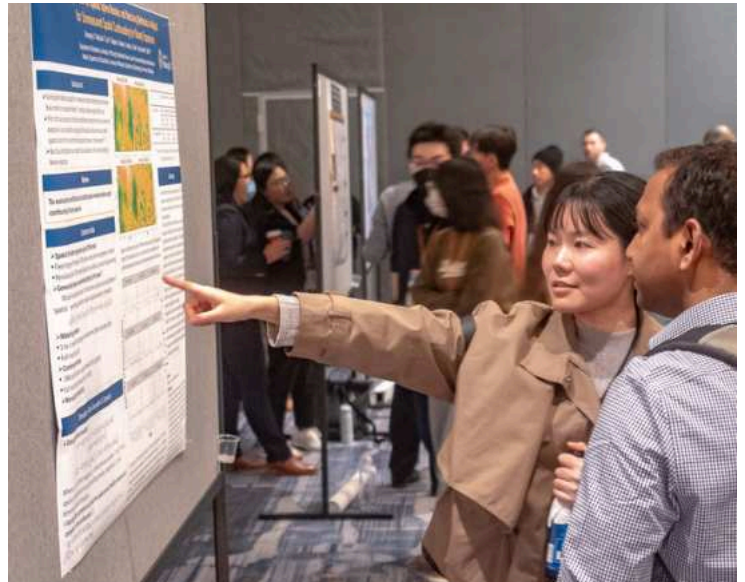
The Biostatistics and Health Data Science Department had a successful showing at ENAR 2024 in Baltimore, MD. Our booth attracted significant interest, providing a platform for networking and showcasing our research. Many of our students gave impressive poster presentations, highlighting their groundbreaking work, while faculty members delivered engaging presentations, underscoring our department's commitment to excellence in biostatistics. The event was a success, enhancing our visibility and valuable connections within the biostatistics community.

Contributors:

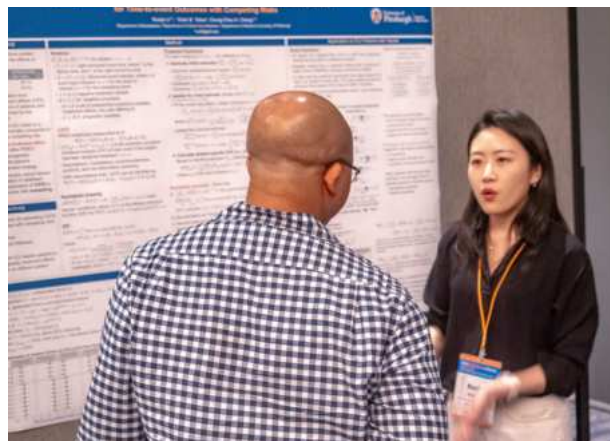
- **Rick Chang, PhD Student**; poster presentation - High-Dimensional Causal Mediation Analysis by Partial Sum Statistic and Sample Splitting Strategy in Imaging Genetics Study
- **Ying Ding, Professor**; oral presentation - tdCoxSNN: Dynamic Prediction using Time-Dependent Cox Survival Neural Network
- **Jinhong Li, PhD Student**; poster presentation - Fusion Learning of Heterogeneous Treatment Effect Using Distributed Data | Advisor: Lu Tang
- **Molin Yue, PhD Student**; poster presentation - Multi-Omics Intermediate Fusion Enable Digital White Blood Cells Count Prediction | Advisors: Jiebiao Wang, Wei Chen
- **Xue Yang, PhD Student**; oral presentation - GO-SMART: Generalized Outcome-Adaptive Sequential Multiple Assignment Randomized Trial | Advisors: Yu Cheng, Abdus Wahed
- **Gehui Zhang, PhD Student**; poster presentation - Stochastic Volatility under Informative Missingness | Advisors: Robert Krafty, Gong Tang



From left to right:
Helen Chen (BIOST staff)
Calvin Dziewulski (BIOST staff)



Danyang Li (BIOST PhD student)
presents her poster at ENAR 2024



Runjia Li (BIOST PhD student)
presents her poster at ENAR 2024

➤➤➤ Joint Statistical Meetings (JSM)

The Biostatistics and Health Data Science Department had a great presence at JSM 2024, showing our department's excellence in the field of biostatistics research and education. Our faculty and students delivered outstanding oral and poster presentations, highlighting their groundbreaking work and contributing to the advancement of biostatistical methods. The event provided a valuable platform for networking, growing connections, and enhancing our department's visibility within the biostatistics community.

Contributors:

- **Na Bo, PhD Student**; oral presentation - A meta-learner-based framework to analyze treatment heterogeneity in survival outcomes: application to pediatric asthma care under COVID-19 disruption | Advisor: Ying Ding
- **Rebecca Deek, Professor**; oral presentation - A Copula Model Framework for Estimating Microbial Covariation Networks
- **Ying Ding, Professor**; oral presentation - Meta-Learners to Estimate Individualized Treatment Effects of AREDS2 on Delaying AMD Progression
- **Yusi Fang, PhD Student**; oral presentation - Adaptive Fisher's Method using Weakly Geometric Grid for Combining P-Values, with a COVID-19 Surveillance Application | Advisors: George Tseng, Zhao Ren
- **Xuelin Gu, PhD Student**; oral presentation - Nonparametric Estimators for A Binary Outcome Under A Monotonicity Restriction | Advisors: Guan Yu, Gong Tang
- **Haoran Hu, PhD Student**; oral presentation - A unified statistical framework for doublet detection in single-cell multi-omics data
- **Jiahe Li, PhD Student**; oral presentation - A Supplemental EM Algorithm for Integrated Analysis of Data with Nonresponse | Advisor: Gong Tang
- **Jinhong Li, PhD Student**; poster presentation - Transfer Learning with Mismatched Covariates | Advisors: Lu Tang, Guan Yu
- **Runjia Li, PhD Student**; oral & poster presentation - Estimating Average Treatment Effects for Time-to-Event Outcomes with Instrumental Variables: A Doubly Robust Approach | Advisor: Joyce Chang
- **Jiebiao Wang, Professor**; oral presentation - BLEND: Bayesian Cellular Deconvolution with Reference Selection
- **Wenjia Wang, PhD Student**; oral presentation - IFDlong: an isoform fusion detector on long-read RNA-seq data | Advisor: George Tseng
- **Yueting Wang, PhD Student**; poster presentation - A Bayesian Finite Mixture Model Approach for Clustering Mixed-type Variables and Censored Biomarkers | Advisor: Joyce Chang
- **Xue Yang, PhD Student**; oral presentation - GO-SMART: Generalized Outcome-Adaptive Sequential Multiple Assignment Randomized Trial | Advisors: Yu Cheng, Abdus Wahed
- **Lang Zeng, PhD Student**; oral presentation - Mini-Batch Stochastic Gradient Descent for Cox Regression and Neural Network: Theoretical Foundation and Practice Guidance | Advisor: Ying Ding



From left to right:

Na Bo | Jinhong Li | Xue Yang | Guan Yu



Haoran Hu (BIOST PhD Student)
presents his oral presentation at JSM 2024

»»» Ice Cream Social

The department hosted a fun and successful ice cream social last fall, bringing together students, faculty and staff for an afternoon of socialization and sweet treats. Millie's Ice Cream provided a variety of flavors, and attendees enjoyed games and conversation in a relaxed setting. The event offered a welcome break from academic pursuits and fostered a sense of community within the department.



»»» Holiday Potluck

The department celebrated last year's holiday season with a festive potluck. Students, faculty, and staff contributed a diverse variety of dishes, creating a bountiful spread that showcased the department's culinary talents. The event provided a wonderful opportunity for attendees to connect with one another outside of the academic setting, giving a sense of camaraderie and community. The department is grateful to all who participated and contributed to the event's success.



»»» New Student Study Room

We are excited to announce the opening of our new student study room (A724D) on the 7th floor of the Pitt Public Health building! This versatile space offers small, private offices that students can reserve for interviews and silent work, as well as a large collaborative area with tables for group study and projects. This new resource is designed to enhance student study experience and support your academic success. We encourage all students to take advantage of this fantastic new space.



Pitt Biostatistics & Health Data Science - Alumni Network

We're happy to share some updates from our recent events and highlight the growth and achievements of our vibrant alumni network.

In March, the Pittsburgh Biostatistics Alumni Network had a productive meeting at ENAR 2024, where we reconnected with fellow professionals and discussed the latest developments in our field. It was wonderful to see so many familiar faces and meet new ones.

In early August, we hosted our mixer at the JSM conference, which was a huge success! We're grateful to everyone who joined to celebrate with our faculty, students, and alumni. A special thank you goes out to Wenzhu Mowrey, PhD (BIOST '12) and Bedda Rosario, PhD (BIOST '08) who work tirelessly behind the scenes to make the event and the network a huge success. It was fantastic to see so many of our alumni in attendance.

We're grateful for the opportunity to bring our community together and look forward to many more celebrations to come! If you're interested in getting involved with our alumni network, look for us at conferences and please don't hesitate to reach out.

JSM Reunion



Chris Barker, MS (BIOST '80) visits dept booth at JSM

ENAR Reunion



Alumni Spotlight

Chris Barker, MS (BIOST '80) - From Academia to Industry: Chris Barker's Journey in Statistics and Public Health

Chris Barker, MS (BIOST '80) emphasizes the value of his experiences in graduate school, particularly at the University of Pittsburgh. "I think that's kind of where I thrive," he says. "Being able to interpret complex statistical models and communicate them to non-technical stakeholders is a big thing that I think employers are looking for." His areas of expertise lie in collaborating with researchers to design and analyze studies, particularly in the fields of medicine and public health, and developing and implementing statistical models to analyze data.

After graduating from the University of Colorado with an undergraduate degree in economics, Barker decided to pursue a master's degree in economics at Northwestern University. He found that the program was more math-intensive than he had anticipated, the most difficult course being statistics. "There were hours and hours of studying, and I did not enjoy economics," he shares. A colleague suggested that he investigate a degree in public health, something he had never heard of before. He searched for schools of public health and selected the University of Pittsburgh because he grew up in the suburbs of Philadelphia.

"I went through the catalog and they talked about jobs, which was the big problem I had with economics - I couldn't figure out what kind of job I would ever do," he recalls. Barker was impressed by the School of Public Health faculty's relationships with organizations such as the National Institutes of Health and the National Center for Health Statistics (NCHS), knowing that would mean he'd have opportunities to work with similar organizations. The School of Public Health seemed like a good fit – more job oriented, applied. The priority Pitt placed on students getting jobs after graduation led him to pack his bags, hop in his car and start driving. The trip itself turned out to be an adventure since his car broke down and he had to arrange to have it towed to Pittsburgh.

He got there eventually, though, and upon enrolling at Pitt, he originally pursued a program in health administration. Then, at the suggestion of one of the faculty, Carol Redmond, he applied and was selected for a summer internship at NCHS working with survey statisticians. When he got back to campus in the fall, Barker found a note in his mailbox requesting he pay a visit to Redmond. When he did, he learned that she was his new advisor, at least temporarily, as his original advisor was no longer with the University. Redmond also proposed a new arrangement for funding: working with her and the cancer clinical trials group the National Surgical Adjuvant Breast and Bowel Project (NSABP). From that moment in Redmond's office, Barker has ever since worked on clinical trials, often in oncology and pharmaceutical economics with drugs such as Herceptin for breast cancer, Xeloda for colon cancer and Oncotype DX, a genomic diagnostic for breast cancer.

While working on the NSABP, Barker developed skills in FORTRAN and SPSS (at the time) programming and data analysis. He was later tasked with visiting the NSABP office as part of the collaboration between Genentech, his then employer, and NSABP for jointly-conducted clinical trials for Herceptin.



publichealth.pitt.edu/news/academia-industry-chris-barkers-journey-statistics-and-public-health

Xinjun Wang, PhD (BIOST '22) treads path from student to faculty member

Xinjun Wang (PhD, BIOST '22) found his groove developing new statistical models for single-cell multi-omics data during graduate studies at the University of Pittsburgh.

Now, Wang continues to work in this vein as an assistant attending biostatistician in Memorial Sloan Kettering Cancer Center's Department of Epidemiology and Biostatistics—a position to which he was specifically recruited.

“The department recruited me because of my experience with single-cell multi-omics, making it a good fit,” he said. While at Pitt, Wang worked with Wei Chen, PhD, professor of pediatrics, School of Medicine, and of biostatistics and human genetics, School of Public Health, and Ying Ding, PhD, professor of biostatistics and health data science. At Pitt, Xinjun worked with Drs. Wei Chen and Ying Ding, focusing on developing new statistical methods for single-cell multi-omics data.

He is grateful not only for the solid foundation that a Pitt education contributed to his future scientific career, but also for the support he received outside the classroom.

“I graduated in June, but I didn't start my job until late August,” he recalled. “I had surgery and my second child was born that summer, so there was a lot going on. We had to relocate, and having my parents' support during this time was invaluable.” Wang and his wife were in the same biostatistics program at Pitt and graduated together. “It's not common for students to have kids, especially in such a demanding program. But the University's support made it possible. The insurance was excellent, covering all our medical needs, including surgeries and our child's health care. We never had to worry about medical bills,” he said.

Housing was another area where the University provided support. “We lived in a community called Sheridan, just off campus. It's a great option for students, costing around \$300 to \$500 per month. You don't own the land, but you're like a shareholder. It's very affordable and provides more freedom and choice in living situations,” he noted.

Despite the demands of his academic work, Wang found time to relax and build a supportive community. “During the first two or three years, before we had kids, a group of us would play cards and board games on Friday afternoons. Later, we would cook meals together and talk about things unrelated to our studies. It was important to have this support system,” he said.

Wang also appreciated the environment and facilities at the University of Pittsburgh. “Pittsburgh has everything you need without being overwhelming. The campus is great, and the University's resources, like the insurance and proximity to good hospitals, are significant strengths,” he said. He used the Pittsburgh environment as a reference point when job hunting, ensuring that potential locations had amenities like Costco and Whole Foods.



publichealth.pitt.edu/news/wang-treads-path-student-faculty-member

In Memorium

The Biostatistics and Health Data Science community is mourning the loss of two esteemed members: Professor Emeritus Gary Marsh and Professor Emeritus Howard E. Rockette. Both individuals were dedicated faculty members who made significant contributions to the field of biostatistics and epidemiology, leaving behind a lasting legacy.

Gary Marsh, PhD

Jan. 27, 1952 - Oct. 25, 2023

[Announcement from Pitt Public Health: October 30, 2023](#)



Professor Emeritus Gary Marsh was a dedicated faculty member at Pitt Public Health for more than 40 years and founding director of the school's Center for Occupational Biostatistics and Epidemiology.

He was also a distinguished Pitt alumnus.

Graduating with honors, Marsh earned a BS in mathematics from the University of Pittsburgh in 1973, followed by an MS and PhD in biostatistics from Pitt Public Health in 1974 and 1977, respectively. He joined the faculty of the Department of Biostatistics in 1978, where he served until his 2020 retirement. In addition, Marsh served as a senior principal health scientist at Stantec ChemRisk beginning in 2015.

He directed occupational epidemiologic studies to investigate the long-term health effects of exposure to such agents as asbestos, man-made mineral fibers, cosmetic tal, formaldehyde, acrylamide, acrylonitrile, arsenic, chloroprene, styrene, vinyl chloride, tungsten carbide with cobalt binder, petrochemicals, aromatic amines, perchloroethylene and pharmaceuticals. He also conducted environmental epidemiologic studies of communities exposed to industrial pollutants or to hazardous-waste site materials and was involved in methodological research, longitudinal data analysis and quantitative risk assessment.

Marsh authored more than 300 publications in the areas of biostatistics, occupational and environmental epidemiology, quantitative risk assessment, statistical computing and health services evaluation. He was the senior author of the computer software, OCMAP (Occupational Cohort Mortality Analysis Program), which is used as a standard analytic tool by numerous institutions involved in occupational health research, and RACER (Rapid Assessment and Characterization of Environmental Risks). He also developed the original Mortality and Population Data System, a repository and retrieval system for National Center for Health Statistics and U.S.

Census Bureau data. Marsh served as a thesis and dissertation advisor and committee member for numerous students over the years.

A fellow of the American College of Epidemiology and member of several organizations in statistics and epidemiology, he was honored by Pitt Public Health as one of 50 outstanding contributors in the field of public health in 1998 at the 50th anniversary of the school.

Howard E. Rockette, PhD

Feb. 6, 1944 - March 23, 2024



[Announcement from Pitt Public Health: March 30, 2024](#)

Professor Emeritus Howard E. Rockette was a faculty member in the Department of Biostatistics for more than 50 years and served as department chair from 1996 to 2009. As chair, he helped to enhance the department's contributions in occupational and environmental risk and randomized clinical trials.

Rockette was a fellow in the American Statistical Association

(ASA) and named Statistician of the Year by the Pittsburgh chapter of the ASA in 1997. He was an author on more than 250 scientific papers focusing on environmental and occupational exposures, imaging systems development, ear infection treatment in children and rheumatological diseases. Among his many research interests, he studied the application and development of statistical methodology in clinical trials, epidemiological studies, evaluation of diagnostic imaging systems, and treatment and etiology of otitis media.

He advised more than 40 graduate students and was awarded

Outstanding Teacher of the Year in 2001. Of his many career accomplishments, he believed his students were his greatest legacy.

He earned a PhD in statistics from Pennsylvania State University in 1972. At Pitt, he served as codirector of the National Surgical Adjuvant Breast and Bowel Project's biostatistical center and led more than a dozen epidemiological studies in occupational and environmental health as principal investigator. In addition, Rockette served as a consultant for the U.S. Environmental Protection Agency, the Occupational Safety and Health Administration and the Office of the Surgeon General.

ENVIRONMENT



2024

GRANT FUNDING & ALLOCATION

\$16.1m
Grant Funding

67
Grants Submitted

21
Grants Awarded

EDUCATION, GRADUATION, ENROLLMENT

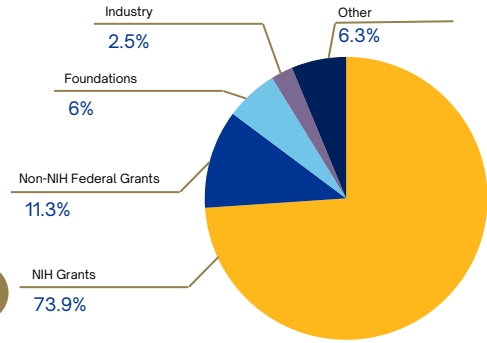
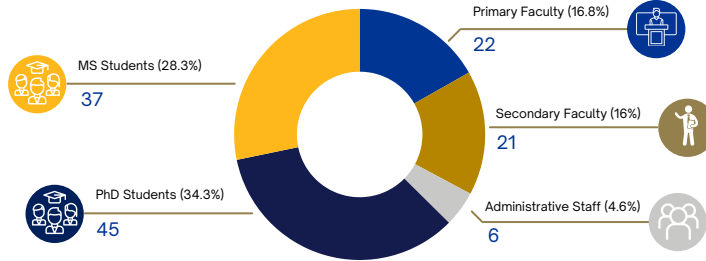
15	74	10	3
MS Degrees Metriculated	Average Enrollment	PhD Degrees Metriculated	PhD Degrees Conferred
12			
MS Degrees Conferred			

EDUCATION PROGRAMS

- MS in Biostatistics**
- MS-HDS** Health Data Science
- MS-SCG** Statistical and Computational Genomics
- PhD in Biostatistics**

DEPARTMENT AT A GLANCE

Meet our vibrant community dedicated to shaping the future of biostatistics and health data science. Together, we thrive in a supportive environment that fosters growth, innovation, and collaboration.



DEPARTMENT PUBLICATIONS

118

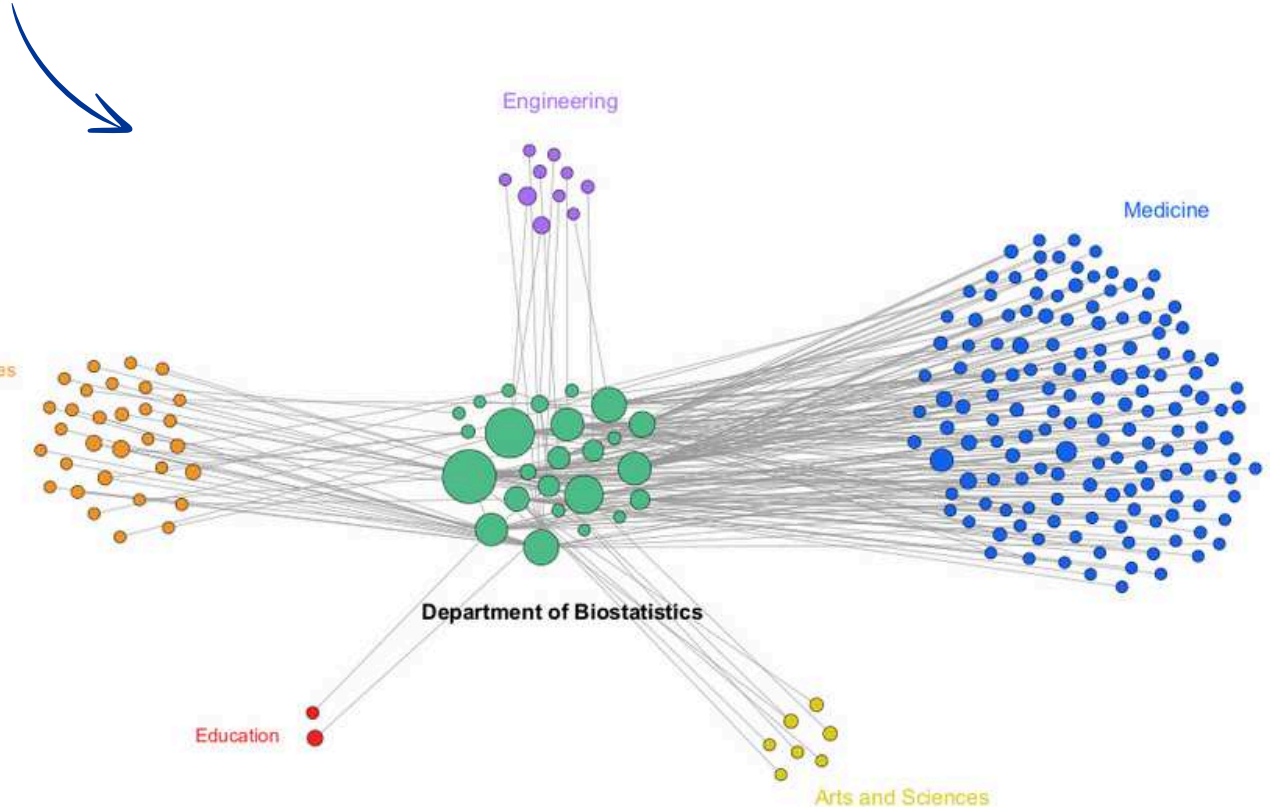


STUDENT AWARDS

This year, our students received **33** awards from organizations and events like the ASA, ENAR, JSM, etc..

MAPPING COLLABORATIVE VENTURES

From FY2020 to FY2024 (As of February), pictured is a web of research showcasing collaborations between our department faculty members and various institutions and schools within the University.



DEPARTMENT AT A GLANCE

Find us on Social Media
@PittBiostatHealth
DataScience

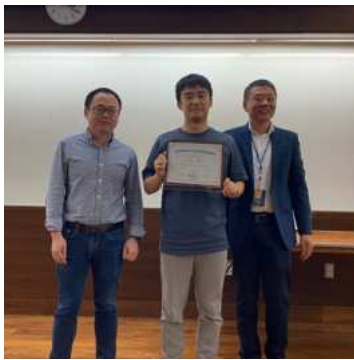
Student Award Ceremony



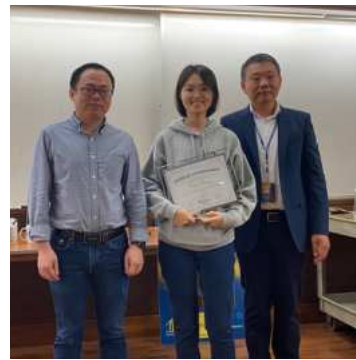
MS and PhD student awardees



Penghui Huang
PhD student



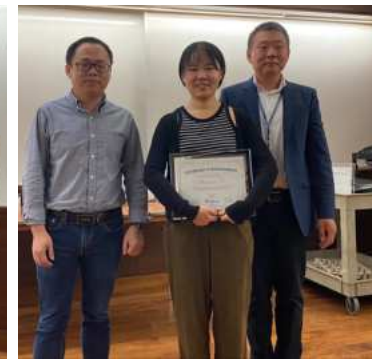
Lang Zeng
PhD student



Gehui Zhang
PhD student

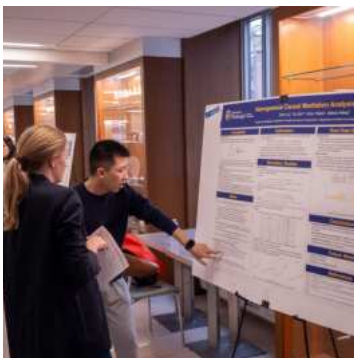


Isha Sahasrabudhe
MS student



Danyang Li
PhD student

Research Day

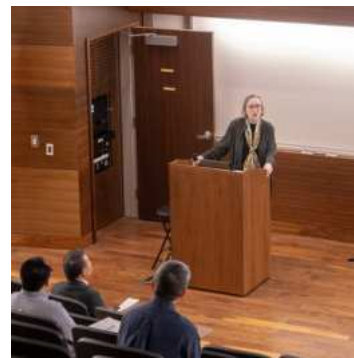


Haley Grant
professor

Chen Liu
PhD student



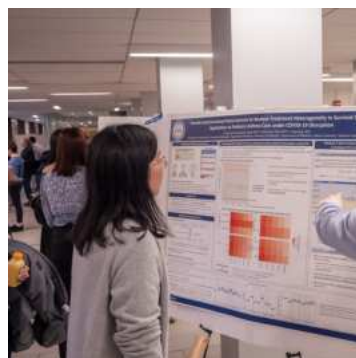
Haoran Hu
PhD student



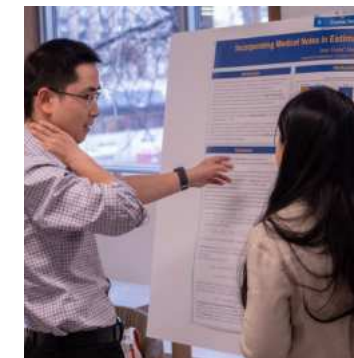
Amanda Golbeck
keynote speaker



Jiaqian Liu
PhD student



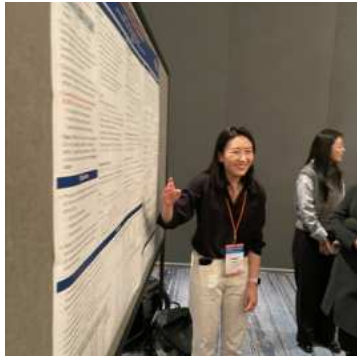
Na Bo
PhD student



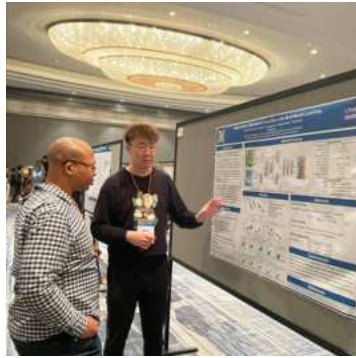
Jiebiao Wang
professor

Crystal Zang
PhD student

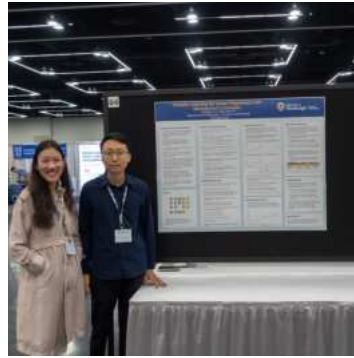
ENAR & JSM Posters



Runjia Li
PhD student

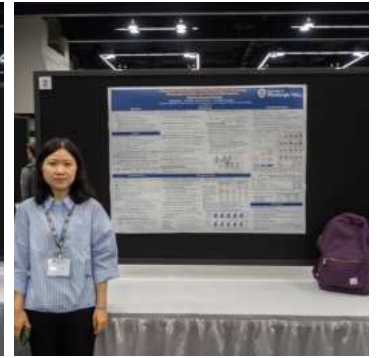


Molin Yue
PhD student



Xue Yang
PhD student

Jinhong Li
PhD student



Yueting Wang
PhD student

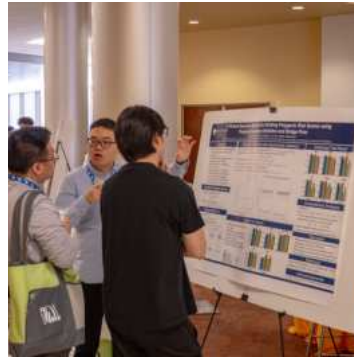
Statgen 2024



Katherine Roeder
keynote speaker



Maureen Lichtveld
Dean, School of Public Health



Poster Session



Jiebiao Wang
professor

Alumni Visits



From left to right:
Chris Barker, MS (BIOST '80)
Yan Ma (chair)



From left to right:
Yan Ma (chair)
Harvey Co Chien, MS (BIOST '87)
Sloane Astorino
(director of development)

Community Engagement Center



Homewood Community Engagement Center (CEC)
The department held one of their monthly faculty meetings at the Homewood CEC this past year, highlighting our passion for collaboration in the community.

Support the Biostatistics & Health Data Science Department

For more than 75 years, the University of Pittsburgh School of Public Health has championed vital initiatives to inform and empower local communities and diverse populations around the world.

Our groundbreaking research grows from a rich history—from Jonas Salk’s development of the polio vaccine in the 1950s—to current priorities that drive positive change and enrich the future of the public health.

Through excellence in research, education and practice, we generate knowledge, train public health professions and partner with communities locally and globally to promote health, prevent disease and achieve health equity.

Direct your gift to a specific area, contribute to our **Biostatistics General Support Fund** or establish one of your own.

Link: <https://shorturl.at/vxAI3>

Give today.



Support in Action

This past year, we were proud to present a number of endowments and scholarships to our students. Eighteen of our students received awards from three prestigious department endowments and scholarships:

- The Harvey Cochien Endowed Award for Biostatistics (Funded by Harvey Co Chien, MS, BIOST '87)
- The Biostatistics Endowed Scholarship Fund (Funded by Anthony Segreti, MS, BIOST '75)
- Biostatistics Travel Award (Funded by Henry Hannen Liu, PhD, BIOST '82)

We are grateful for the generosity of our donors, which has enabled us to support the academic achievements of our talented students.