BIOSTATISTICS SEMINARS
All seminars are held from 4PM – 5PM
485 Lexington Ave, Conference Room B (2137)

❖ September 12, 2018   **Wendy London**
       Harvard Medical School

HEALTH OUTCOMES RESEARCH GROUP SEMINARS
All seminars are held from 12PM – 1PM
485 Lexington Ave, Conference Room B (2137)

❖ September 7, 2018   **Heather Gold**
       NYU Langone Health

STAFF FAREWELLS

After over four years with us, **Liz Fortier** is leaving our department. During her time with Health Outcomes, Liz worked closely with Allison Snyderman and Talya Salz. Though bittersweet, Liz will be staying at MSK and starting as a Thoracic Oncology Outpatient Social Worker at 53rd Street. While there, she will be responsible for the outpatient thoracic surgery and medicine services, in addition to part of the hepatobiliary surgery service. Congratulations on this exciting next step in your career!

Molly Samson was awarded a Fulbright Scholarship to pursue a research fellowship in Ife, Nigeria under Peter Kingham (Surgery). Her project, in collaboration with Margaret Du and MSK's Global Cancer Disparity Initiatives Program, will focus on determining risk factors of colorectal cancer in a Nigerian population. Molly has spent the past 2 years supporting the research efforts of Helena Furberg-Barnes and Sara Olson, including recruitment for the DETER Study and Pancreatic Tumor Registry, respectively. We wish her all the best and thank her for all her hard work!

After 27 years of dedicated service to our department, **Weiji Shi** will retire on August 3rd. Weiji has collaborated in many different clinical disciplines over the years including gastrointestinal oncology, Bloom's syndrome, anesthesiology and critical care, neurology, and radiation oncology resulting in numerous publications and presentations. She was a primary analyst evaluating the long-term mortality reduction with colonoscopic polypectomy from the National Polyp Study published in in the New England Journal of Medicine in 2012 and a front page 'above the fold' news article in the New York Times! We thank Weiji for her dedication and years of service at MSK and wish her all the best for a healthy and happy retirement. Congratulations Weiji! You will be greatly missed by the Epi/Bio family.

Biostatistics   Epidemiology   Administration   Computing Resource   Computational Oncology   Health Outcomes

SUSAN CHIMONAS WINS PROFESSIONALISM ARTICLE PRIZE

Our very own **Susan Chimonas** won the American Board of Internal Medicine's John A. Benson JR., MD Professionalism Article Prize for her paper "Bringing Transparency to Medicine: Exploring Physicians' Views and Experiences of the Sunshine Act." The award was created in 2011 to recognize outstanding contributions to the growing body of peer-reviewed journal articles that document the impact of medical professionalism on improving health care. Susan's paper took a close look at the Physician Payments Sunshine Act (PPSA), which requires health care product manufacturers to report to the federal government payments more than $10 to physicians, which brought an unprecedented transparency to medicine. She sought to analyze the implications of PPSA for medical professionalism, beginning with its impact on and use by physicians.

Susan Chimonas, PhD

You can read more about the award, Susan's paper and ABIM's profile on Susan via the following link:
http://abimfoundation.org/profile/power-and-professionalism-in-health-care

GRANTS

Elizabeth Kantor, along with co-investigator Edward Giovannucci from Harvard, received an R03 grant for "Characterizing the role of glucosamine and chondroitin supplements in the prevention of colorectal tumors." The project aims to examine the use of glucosamine and chondroitin supplements which have been associated with reduced risk of colorectal cancer, and is posited to reduce risk through an anti-inflammatory mechanism. It is proposed to evaluate how the use of these supplements relates to risk of adenoma, a precursor lesion of colorectal cancer; in addition to characterize how the form, formulation, and dose of glucosamine and chondroitin relates to systemic inflammation, as measured by C-reactive protein concentration.

CORE GRANT

The Cancer Center Support Grant of MSK was up for renewal in 2018. In many ways this is the most important grant that MSK holds as it allows us to call ourselves an NCI-designated cancer center. Our department was heavily involved in the preparation for renewal. **Colin Begg** serves as Associate Director for Population Science, **Jonine Bernstein** is co-leader of the Population Science Research Program. **Mithat Gonen** is the Director of the Biostatistics Core and **Andrew Vickers** was a co-director of the Patient-Reported Outcomes, Community Engagement and Language Core. The resubmission process took more than a year in preparations and culminated in a site visit in May that involved the assistance of several staff. We are happy to announce that MSK received a renewal for five years and with flying colors. Thank you to all who helped with this effort!

PUBLICATIONS

Kathy Panageas co-authored a manuscript **"Design considerations for early-phase clinical trials of immune-oncology agents"** in the Journal of Immunotherapy of Cancer, which highlights main challenges of early-phase study design of immunotherapies from a statistical perspective. The underlying toxicity and efficacy assumptions of cytotoxic versus immune-oncology agents are compared and novel endpoints to be included in the dose-selection process are proposed. When available, references to software and/or web-based applications are provided to ease the implementation.

Lauren Rogak and Ethan Basch co-authored the paper "**Software for Administering the National Cancer Institute's Patient-Reported Outcomes Version of the Common Terminology Criteria for Adverse Events: Usability Study**" in the Journal of Medical Internet Research. The study sought to evaluate and improve the usability of PRO-CTCAE software via use of semiscripted, think-aloud protocols in two consecutive rounds of usability testing among patients with cancer, clinicians, and research associates at 3 cancer centers.

STAFF ACHIEVEMENTS

Kathy Panageas has been elected to the Caucus for Women in Statistics Program Committee for 2019-20.

Esther Drill successfully defended her DrPH thesis "Classification from Integrated Genomic Data Using a Joint Latent Variable Model with Application to Cancer" on May 29th.

STAFF PROMOTIONS

❖**Farheen Ajmeri** promoted to Financial Analyst

OUT OF THE OFFICE

Current members (Keimya, Jessica, Pampa, Irene) and alumni (Himali, Diana) of the Molecular Epidemiology Laboratory gathered for a delightful and heartwarming Family Lab Reunion on June 2nd in Princeton, NJ.

FOOD RECOMMENDATIONS

Doughnut Plant: artisanal doughnuts are now inside Grand Central Terminal! Located in the lower level dining concourse. *89 E 42nd St Grand Central Terminal Dining Concourse*

Pokéworks: choose a rice bowl, burrito, or salad with your choice of proteins, toppings, and mix-ins at this new poke spot. *117 E 41st St. and Lex*

NEW STAFF

Susan Chimonas, Qualitative Methodologist
Susan is a sociologist who joined the department in March. She was previously the Director of Research at Columbia University's Center on Medicine as a Profession, where her work investigated physician-industry ties using focus groups, surveys, policy analysis, and other methods. Susan will be working with the Health Outcomes Research Group to provide expertise on qualitative and mixed-methods projects.

Pranam Dey, Data Assistant
Pranam has joined the Health Outcomes Research Group as a Data Assistant working primarily with Dr. Aaron Mitchell on several projects related to health policy. He previously worked as a research assistant at Yale's Center for Outcomes Research and Evaluation. He graduated from Yale University in 2018 with a BS in Economics and Biology and will be returning to Yale School of Medicine to pursue a MD in the Fall of 2019.

Margaret Hannum, Assistant Research Biostatistician
Margie has joined the Epi/Bio group as an Assistant Research Biostatistician. She will be working with Venkat Seshan on Lymphoma SPORE, Kay See Tan on Critical Care studies, and Ronglai Shen on genomics projects. She previously interned under Ronglai while completing her MS in Biostatistics from Columbia University. Prior to graduate school she worked as a research study assistant for the Department of Medicine at MSK.

Chun Chung (Christopher) Ma, Research Fellow
Christopher recently joined our department and will be working with Ronglai Shen.

Andrew M. Madouty, Program Assistant
Andrew joined the Epi/Bio group in June. He comes to us from the MSK Corporate Procurement Department, where he worked as a Purchasing Assistant. Andrew will be supporting Sohrab Shah and the Computational Oncology program. He graduated with his Masters of Public Health in 2018 from New York University with a concentration in Epidemiology and Global Health.

Erika Streeter, Administrative Assistant
Erika graduated with a BS in Business Administration in 2014. She comes to us with a background in health insurance, having previously worked as a Network Physician Contractor for United Health Care in New Jersey. She will be supporting the administrative needs of Peter Bach and Anna Kaltenboeck, as well as the business management needs of the Center for Health Policy and Drug Pricing Lab's ongoing research projects.

Samantha Vasquez, Assistant to Chairman
Samantha received her Master's Degree in Health Services Administration in 2014 from the University of Central Florida. Upon receiving her degree, she worked at Florida Hospital in Orlando, one of Florida's top hospitals in Orlando. She then decided to relocate to New York City for better career opportunities. She started at MSK in February of 2017 as the Assistant to the Chief of Nuclear Medicine in Radiology. She will use her skills and experience from Radiology in her new role at Epi/Bio.

Yesenia (Yessie) Werner, Project Coordinator
Yessie joins Epi/Bio as she goes into her 4th year at MSK! She comes to us from the Office of the Physician in Chief, where she also assisted with faculty recruitment including that of the new Chief of Computational Oncology, Sohrab Shah. She received her BS in Biology from The College of New Jersey where she performed conservation genetics research in both the lab and the field on endangered species of freshwater mussels.

SUMMER INTERNS

❖**Ritujith Jayakrishnan** mentoring with Colin Begg
❖**Sara Larosiliere** SCORE student, mentoring with Sujata Patil and Jaya Satagopan
❖**Maddie Lee** mentoring with Li-Xuan Qin
❖**Ria Roy** mentoring with Irene Orlow
❖**Cenai Zhang** mentoring with Ronglai Shen

JSM2018
Vancouver, British Columbia, Canada

#LeadWithStatistics
July 28 - August 2, 2018
Vancouver Convention Centre

Many of our colleagues attended and presented at the 2018 Joint Statistical Meeting in Vancouver, British Columbia.

Jaya Satagopan presented work with **Sean Devlin**: **Statistical Interactions from a Growth Curve Perspective,** which illustrated two statistical modeling concepts in 2 cohort studies of early death for late-stage colorectal and pancreatic cancer cases, and 2 case-control studies of NAT2 acetylation and smoking in advanced colorectal adenoma and bladder cancer.

Renee Gennarelli presented work with **Mithat Gonen** and **Peter Bach**: **Statistical Evaluation of Oncology Drug Trial Portfolios and the Potential for Inappropriate Regulatory Approval: A Simulation Study**, discussing a simulation they developed to replicate a portfolio of existing clinical trials and assess the type 1 error rate and family-wise error rate. This presentation featured an overview of the features and applications of the simulation, as well as issues regarding error rates when evaluating large portfolios of trials for drug approval.

Alexia Iasonos chaired a section entitled: **Bayesian Theory, Foundations, and Nonparametrics**. Dr. Iasonos also presented : **Phase I Designs That Allow for Uncertainty in the Attribution of Adverse Events**, which discussed her work to develop methods for removing or diminishing the impact of bias in adverse event attribution; as well as a poster: Biopharmaceutical applications: Trials, Biomarkers, and Endpoint Validation.

Jessica Lavery chaired and organized a section entitled: **Practical and Methodological Issues Related to Profiling Hospitals in the United States**, featuring experts who examined the various approaches to profiling provider performance, alongside of a methodological discussion regarding issues such as the low information context, risk adjustment, identifying outlier providers, the volume-outcome relationship, and potentially combining multiple outcome measures. Kathy Panageas, as the discussant for this panel, focused on how to convey profiling information to patients in a responsible, informative and useful way.

Venkat Seshan presented his work with colleagues: **Estimating Tumor Fraction in Circulating Cell-Free DNA Using Shallow Whole Genome Sequencing**, an adaptation of the circular binary segmentation algorithm for the analysis of copy number information in cfDNA and use it to estimate a cancer cell fraction in cfDNA.

Jaya Satagopan organized, and **Sujata Patil** chaired a section entitled: **Bayesian Variable Selection and Shrinkage in Epidemiology Studies**.

Emily Zabor presented a poster presentation and discussed her work with **Colin Begg**: **Application of a Method for Identifying Disease Subtypes That Are Etiologically Heterogeneous**, showing the results from an application of previously validated method to a large breast cancer case-control study with available gene expression for the cases.

Li-Xuan Qin chaired and organized: **Statistical and Practical Issues for Reproducible Molecular Prediction in Biomedical Studies**.

Ronglai Shen chaired and organized a section: **Statistical and Computational Advances in Cancer Genomics with Application to Precision Medicine**.

Colin Begg presented his work in this section: **Distinguishing Second Primary Cancers from Metastases: Statistical Challenges in Testing Clonal Relatedness of Tumors, which examined the construction of statistical tests for clonal relatedness in clinical settings using a tumors somatic profile**.

Patrick Hilden presented his work: **Addressing Missing Accelerometer Data with Functional Data Analysis (FDA)**, which proposed a simulation study evaluating functional principal components analysis and a recent nonnegative decomposition approach as methods for estimating the underlying functional profiles, and subsequently imputing plausible values for missing data.

Sujata Patil organized, and **Jaya Satagopan** chaired a section: **Building a Computing Age #StatisticsCurriculum for Biomedical Scientists**.

Mithat Gonen chaired and organized a section: **Clinical Trial Design for Precision Oncology**.

Kristen May Cunanan presented work with **Alexia Iasonos, Ronglai Shen, Colin Begg** and **Mithat Gonen**: **Evaluating the Statistical Properties of Bayesian Basket Trial Designs**, their findings from the investigations of the potentials gains and complexities when using Bayesian hierarchical or mixture modeling.

Sujata Patil presented work with **Ushma Neill** and **Jaya Satagopan**, **Building and Teaching a Statistics Curriculum for Post-Doctoral Biomedical Scientists at a Free-Standing Cancer Center**, developed a statistics curriculum for post-doctoral biomedical students at a free-standing cancer center.

Mithat Gonen presented **An Old Dog Self-Teaching New Tricks**, discussing the benefits of learning and using new methods in statistical analysis.

Ai Ni presented work co-authored with **Li-Xuan Qin**: **Adjusting for Handling Effects in Microarray Data for Prognostic Biomarker Discovery and Survival Risk Prediction**, their findings from extensive simulations to explain the impact under both univariate analysis and multivariate regularized Cox proportional hazards regression, as well as the application of strategies to a micro RNA study on ovarian cancer to demonstrate their performance in biomarker discovery and risk prediction for progression-free survival.

QSURE

Quantitative Sciences Undergraduate Research Experience

This summer, the Department of Epidemiology & Biostatistics welcomed its first cohort of fellows in the Quantitative Sciences Undergraduate Research Experience (QSURE) program. Ten students from 6 different universities worked on a variety of research projects, mentored by faculty in Biostatistics, Epidemiology, and Health Outcomes. Research projects included an epidemiologic study of the relationship between telomere length and a woman's age at last birth (fellow: Chase Latour, mentor: Margaret Du), a simulation study of variable selection methods in survival analysis (fellow: Elly Kipkogei, mentor: Audrey Mauguen), and an analysis of the relationship between publicly reported hospital quality measures and observed outcomes (fellow: David Hong, mentor: Allison Lipitz-Synderman). All the projects are listed on the **QSURE website**. Fellows attended lectures in quantitative methods given by members of the department and a weekly seminar in responsible conduct of research. The program also hosted two internationally renowned guest speakers, Dr. Roderick Little, a statistician at the University of Michigan, and Dr. Amy Abernethy, an oncologist and Chief Medical Officer at Flatiron Health. The QSURE team (**Jaya Satagopan, Elena Elkin, Kay See Tan, Shireen Lewis, Cynthia Berry**) will evaluate this year's program in preparation for next summer. Applications for QSURE 2019 will be available on the departmental website in October.

Nicholas Hartman
Mentor: Sara Olson
Project: Age at onset of pancreatic cancer in relation to risk factors

Antara Mondal
Mentor: Elizabeth Kantor
Project Title: Association Between Use of Fish Oil Supplements and Inflammation

David Hong
Mentor: Allison Snyderman
Project: Measures of hospitals' quality: how do they relate?

Margaret Steiner
Mentor: Venkat Seshan
Project Title: Estimating tumor fraction from shallow whole genome sequencing

Elly Kipkogei
Mentor: Audrey Mauguen
Project: Simulation study of variable selection methods for survival analysis

Srinivas Sunil
Mentor: Zhigang Zhang
Project Title: Statistical Analysis of Cancer Data from Radia-tion Oncology

Chase Latour
Mentor: Margaret Du
Project Title: Association Between Age at Last Birth and Maternal Telomere Length

Sarah Szvetecz
Mentor: Li-Xuan Qin
Project Title: Impact of study design and data normalization on finding functionally-related microRNAs

Christine Lin
Mentor: Malcom Pike
Project Title: Mammographic background parenchymal en-hancement and risk of breast cancer

Aijin Wang
Mentor: Ronglai Shen
Project Title: Applying statistical machine learning methods to cancer genomics