Welcome Back!
BIOS ALUMNI HIGHLIGHTS

Dr. Dione Price, Emory BIOS Alumna

Alumna Dione L. Price was elected vice president of the American Statistical Association. She will begin a three-year term in 2020. Currently, Price is the director of the Division of Biometrics IV in the Office of the Biostatistics in the Food and Drug Administration Office.

"My greatest accomplishment is the daily knowledge that my statistical leadership and expertise positively contribute to ensuring the efficacy and safety of drugs and therapeutic biologics for the public. As a statistician, I make a difference in the lives of others. This is an honor and a joy!"

As reported in AMSTAT, in her candidate statement, "Price focused on the intersection of awareness, sound statistical science, and adaptability." She completed her PhD at Emory in 2000. Her dissertation, entitled "Spline Models for Heterogeneous Populations with Cure" was supervised by Professor Amita Menatunga (pictured bottom right). Dr. Price became the first African-American to earn a doctorate in biostatistics at Emory.

ASA Members E ect Emory BIOS Alumna, Dr. Dione Price, to Association Leadership

A WARM BIOS WELCOME

BIOS welcomed (Max) Siu Yin Lau, PhD as a tenure-track assistant professor in July of this year. Dr. Lau’s most recent experiences comes by way of Bristol-Meyers Squibb in Princeton, NJ where he worked in the Translational Bioinformatics department, and Princeton University where he worked in the Department of Ecology and Evolutionary Biology.

Dr. Lau’s research experience makes him a key fit for BIOS, as one of his key focus areas of research is developing statistical modeling and inference frameworks for infectious disease data.

Dr. Lau believes that "University education should lead to transformative understanding, thus empowering students to engage with real-world problems." He is looking forward to designing courses at various levels, as his experience with students from various academic backgrounds in public health, medical and statistical fields of study will help him to implement individual-centered teaching strategies a diverse student population.
Professor Eugene Haung is the PI on an R01 grant, funded by National Cancer Institute.

In cancer research, precision medicine hinges on the development of valid biomarkers for cancer diagnosis, disease prognosis, and prediction of response to specific therapeutic interventions. Fuelled by the rapid recent advances in the scientific knowledge of molecular biology and high-throughput omics technologies, a large number of candidate biomarkers for various cancers have been or are being identified.

Statistical and computational methods play a critical role in rigorously evaluating these biomarkers and further developing clinically relevant prediction rules to ultimately improve and advance cancer treatment and patient management. However, most existing methods, for continuous biomarkers, target diagnostic accuracy measures dictated by mathematical convenience rather than clinical utility.

The proposed project develops novel and efficient statistical and computational methods for disease detection using biomarkers. They will facilitate biomarker evaluation and further formulation of multiple prediction rules to guide treatment and patient care for cancer and other diseases.

Professor Lance Waller is the PI on an R01 grant, funded by Bunice Kennedy Shriver-NIAMS Institute of Child Health & Human Development (NICHD).

Small area data are ubiquitous in public health including incident or prevalent disease counts, population sizes, socioeconomic covariates, and environmental exposures. Geographic Information Systems (GIS) link and merge such data but do not account for multiple sources of uncertainty. Small area estimation and disease mapping techniques provide tools for maintaining geographic precision of smaller areas and statistical precision of larger sample sizes via "borrowing information" from neighboring areas.

To date, these methods do not readily incorporate design-based uncertainty from the components, especially area denominators (population size at risk) or covariates. This research project involves the development of statistical methodology and associated software tools as part of an evolving reproducible workflow to incorporate local population and covariate uncertainty into spatial models of disease risk.

The Mental Health Research group at the Department of Biostatistics and Bioinformatics has been awarded a total of $3,070,305 R01 grant funding for a five year period ($614,061/yr) from the National Institute of Mental Health.

Drs. Ying Guo, Amita Manatunga, and Limin Peng (Ir) are the multiple principal investigators and Drs. Tanya Jovanovic, Kerry Nessler and Jennifer Stevens from the Department of Psychiatry, Emory University are Co-Investigators. The focus of this grant (7/25/2019-7/24/2024) is to develop statistical methods for analyzing complex, multi-dimensional data from cross-sectional and longitudinal mental health studies. The Mental Health Research group, led by Drs. Manatunga, Peng and Guo, has received continuous funding from NIH since 2008.
Winship Cancer Institute of Emory University Awarded a Five-year, $9.7 Million Specialized Program of Research Excellence (SPORE) Grant from the National Cancer Institute (NCI)

Several faculty from the Department of Biostatistics and Bioinformatics are key members of the Lung SPORE grant being in the Biostatistics and Biomedical Informatics Core. Michael Kutner, PhD, is the Director of the Core and Nelson Chen, PhD, is the Core Co-Director, and Hau Vu, PhD, is the Bioinformatician in the Core (L-R). “It is our pleasure and honor to be involved with the SPORE grant investigators by aiding in the design of lung cancer studies and carrying out innovative cutting-edge clinical trials that will hopefully eventually lead to improving the outcomes of lung cancer patients,” says Kutner, Robert Professor of Biostatistics. It's the first and only grant of its kind to be awarded in the state of Georgia and one of only four SPORE grants in the U.S. dedicated to lung cancer.

BIOS WELCOMES NEW EMPLOYEES!

Angela Guinyard, Assistant Director of Academic Programs
January 28, 2019

Shawei Li, Post-Doctoral Fellow
April 18, 2019

Wei Zhan, Post-Doctoral Fellow
August 1, 2019

Yi Guo, Biostatistician
August 1, 2019

Joy Hearn, Academic Department Administrator
July 1, 2019

Weidong Wang, Visiting Scholar
July 1, 2019

Shannon Meza, Research Project Manager
July 17, 2019
Hanyi Zheng, first-year MSPH student, was chosen as a highly selective summer intern position at the Department of Bioinformatics and Computational Biology at MD Anderson Cancer Center at the University of Texas.

The University of Texas MD Anderson Cancer Center is one of the world's most respected centers devoted exclusively to cancer patient care, research, education, and prevention.

"My internship work is about building a recommendation system by leveraging machine learning algorithms (specifically natural language processing models)." Zhengyi Zhu

Favorite Quote:
"It's not whether you get knocked down, it's whether you get up." — Vince Lombardi

"I am working as a data scientist intern with Facebook this summer on community integrity team. The mission of our team is to improve and ensure the safety for Facebook and Instagram using statistics, analytics and machine learning. Specifically, my internship project is to build a country-level integrity measurement framework to quantify, monitor and predict the extremely serious violations across 225 countries for different violation types. Moreover, we are building a scoring model to measure the risk for each country by aggregating the information from several dimensions. It can facilitate the daily tasks for Marketing team to better allocate the resources to high risk countries, and provide guidance for recruiting process." — Yikai Wang
Julia Gallini was the winner of the 2019 Charles C. Shepard Award.

The award honors the work and memory of Dr. Charles C. Shepard, an outstanding scientist at the Centers for Disease Control and Prevention who made important advances in the field of public health. Julia Gallini’s thesis, which centered around the cost-efficiency of various sampling methods for trachoma surveillance, was a standout and earned her the 2019 Charles C. Shepard Award. Given her previous experience working at The Carter Center with the trachoma control program, the blindness-causing bacterial infection was top of mind. “The motivation for this thesis was the suspicion that the current sampling design could be inefficient and waste funding,” says Gallini. “We found that the 30 by 30 sampling design is indeed cost inefficient, and that other designs should be considered in the fight against trachoma.”

Doctoral student Behzad Kianian, was one of five winners in the 2019 ENAR Spring Meeting Poster Competition for her work with professors Howard Chang, Lance Waller, and Rachel Patzer entitled “Propensity score matching for multi-level and spatial data.”

The 2019 ENAR Spring Meeting brought together researchers and practitioners from academia and government, connected through a common interest in Biostatistics.

Students, pictured left to right: Raphael Murden, Zhiwei Zhao, Lindsey Schader, Andrea Lane, and Sahil Nizam assisted in a School of Medicine Bootcamp on R and statistics led by faculty member, Renee Moore (pictured right). Thanks to Dr. Moore and all of our students who participated!
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In addition to being inducted into Delta Omega Honorary Society, Allyson Mateja was selected by MSPH Student Services to carry the gonfalon for the MSPH degree students at the RSPH Diploma Ceremony on Monday, May 13, 2019.

We thank Allyson for her time and dedication to the department.

Jee Won Jo was the recipient of the 2018 Livingston Fellow Award.

Teng Fel was recently awarded the Emory Advanced Graduate Teaching Fellowship.

Nancy Murray was the recipient of the BIOS Student Teaching Award.

Nancy Murray had her first paper accepted for publication in Environmental Research entitled, "A Bayesian ensemble approach to combine PM 2.5 estimates from statistical models using satellite imagery and numerical model simulation."

Her advisor, and co-author is Dr. Howard Chang.
This year, fourteen students from various universities and states across the U.S. participated in SIBS. SIBS is a six-week long training program in biostatistics for undergraduates and beginning graduate students who are US citizens or permanent residents.

The program is sponsored by the National Heart, Lung and Blood Institute and the National Center for Advancing Translational Sciences. Each week, Emory SIBS students participate in numerous activities, including coursework, seminars & presentations by leading scientists and researchers at Emory and other Atlanta-area institutions.

The program is designed to provide students with training in the statistical analysis of public health and medical data, and to motivate interest in biostatistics and public health as possible graduate school and career options.

Above: Visiting SIBS students and BIOS faculty, staff and students at the 2019 Program Celebration Dinner this summer.

BIOS Faculty, Students & Staff
who participated in SIBS

- Pictured on the right: J. Walter, Lance Co-director
  - Moore, Renee – Co-Director
  - Aboud, Mary – Admin Support
  - Guinovar, Angela – ADAP
- Murden, Raphiel – Graduate Student Mentor
- Smith, Madera – Graduate Student Mentor
- Schoder, Lindsay – Graduate Student Mentor
- Thomas, Nikita – Graduate Student Mentor
- Lukemire, Joshua – Graduate Student Mentor
- Alyedipe, Samuel – Graduate Student Mentor
- Laine, Andrea – Graduate Student Mentor
Dr. Eugene Huang (I) and Dr. John Hanfelt, interim Chair of BIOS, congratulate and celebrate Jae Eui Soh on successfully defending his dissertation.

Dissertation Defense

Ph.D. Candidate
Jae Eui Soh
Department of Biostatistics
Rollins School of Public Health
July 23, 2019
10:00 am - 12:00 pm
Claudia Nance Rollins Building
Room 3001

Nonparametric Regression for Assessing
Time-Varying Effects in Survival Analysis
Advisor: Yi Jian "Eugene" Huang

IXAVIEM HIGGINS
Dissertation Defense
April 19, 2019
11 am - 1 pm
Grace Crum Rollins Building
Room 711
Co-Advisors:
Ying Guo, Ph.D.
Suprakash Ganguli, Ph.D.
Statistical Methods for Analysing
Brain Functional Connectivity
Announcing the PhD Dissertation Defense of **JEONG HOON JANG**

**Statistical Methods for Evaluating Continuous and Functional Diagnostic Markers**

June 19, 2019  
2:00 pm to 4:00 pm  
Claude Nancrey Rollins Building  
Room 2001

**ADVISOR:** Dr. Mitha Manatunga

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**PH.D. CANDIDATE**

**HAO FENG**

**DISSERTATION DEFENSE**

**Statistical Methods for High-throughput Epigenomics Data**

May 17, 2019  
9:00 am—11:00 am  
Claude Nancrey Rollins Building  
Room 2001

**Advisor**  
Dr. Hao Wu
Dissertation Proposal

Department of Biostatistics & Bioinformatics
Rollins School of Public Health
Emory University

GRACE KIM

August 2, 2019
11:00 am to 5:30 pm
Cox 030 Emory University

FLEXIBLE METHODS TO INTEGRATE COHORTS FOR COHORT ANALYSIS

Advisor: Linlin Peng, Ph.D.

RAPHAEL PILUGEN

Dissertation Proposal

July 22, 2019
11:00 am to 5:30 pm
Cox 030 Emory University

JOSHUA LUKEMIRE

Dissertation Proposal

July 13, 2019
11:00 am to 5:30 pm
Cox 030 Emory University

Statistical Methods for Brain Network Estimation

Advisor: Ying Goe, Ph.D.

Operational Neuroscience Faculty: Building Room 005
Dr. Renee Moore was invited to serve on the NIH Musculoskeletal Rehabilitation Science Study Section under the Department of Health and Human Services. Members are selected based on competence, and achievement in their scientific discipline. Dr. Moore's term began July 1, 2019 and continues through July 30, 2025.

Dr. Moore and Dr. Yuan Liu were selected as recipients of the Department Faculty Mentor Award. They continue to inspire our students, and other faculty members.

DuBois Bowman, PhD
Former BIOS Faculty Member

Dr. DuBois Bowman, former faculty member of BIOS, now Dean of the School of Public Health at the University of Michigan, was the invited guest speaker for the department's 2019 Donna J. Brogan Lecture in Biostatistics.

Dr. Bowman's areas of study include Parkinson's disease, Alzheimer's disease, depression, schizophrenia, and substance addiction. His research has helped to reveal brain patterns that reflect disruption from psychiatric diseases, detect biomarkers for neurological diseases, and determine more individualized therapeutic treatments. Additionally, his work seeks to determine threats to brain health from environmental exposures and to optimize brain health in aging populations.

Associate Professor Tianwen Yu was elected president of the Georgia Chapter of the American Statistical Association.

Research Instructor Julie Cline was appointed to be a Temporary In-Country Advisor for the Pan-American Health Organization/World Health Organization to teach and advise Ministry of Health professionals of Surname in the analysis of entomological and epidemiological spatial data for arbovirus control.

Heping (Maggie) Wang was promoted to Senior Biostatistician in July 2019.
The Emory CFAR Biostatistics and Bioinformatics Core, under the direction of faculty member Bob Lyles, hosted a scientific meeting on March 21, 2019. Speakers included Bryan Lau from Johns Hopkins University as well as Emory faculty member Yijuan Hu and BIOS student Jeong Hoon Jang.

Bryan Lau, PhD  
John Hopkins University

Yijuan Hu, BIOS Associate Professor

Jeong Hoon Jang

Bob Lyles, PhD  
Professor

Professor Limin Peng graduated from Woodruff Leadership Academy announced in July 2019. Dr. Peng also gave a presentation on improving writing skills at the National Institute of Statistical Sciences (NISS).

Associate Professor  
Steve Qin was nominated and selected to join the 12 member board of directors of MCBIOS (MidSouth Computational Biology and Bioinformatics Society).


Steve Pittard and Steve Qin has been accepted entitled “Methods, System and Computer Analytical Strategy Model for Generating Quantifiable Genomic Information and Results”. The two worked with Emory Office of Tech Transfer for over 3 years on the project.
Associate Professor Hao Wu was the recipient of the BIO3 Teaching Award.

Professor Amita Manatunga and Assistant Research Professor Jeff Svitchny were awarded pilot grants from the Biostatistics, Epidemiology and Research Design (BERD) program of the Georgia CTSA.

Research Associate Professor Zhengta (Neilson) Chen was invited to serve on the NCI Clinical Oncology Study Section.

Mary Kelly was promoted to Research Professor in July 2019.

Assistant Professor Suprateek Kundu was invited to join the editorial board of Biometrics as of June 2019.

Assistant Professor Ben Risk, under the mentorship of Associate Professor and Emory Center of Biomedical Imaging Statistics (CBIS) Director Ying Gao, was awarded a Dean’s Pilot and Innovation Award for his project, “Improving estimates of functional connectivity in the human brain.”

Dr. Guo, with Bio student Yikai Wang, recently published “A hierarchical independent component analysis model for longitudinal neuroimaging studies.” Neuroimage, 186(1), 388-400.”
Our first BIOS Department MLA Day Service Activity was held at Clyde Sheperd Nature Preserve. Student and faculty volunteers, as well as family members, helped shovel and spread mulch on the trails, cut English ivy off of trees, and cut back privet. It was hard work but the trails and park looked really great!

Thanks go to the BIOS Diversity Committee and BIOS student representatives Madoc Smith and Victoria Kennerley (pictured on left) for organizing the event!