Ronglai Shen — Biostatistics
Matthew Buas — Epidemiology
Maria Andrade Aray — Administration
Ruslan Soldatov — Computational Oncology
Talya Salz — Health Outcomes

BIOSTATISTICS SEMINARS

❖ November 6, 2024 — **Alexia Iasonos** MSKCC

❖ November 13, 2024 — **Haitao Pan** St. Jude

❖ November 20, 2024 — **Teng Fei** MSKCC

❖ December 4, 2024 — **TBD**

❖ December 11, 2024 — **Yasin Khadem Charvadeh** MSKCC

HALVORSEN CENTER FOR COMPUTATIONAL ONCOLOGY SEMINAR SERIES

❖ November 19, 2024 — **Rahul Satija** NYU

❖ December 17, 2024 — **TBD**

EPIDEMIOLOGY SERVICE MEETINGS

❖ November 4, 2024 — **Yadav Sapkota** St. Jude

❖ November 18, 2024 — **TBD**

❖ December 2, 2024 — **Noha Sharafeldin** UAB

❖ December 16, 2024 — **Peng Wang** MSKCC

POPULATION SCIENCES RESEARCH PROGRAM SEMINAR SERIES

❖ November 21, 2024 — **Jeffrey Meyerhardt** **Dana-Farber**

❖ December 17, 2024 — **Simon Lee** **University of Kansas**

HEALTH OUTCOMES RESEARCH GROUP SEMINARS

❖ November 21, 2024 — **Aaron Mitchell** **MSKCC**

❖ December 12, 2024 — **Ilana Richman** **Yale School of Medicine**

35 YEARS OF COLIN BEGG

The Epidemiology & Biostatistics department celebrates the 35th anniversary of **Colin Begg** at MSK. Colin came from Marvin Zelen's research group at the Harvard Chan School of Public Health, to the role as chairman of MSK's Biostatistics department. Unsure of how the transition would go, from a traditional university environment to a more administrative leadership role, Colin decided to give at least 5 years in the position. As 5 years became 10 and 10 became 15, soon 35 years had passed as Colin's tenure witnessed 7 Physician in Chiefs and 4 different hospital presidents. As for the department - what started as a team of eight members in 1989 grew to a group that currently has a zzPDL of 330 recipients.

On October 24th, a celebration for Colin was hosted by the faculty and leadership. Speeches were given by **Lisa DeAngelis, Selwyn Vickers, Jonine Bernstein, Kathy Panageas, Sohrab Shah** and **Mithat Gonen** – all of which praised Colin's leadership over the years. While the anecdotes they shared were different, there was a singular message across all their tales – no matter what happened, he "always did the right thing." Colin once described statistics as characterized by a "truth-seeking analytic focus" and there was no doubt that he had personified that principle in his leadership.

Their speeches were followed by one from Colin himself, as he regaled the audience with the tale of his tenure. Condensing 35 years into 35 minutes, Colin captivated the audience with stories from the start of the department, his hand in the development of the Clinical Research Database, and the additions of Epidemiology, the Population Sciences Research Program, and Computational Oncology to the department. As Colin's story came to an end, the view of the East River behind him was darkened by a poetic sunset. There was a certain energy in the room that felt like a force of nature.

During a speech in 2019, while receiving the Marvin Zelen Leadership Award, Colin jokingly compared himself to Rodney Dangerfield, "I don't get no respect." It couldn't be further from the truth that night, as he commanded the room. But like the proverbial performer, Colin ended the night with a mic drop. With a sudden shift in the air, Colin announced that he would be stepping down as chair of the Epi Bio department. With confusion and sorrow on his co-workers' faces, he reminded everyone that 35 years is a long time. He provided comfort with an expression of gratitude to everyone in the department. He described that when it comes to a job, you wake up with either a sense of dread or with a feeling of excitement and eagerness, and for him it was the latter "most days." The key to that, he described, is the people that you surround yourself with. People that you like and enjoy, those are

what make a place like Epi Bio as special as it is. With that, Colin's tenure as chairman comes to a close, and he finds himself once again, as he was 35 years ago, "just a researcher." We thank him for his leadership, his passion, and his friendship.

HEALTH POLICY JOURNAL CLUB

The Health Policy Journal Club has resumed after taking a short hiatus! For all those who are interested, the Health Policy Journal Club meets once a month and engages in all health policies one may be curious about. Typically, an article is nominated, read amongst the group and open for discussion. There are no mandatory expectations or commitments, only your interest in health policies! If you wish to participate and want to be part of our email list and calendar, please email Michelle Dongel for further information.

PROMOTIONS

Tiffany Cordero promoted to Senior Administrative Assistant

Madison Darmofal accepted a Senior Computational Biologist position at the Halvorsen Center for Computational Oncology

Alessandro Grande accepted a Senior Computational Biologist II position at the Halvorsen Center for Computational Oncology

Tomin Perea-Chamblee promoted to Bioinformatics Software Engineer II

Genesis Pineda accepted the position of Project Coordinator at the Halvorsen Center for Computational Oncology

Anya Steinhart promoted to Senior Research Tech

Christopher Tosh promoted to Senior Computational Biologist I

STAFF FAREWELL

Emily Cioppa's last day in the Molecular Epidemiology 'Orlow' Lab will be November 11th, 2024, as she is moving onto the newly formed Laboratory of RNA Structural Biology and Biophysics at Rockefeller University. Emily participated in research designed to assess genetic susceptibility to cancer related cognitive dysfunction in women undergoing treatment for breast cancer by genotyping candidate SNPs with hands on genotyping of targeted SNPs and sequencing. She also contributed to the large international and multicenter epidemiologic study "GEM" (Genes, Environment, and Melanoma) by obtaining data from public sources to help interpret our findings. She is co-author of the Abstract "Effect of chemokine (CK) and CK-receptor (CKR) gene variants on risk for developing multiple primary melanoma" selected for oral presentation at the 21st International Congress of the Society for Melanoma Research. More recently, she helped complete a study on metabolomics in gastric cancer patients by running immunoassays. She also helped process/handle biospecimens collected for the IMAGINE and InterMEL Studies.

Irene and the lab team wish Emily much success in her next steps ultimately leading to a PhD in the field of her dreams!

JOIN THE NEWSLETTER

Interested in joining the Epi Bio newsletter? Contact **Joey Kanik** for more information!

PUBLICATIONS

Anne Reiner and colleagues published a paper in Cancer entitled, "Agreement of medical record abstraction and self-report of breast cancer treatment with an extended recall window", using data from The WECARE Study. Their results demonstrated excellent agreement between self-report and medical record abstraction of breast cancer treatment modality information. This was true even among women whose recall window was more than two decades after diagnosis.

Aaron Mitchell, Sonia Persaud, and colleagues' paper entitled "Quality of Treatment Selection for Medicare Beneficiaries with Cancer" was accepted in JCO. LIS improves access to oral cancer drugs, but provides no assistance for clinician-administered/Part B drugs. This paper assessed the association between Medicare Part D Low Income Subsidy (LIS) participation and receipt of optimal cancer treatment. The authors found that when compared to non-LIS participants, LIS participants were less likely to receive Optimal treatment vs. No Systemic Therapy (OR = 0.54, 95%CI 0.46-0.64). Contingent on receiving pharmacologic therapy, LIS participants received treatment ranked within the worst quartile 24.8% of the time, compared to 21.9% of non-LIS patients (adjusted prevalence difference 4.3% (95%CI: 0.5%-8.2%). In conclusion, LIS participants were less likely to receive systemic therapy at all or to receive optimal therapy.

Karissa Whiting, **Teng Fei**, and **Li-Xuan Qin** published a paper in JCO CCI titled "Cureit: An End-to-End Pipeline for Implementing Mixture Cure Models With an Application to Liposarcoma Data". The paper presents a software pipeline designed to build, evaluate, and visualize mixture cure models, which can be useful alternatives to Cox models when a large proportion of patients may never experience the event of interest. The authors demonstrate the pipeline using a data set of liposarcoma patients, showing that while all histological subtypes are associated with higher DSD in standard Cox models, cure models provide additional insights. These models help identify which subtypes are specifically associated with disease incidence (myxoid, round cell, pleomorphic), and with disease latency (dedifferentiated, pleomorphic), which may be useful in patient stratification and treatment. The cureit tool was created to encourage clinical researchers to leverage cure models in appropriate settings where a subpopulation of cured individuals may require additional consideration.

Marion Kerioui, **Alexia Iasonos**, **Mithat Gönen**, and **Andrea Arfé** published a paper in Statistical Methods in Medical Research, titled "New clinical trial design borrowing information across patient subgroups based on fusion-penalized regression models." Basket clinical trials aim to assess the efficacy of a molecularly-targeted drug simultaneously across several subgroups of patients, called baskets, affected by different cancers that share a common molecular target. In this context, designs based on information borrowing strategies, which shrink together estimates of response rates across baskets with similar drug activity, may increase the probability of detecting a sufficient drug activity in each basket. In this paper, they propose a new class of multistage basket clinical trial designs that leverage fusion-penalized logistic regression models to borrow information across study baskets. They also describe a new general strategy to specify such designs based on the optimization of the mean square error of the response rate estimates obtained at the end of the study.

Fiona Ehrich and **Mithat Gönen** worked with Karlo Perica, Michel Sadelain and other members of the Sadelain lab to conduct analysis of in vitro and in vivo preclinical experiments for an article investigating how virus-like immune escape can be harnessed to enhance allogenic CAR T cell potency. Nef, an HIV immune evasin, was found to shelter CAR T cells from rejection by CD8 T cells and NK cells and additionally promote their survival in vivo via the serine kinase Pak2. These findings identify key pathways to enhance the therapeutic efficacy of allogeneic CAR T cells without requiring systemic immune suppression. This article is accepted by Nature and undergoing editorial revision.

ALLISON LIPITZ-SNYDERMAN QUOTED IN NEW YORK TIMES

Allison Lipitz-Snyderman was quoted in the New York Times article, "How to Choose an Oncologist," and her work on the impact of second opinions was cited. In selecting a hospital for cancer care, she acknowledges that there is wide variation in care between hospitals and that there is potential benefit to seeking a second opinion. In making this difficult decision, she suggests patients use all of the information available about the hospitals such as NCI-designation and patient volume. Patients also have to consider their own priorities such as having providers who speak their language or having a location that is easily accessible by their families. But it is important to remember that not everyone has the luxury of choice. Everyone should be guaranteed a minimum standard of quality no matter where they receive their cancer care: Everyone should have access to high quality care.

KRISTINA MANZANO FEATURED IN THE FACILITATOR

Kristina Manzano was recently featured in a facilities management newsletter, "The Facilitator." Kristina is the Facilities Coordinator for both the Joy and Macklowe Buildings. She has been working at MSK for more than 18 years. In her first 18 years at the institution, Kristina worked in an administrative patient-facing role. But a few years ago, she was fortunate enough to connect with members of Facilities who would go on to become her mentors. They would foster in her an interest in the work and a desire to pursue a career change when the role of Facilities Coordinator became available. While the jobs are very different, Kristina's role continues to involve helping people. Please enjoy reading the entire article using this link, beginning on page 38.

GRANT SUCCESS

Duaa Al-Rawi from the Shah lab received an award from the Gerstner Physician Scholars Program K12 for "Interrogating the mechanisms of CIN induced oncogene activation in ovarian cancer development."

Benjamin Greenbaum received a SU2C award for "Optimal vaccine design for Gastric Esophageal Cancer."

Jake Lee from the Shah lab received a DCLCR Research Fellow Award for "Mutational Processes Driving Clonal Evolution During Targeted Therapy in Lung Cancer."

Justin Jee from the Shah/Schultz Lab received a NIH K08 for "Automatic integrated biomarkers to improve prediction of lung cancer outcomes."

Andrew Mcpherson and Alex Kentsis received a U01 for their project titled "Integrative proteogenomics for elucidation of tumor-specific cell surface proteomes in ultra-rare cancers" from the Food and Drug Administration.

The Dr. Charles Sawyers' GENIE P01 titled "Leveraging Observational (Real World) Data to Advance Precision Oncology" was awarded by NCI. **Kathy Panageas** is Core Lead of Core A: Curation and Statistical Analysis; **Jian Carrot-Zhang** is the Project Lead of Project 2: Integrating race, ethnicity, and genomic ancestry across GENIE to understand genetic and environmental contributions to pan-cancer risk, prognosis, and outcomes; and **Nikolaus Schultz** is Co-Lead of Project 3: "Predictors of sensitivity to immunotherapy and targeted treatments based on real world evidence.

Elli Papaemmanuil and co-PIs Christopher Klebanoff and Taha Mergoub (Weill Cornell) received a grant from the Starr Cancer Consortium for their project titled "Characterizing the Role of Structural Genomic Instability in Generating Actionable Neoantigens in Pediatrics Solid Tumors."

Li-Xuan Qin is the Core Lead of the Biostats Core on the P50 titled "SPORE in Soft Tissue Sarcoma" awarded to Dr. Samuel Singer.

Francisco Sanchez-Vega and his co PIs Ekta Khurana (Weill Cornell), Yu Chen (MSK), Roberta Zappasodi (Weill Cornell) received an award from the Starr Cancer Consortium for their project titled "Prostate cancer non-neuroendocrine lineage plasticity: detection using multi-modal integration and immunotherapeutic targeting."

Sohrab Shah was awarded a grant from the Breast Cancer Research Foundation for his project "Developing AI models for outcome prediction in breast cancer."

Xiang Shu received an R37 from the NCI for his project titled "Circulating metabolites as novel risk biomarkers for gastric cancer: a large multi-center prospective investigation."

Wesley Tansey received an U54 Admin Supplement from the NIH for Spatial characterization of the tumor-immune microenvironment in SMARCB1-deficient epithelioid sarcomas.

BOOK CLUB
The next meeting of Book Club will be Tuesday, December 3rd from 4-5PM. The book will be *Small Things Like These* by Claire Keegan.

FALL FAIR
The Epi Bio group will be hosting a Fall Fair on Thursday, November 14 from 3:30-4:30PM in the Collaboration Cafe. Sign up for Family Feud or perhaps try your shot at winning the Best Dish (salty or sweet).

MSK EPI BIO
FALL FAIR
THURS NOV 14
COLLABORATION CAFE
3:30 - 4:30 PM

JOIN US FOR FOOD, GAMES, AND MORE!

JOIN CYCLE FOR SURVIVAL 2025

Please consider joining Team Bell Curve, our Epi/Bio departmental team for Cycle for Survival 2025, which will be hosted at Equinox East 61st Street on Friday, March 7 from 5-9pm. We will be riding alongside the Comp Onc team as well as other MSK employees to celebrate our collective impact on the fight against rare cancers. Details on the event are posted here. Commitment involves participating in the event and helping to plan a fundraiser or two (and designing a team shirt if we'd like). Let **Sammi** know by Friday, November 8 if you're interested in joining!

Team Bell Curve 2025
FRI. MARCH 7 FROM 5-9PM @ EQUINOX EAST 61ST ST

CYCLE FOR SURVIVAL
MEMORIAL SLOAN KETTERING | EQUINOX

BIOSTATS AT IAT

Samantha Brown, **Mithat Gonen**, **Jessica Lavery**, **Kathy Panageas** and **Karissa Whiting** presented "Considerations for clinico-genomic data analysis: Avoiding pitfalls and building reproducible workflows using {genomeverse} and {genieBPC}" at the Informatics Applications and Tools (IAT) meeting on September 17, 2024. The IAT Meeting is organized by Dr. Pete Stetson and John Philip to showcase work done by informatics groups across the institution. The team presented a reproducible clinico-genomics workflow, including programmatically pulling data into the R environment, creating analytic cohorts, and annotating mutation, fusion, and copy number alteration genomic data while appropriately accounting for variation across sequencing panels. Additionally, they highlighted important statistical considerations, including adjustment for multiplicity and left truncation. The R packages presented reflected work contributed by multiple members across the Biostatistics Service. The packages are updated on an ongoing basis as they evolve to meet the analytic needs of the group.

ESMO 2024

Andrea Knezevic presented joint work with **Glenn Heller**, Michael Morris (Prostate), and others at the European Society of Medical Oncology (ESMO) Congress Poster Session, Sept 13-17 in Barcelona, Spain. Their project validated the use of an automated bone scan index as a progression endpoint in two phase III studies of metastatic castration resistant prostate cancer patients.
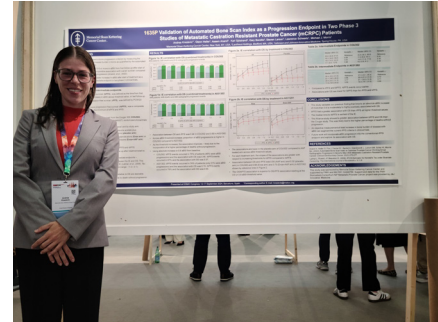

SMR 2024

The Biostatistics group had a strong presence at this year's Society Melanoma Research Congress in New Orleans.

Caroline Kostrzewa presented the poster, "Deciphering Melanoma-Specific DNA Methylation Patterns Using Cell-Type Deconvolution Analysis."

Xinjun Wang presented the poster, "A Novel Statistical Approach for Identifying Driver Mutations through Mutual Exclusivity in Cutaneous Melanoma." In this presentation, they demonstrate MAGPIE, a new statistical approach that uses mutual exclusivity to identify potential driver genes in cutaneous melanoma.

Mohammad Yosofvand presented the poster, "Cell Type Classification from Multiplexed Molecular Tissue Imaging using Convolutional Neural Networks."

Alli Reiner presented work on developing prognostic melanoma subtypes by analyzing deconvoluted tumor- and TME-specific gene expression signatures. The study identified four tumor-state subtypes and four TME subtypes in a cohort of stage 2 & 3 cutaneous melanomas.
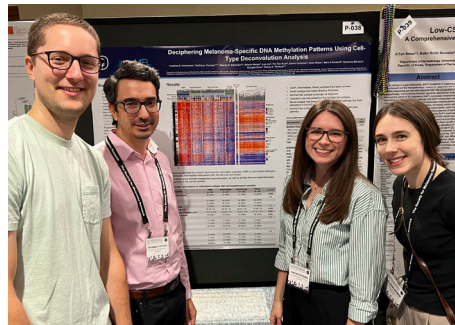

JSM 2024

Li-Xuan Qin and **Karissa Whiting** held a roundtable for "Harnessing Multi-institutional Genomic Data for Reproducible Biomedical Research."

Ayyüce Begüm Bektaş presented the poster, "Nonparametric Density Estimation using Predictive Recursion."

HACKATHON

Thank you to **Patrick Augello, Maria Bromberg, Sammi Brown, Yufei Deng, Grace Gallagher, Hannah Kalvin, Caroline Kostrzewa, Jessica Lavery, Jasme Lee, Sabrina Lin, David Nemirovsky, Alli Reiner, Nick Toumbacaris, Dani Vaithilingam, Charlie White,** and **Karissa Whiting** for their participation in Data Dojo's Fall 2024 Hackathon as team We're Skewed! Together, the research biostatisticians tested, and added functionality and documentation to several existing and to-be-debuted R packages, including {bstfun}, {copynumR}, {genieBPC}, {genomeverse} ({gnomeR}, {cbioportalR}, {oncokbR}), and {staRgate}; added to and updated departmental resources; improved Epi-Bio GitHub documentation; and continued their effort to streamline data processing for adult BMT patients who received CAR-T infusions. We look forward to the next hackathon in spring 2025!

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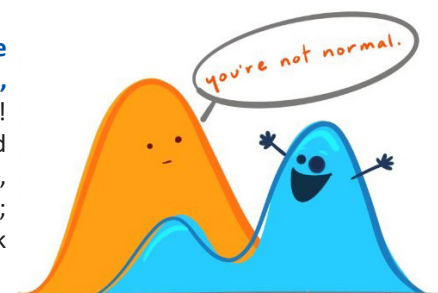
NEW STAFF

Patrick Augello, Assistant Research Biostatistician

Patrick recently joined the MSK Department of Epidemiology and Biostatistics, bringing experience from his time at Temple University, where he completed his MPH in Applied Biostatistics. Previously, he worked as a biostatistician at the University of Pennsylvania, focusing on ophthalmologic research. With a background in applied mathematics, Patrick combines his analytical skills with a passion for solving complex problems, using statistical methods and machine learning to uncover insights that contribute to improving health-care outcomes. He is excited for the opportunity to apply his experience to cancer research at MSK. Outside of work, Patrick is an avid traveler and enjoys discovering new places to hike.

Maria Monroy Iglesias, Research Scholar

Maria joined the Department of Epidemiology and Biostatistics as a postdoctoral research scholar with Dr. Elizabeth Kantor. She earned her medical degree from Universidad La Salle in Mexico City and later pursued a master's in translational cancer medicine and a PhD in cancer epidemiology at King's College London. Passionate about advancing cancer research, Maria is eager to contribute to impactful discoveries in the field. Outside the lab, you can find her spending time with her dog, who has a nose for uncovering data trends.

Maria Klimchuk, Data Assistant

Maria joins the Department of Epidemiology and Biostatistics as a Data Assistant, helping investigators with their research. Before working at MSK, she earned her bachelor's degree in Mathematics and Statistics with a minor in Psychology at Rutgers University. She hopes to grow her data and programming skills through her new role. She is also looking forward to learning more about cancer and healthcare as she works on different projects and studies. Maria is excited to work with others to make a positive impact in cancer research.

Jacob Mobolaji, Postdoctoral Research Associate

Jacob joins the Epidemiology and Biostatistics Department as a postdoctoral research associate, working primarily with Dr. Mengmeng Du. Previously, he received his Master of Science and Ph.D. in Demography from the Department of Demography and Social Statistics, Obafemi Awolowo University, Nigeria where he also serves as a lecturer and researcher in health demography. His research focuses on the social determinants of health outcomes and inequalities in vulnerable populations. Jacob is excited to refocus his demographer's lens on cancer research, especially working on the social context of cancer. He is delighted to key into MSK's mission of "ending cancer for life."

Vincent Pisztora, Research Scholar

Vincent has joined the Department of Epidemiology and Biostatistics as a Research Scholar with Ronglai Shen and Colin Begg. Vincent received his PhD in Statistics from Pennsylvania State University where he developed methods which incorporate difficult-to-specify properties (like interpretability) into model behavior. His research interests include learning in low information settings (e.g. semi-supervised learning, transfer learning), analysis of multi-modal data, and cancer biology. Outside the office, he is enthusiastic about volleyball and his dog Momo.

Danielle Vaithilingam, Assistant Research Biostatistician

Danielle Vaithilingam has joined the Department of Epidemiology and Biostatistics as an Assistant Research Biostatistician. She was a part of the 2023 GEMS Summer program in Epi Bio, and later earned her master's degree in Biostatistics from Duke University School of Medicine in 2024. Danielle is passionate about genomics and how genomic data can enhance the understanding and treatment of cancer. She is excited to join the MSK team and contribute to the institution's mission of "ending cancer for life."

PERSONAL MILESTONES

Sankeerth Jinna married Manasi Dharia on August 10th, 2024.

Tiffany Trafalgard gave birth to Lilyanna Mae Trafalgar on September 17, 2024, weighing 6 pounds and 1 oz. The family is doing well.