



BIOSTATISTICS SEMINARS

Streaming online

- ❖ Feb 2, 2021 Venkat Seshan
MSK
- ❖ Feb 9, 2021 Andrea Arfe
MSK
- ❖ Feb 16, 2021 Yuan Chen
MSK
- ❖ Feb 23, 2021 Shuai Chen
Dept. of Public Health Sciences
UC Davis

COMPUTATIONAL ONCOLOGY SEMINARS

Streaming online

- ❖ Feb 15, 2021 Elana Fertig
Johns Hopkins
- ❖ March 15, 2021 Regina Barzilay
MIT

EPIDEMIOLOGY SERVICE MEETINGS

Streaming online

- ❖ Jan 31, 2021 Irene Orlow
MSK
- ❖ Feb 14, 2021 Colin Begg & Zoe Guan
MSK
- ❖ Feb 28, 2021 Ann Zauber,
Monika Laszowska &
Anne Hahn
MSK

POPULATION SCIENCES RESEARCH PROGRAM SEMINAR SERIES

Streaming online

- ❖ Feb 15, 2021 Otis W. Brawley
Johns Hopkins
- ❖ March 15, 2021 Chyke Doubeni
Mayo Clinic

HEALTH OUTCOMES RESEARCH GROUP SEMINARS

Streaming online

- ❖ Feb 18, 2021 Sean Mackey
Stanford
- ❖ March 18, 2021 Michaela Dinan
Yale

EDI COMMITTEE JOURNAL CLUB

Streaming online

- ❖ Feb 17, 2021 TBD

EPI BIO BOOKCLUB

Streaming online

Email [Richard Koppenaal](mailto:Richard.Koppenaal@mskcc.org) to join the Epi Bio Bookclub list.

- ❖ Feb 1, 2021 Dune
Frank Herbert



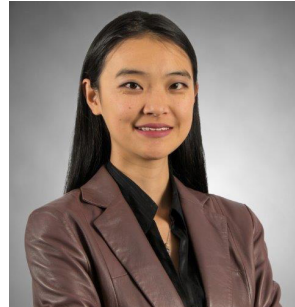
DEPARTMENT CHAIR - Colin Begg, PhD

EDITORS

Lauren Rogak, MA
Amethyst Saldia
Richard Koppenaal
Shireen Lewis, MPA
Julianna Reitz, MPA
Joseph Kanik

INTRODUCING DR. JIAN CARROT-ZHANG

Jian Carrot-Zhang, PhD, is a new Assistant Attending in the Computational Oncology Service. Her research focuses on understanding germline-somatic interactions in multi-ethnic populations. She develops computational and statistical approaches to characterize ancestral effects on the cancer genomes. Jian holds a joint appointment in the Clinical Genetics Service of the Department of Medicine to bridge the gap between germline genetics and somatic genomics. She has also led multiple research projects in collaboration with The Cancer Genome Atlas (TCGA) research network. Jian obtained her PhD in Human Genetics from McGill University and has trained at Dana-Farber Cancer Institute as a postdoctoral research fellow with Dr. Matthew Meyerson. Prior to MSK, she was an Instructor in Medicine at Harvard Medical School. Jian authored many publications in high-ranking journals and holds several awards including a K99 Award from NCI and a Banting Fellowship from The Canadian Institutes of Health Research (CIHR).



SUPPORTING MSK DURING OMICRON SURGE

MSK recently called for volunteers to be redeployed to understaffed departments throughout the institution impacted by the recent Omicron surge. Several members of Epi/Bio answered the call, including our very own [Shireen Lewis](#). In this issue, Shireen shares her experience working at Main Campus over the holidays.

My Redeployment Experience

I recently volunteered for redeployment to assist MSK's patient care and operations. My assignment was to check vaccination cards and registration forms for visitors at 1275 York Ave during the holiday break. Working with patients and family members enabled me to see the challenges during this most recent COVID spike. After the first few minutes, it was clear that our clinical colleagues have struggled with staffing shortages due to Omicron. Staff interfacing with patients are also faced with the task of keeping pace and communicating the ever-changing COVID guidelines in place for both patients and their visitors, who are eager to see their loved ones in the hospital. The work was physically and emotionally demanding, but it was also inspiring to see firsthand the resilience of the MSK staff. As someone filling in, there were times when I didn't know how to handle a situation, but I could count on the guidance and professionalism of my small team, consisting of a unit assistant, security guard and other volunteers, to navigate different situations. It truly was teamwork at its best. For me personally, working in a role removed from patient care, it was interesting to see how other areas of the institution function, especially in the COVID environment. I found the experience rewarding and am amazed by the dedication of MSK staff who are steadfast in their commitment to care for our patients.



Others who recently volunteered include [Anika Begum](#), [JJ Gao](#), [Nicole Rusk](#), [Sarun Sereewattanawoot](#) and [Samantha Vasquez](#). Thank you to all the Epi/Bio staff who volunteered for hospital redeployment at various times during the pandemic.

BRIDGE TO BIOSTATS

On December 14, the Bridge to Biostats (B2B) Committee hosted its 5th Virtual Biostats Day. This Biostats Day event was held for students from the City College of New York STEM Research Academy, a research program for NYC high school students with strong scientific skills. The B2B Committee, led by [Jessica Flynn](#) and [Hannah Kalvin](#), introduced these students to the field of biostatistics. Jessica and Hannah walked the students through a typical biostatistician's workday, the range of projects one might work on, and used exercises – such as "[What's going on in this graph?](#)" – to show them how biostatisticians think and approach problems.

The program also featured presentations from Celine Bien-Aim, a Data Coordinator at Columbia University Irving Medical Center, and Dr. Manisha Desai, Professor of Medicine and of Biomedical Data Science and Section Chief of Biostatistics at Stanford University. Both described their paths to becoming biostatisticians, challenges along the way, and why they enjoy working in public health.

To stay up to date on the Bridge to Biostats committee's activities and future Biostats Days, please follow [@Bridge2Biostats](#) on Twitter!

CYCLE FOR SURVIVAL

Team Epidemiology/Biostatistics

This is a reminder to please let Samantha Brown (brownS7@mskcc.org) know if you are interested in participating in the Epi/Bio departmental team for Cycle for Survival 2022.

Team Computational Oncology

Please see the directions below and/or reach out to Cynthia Berry (berryc@mskcc.org) for more information on the Comp. Onc. team for Cycle for Survival 2022.

Team Registration Instructions:

1. Go to the team page [here](#)
2. Click "Join this Team"
3. Enter the case-sensitive team password to join: componc
4. Follow the prompts to complete your registration
5. Make a kickoff gift to inspire donors to match your generosity!

Cycle for Survival will be held outdoors at Wollman Rink in Central Park on Saturday, May 21, from 1-5 PM.

STAFF FAREWELLS

Jeanette Ponte, who for the past 2 years supported regulatory needs across the department, has left Epi/Bio to continue her career at MSK. We wish her the very best in her new role as Project Manager with the Prostate Cancer Clinical Trials Consortium (PCCTC). Many of us have worked with Jeanette over the years and are grateful for her commitment and enthusiasm!

Niti Trivedi joined CHPO as a data assistant in 2019 and was quickly promoted to Data Analyst and worked on the projects within the Drug Pricing Lab. During her tenure Niti also joined BEACH and was integral in becoming the liaison from CHPO to the newsletter including project as well as staff updates and publications. This month, Niti has left MSK to join Peter Bach at Delfi Diagnostics. We wish Niti well in her role as a Medical Affairs Data Analyst and look forward to hearing about her work in the future!

After 7 years at MSK, **Renee Gennarelli** has left MSK to pursue the next stage of her career as a Quantitative Scientist at Flatiron Health. While at MSK, Renee was an integral part of the Center of Health Policy and Outcomes and the department at large. Her expertise in cost analysis, public policy, and health outcomes contributed to the success of countless projects within and outside of our department. We will miss Renee and wish her all the best!

Sophie Zimbalist joined our department and CHPO in the midst of the pandemic and was able to seamlessly tackle DPL projects as well as the departmental culture committee. We wish Sophie best of luck in her new role as an analyst at ClearView Healthcare Partners. We are grateful to Sophie's dedication and hard work and look forward to seeing what she does next!

PUBLICATIONS

Benjamin Greenbaum, with lead author Andrea Di Gioacchino and colleagues, published "[sgDI-tector: defective interfering viral genome bioinformatics for detection of coronavirus subgenomic RNAs](#)" in *RNA*. Coronavirus RNA-dependent RNA polymerases produce subgenomic RNAs (sgRNAs) that encode viral structural and accessory proteins. User-friendly bioinformatic tools to detect and quantify sgRNA production are urgently needed to study the growing number of next-generation sequencing (NGS) data of SARS-CoV-2. Authors introduced sgDI-tector to identify and quantify sgRNA in SARS-CoV-2 NGS data. sgDI-tector allowed detection of sgRNA without initial knowledge of the transcription-regulatory sequences. Authors produced NGS data and successfully detected the nested set of sgRNAs with the ranking M>ORF3a>N>ORF6>ORF7a>ORF8>S>E>ORF7b. Authors also compared the level of sgRNA production with other types of viral RNA products such as defective interfering viral genomes

MSK Lymphoma's Christina Lee, with **Benjamin Greenbaum** and other co-authors, published "[Prolonged SARS-CoV-2 Infection in Patients with Lymphoid Malignancies](#)" in *Cancer Discovery*. Coronavirus disease 2019 (COVID-19) infection results in both acute mortality and persistent and/or recurrent disease in patients with hematologic malignancies, but the drivers of persistent infection in this population are unknown. Authors found that B-cell lymphomas were at particularly high risk for persistent severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) positivity. Further analysis of these patients identified discrete risk factors for initial disease severity compared with disease chronicity. Active therapy and diminished T-cell counts were drivers of acute mortality in COVID-19-infected patients with lymphoma. Conversely, B cell-depleting therapy was the primary driver of rehospitalization for COVID-19. In patients with persistent SARS-CoV-2 positivity, they observed high levels of viral entropy consistent with intrahost viral evolution, particularly in patients with impaired CD8+ T-cell immunity. These results suggest that persistent COVID-19 infection is likely to remain a risk in patients with impaired adaptive immunity and that additional therapeutic strategies are needed to enable viral clearance in this high-risk population. Authors describe the largest cohort of persistent symptomatic COVID-19 infection in patients with lymphoid malignancies and identify B-cell depletion as the key immunologic driver of persistent infection. Furthermore, they demonstrate ongoing intrahost viral evolution in patients with persistent COVID-19 infection, particularly in patients with impaired CD8+ T-cell immunity.

Gordie Watt, Jonine Bernstein, Anne Reiner, Xiaolin Liang, Meghan Woods, Malcolm Pike and former QSURE student **Christine Lin**, published a paper in *NPI Breast Cancer* entitled, "[Mammographic texture features associated with contralateral breast cancer in the WECARE Study](#)." They aimed to evaluate whether mammographic texture features were associated with second primary contralateral breast cancer (CBC) risk, by creating a "texture risk score" using pre-treatment mammograms in a case-control study of 212 women with CBC and 223 controls with unilateral breast cancer. The texture risk score was associated with CBC (odds per adjusted standard deviation = 1.25, 95% CI 1.01-1.56) after adjustment for mammographic percent density and confounders. These results support the potential of texture features for CBC risk assessment of breast cancer survivors.

I-Hsin Lin and colleagues from Pulmonary Service and Thoracic Surgery Service published a paper in *Chest* entitled "[Shape-Sensing Robotic-Assisted Bronchoscopy \(ssRAB\) in the Diagnosis of Pulmonary Parenchymal Lesions](#)." This is the first study to provide comprehensive and substantial clinical evidence on the performance of this recently introduced technology ssRAB within a multidisciplinary, high-volume institution. Our pioneering research reveals a significant advancement in the ability to access and sample successfully traditionally challenging pulmonary lesions via the bronchoscopic approach, while maintaining a superb safety profile. Readers may also find their work featured on MSK website.

I-Hsin Lin and colleagues from Pulmonary Service published a paper in *Journal for ImmunoTherapy of Cancer* entitled "[Success and failure of additional immune modulators in steroid-refractory/resistant pneumonitis related to immune checkpoint blockade](#)." Pneumonitis related to immune checkpoint blockade is uncommon but can be severe, fatal or chronic. Steroids are first-line treatment; however, some patients are refractory or become resistant to steroids. Little is known regarding the outcomes and optimal management of patients in whom steroids are ineffective. Analyses were based on a MSK retrospective study to evaluate the clinical course, management strategies and outcomes of patients treated for immune checkpoint pneumonitis with immune modulatory medications in addition to systemic steroids. Findings suggested that additional immunomodulators can yield durable improvement, attained in over one third of patients. An improved understanding of the underlying biology of immune-related pneumonitis will be crucial to guide more precise and effective treatment strategies in the future.

Lauren Rogak and her U01 Moonshot colleagues published an article in the *Journal of Pain and Symptom Management* entitled "[Evaluating Treatment Tolerability Using the Toxicity Index With Patient-Reported Outcomes Data](#)." In this article, the authors present an undertaking of using a summary score measure (the toxicity index) which had been previously applied to clinician-reported CTCAE data, and instead applied it to PRO-CTCAE data from a clinical trial in order to present and discuss how to communicate tolerability to both patients and clinicians. This is the first time this toxicity index was applied to PRO-CTCAE data with adjustment for pre-existing symptoms of individual patient level data and evaluated as a tolerability outcome in univariate analyses. After rigorous analysis, interpretation and discussion, the authors determined that there was broad agreement between the toxicity agreement and other summary measures, however there were notable limitations and some challenges to interpretations. Overall, the toxicity index is a useful method when ranking patients from those with the least to most symptomatic adverse event burden. In summary, this study showed the toxicity index can be applied to PRO-CTCAE data. Though as a tolerability summary measure, further study is needed to provide a clear clinical or patient-facing interpretation of the toxicity index.

GRANTS

Aaron Mitchell was awarded a grant from the Department of Defense for his project titled “Improving Outcomes in Lethal Prostate Cancer through Guideline-concordant use of Bone Modifying Agents.” Other investigators on this project include Allison Lipitz-Snyderman and Susan Chimonas.

Andrew Vickers was awarded a grant from the Emerson Collective Digital Oncology Care for his project titled “Life-expectancy prediction for cancer treatment decision-making.” Other investigators on this project include Behfar Ehdai.

Benjamin Greenbaum was awarded an ASPIRE Phase II Award from the Mark Foundation for Cancer Research for his project titled “Bridging predictive models and precision immunotherapies.”

Helena Furberg, with Ari Hakimi from the department of surgery, was awarded a grant from the American Institute for Cancer Research (AICR), titled “Investigating the Immunologic Basis of the Obesity Paradox in Renal Cell Carcinoma.”

I-Hsin Lin was the awardee of “Improving Detection of AL Amyloidosis (IDEA) QuickFire Challenge” by Johnson & Johnson Innovation and will be the leading statistician on the program entitled “The Amyloidosis ACTION (Accelerating Diagnosis Through Big Data and Education Across Racially and Economically Diverse Populations) Study.”

Jian Carrot-Zhang, Christopher Fong, and Sanna Goyert were awarded a CCNY-MSK Partnership for Cancer Research, Training, and Community Outreach grant for their project titled “Comprehensive characterization of ancestry-associated immune features and response to immunotherapy across multiple cancer types.”

Sohrab Shah, Jian Jiong Gao, and Yulia Lakhman were awarded a Collaborative Research Development Grant - Microsoft AI For Health from the Ovarian Cancer Research Alliance for their project titled “Inferring mutational processes and patient stratification from standard-of-care clinical imaging.”

STAFF PROMOTIONS

- ❖ **Ashley Foglia** promoted to Sr. Application Analyst
- ❖ **Bradley Cohen** promoted to Sr. Project Manager
- ❖ **Jesus Gutierrez Abril** promoted to Research Associate
- ❖ **Noushin Farnoud** promoted to Principal Computational Biologist
- ❖ **Richard Koppenaal** promoted to Sr. Project Coordinator
- ❖ **Ronglai Shen** promoted to Attending
- ❖ **Sara Wood** promoted to Application Analyst
- ❖ **Stephanie Lobaugh** promoted to Research Biostatistician

NEW STAFF

Christy Rajcoomar, Administrative Assistant

Christy joins the Biostatistics Service as an Administrative Assistant. She previously worked in the Department of Medicine as an Office Coordinator for 2½ years in the Hematology service. Christy graduated from CUNY Queens College with a BA in Biology and a minor in Anthropology and is currently pursuing a master’s degree in Health Administration at Saint Joseph’s University. Her hobbies include travelling, reading, and hiking.



Jake Sauter, Bioinformatics Data Science Intern

Jake joins the lab of Elli Papaemmanuil as a Bioinformatics Data Science Intern for the MSK MIND Pan-Myeloid project. Jake completed his thesis “A High-Performance Pipeline for Flow Cytometry Clustering and Trajectory Inference” in the Papaemmanuil lab and continues to support and integrate this work into MSK MIND. Leveraging his background developing cutting-edge machine learning solutions for radio signal classification, Jake now aims to apply the skills he developed in computer science, statistics and machine learning to support better treatment and outcomes for patients.



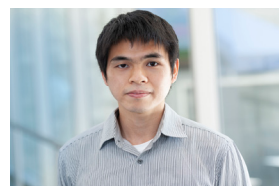
Konstantinos Liosis, Bioinformatics Software Engineer I

Konstantinos joins the Computational Oncology Service as a Bioinformatics Software Engineer I for the Elli Papaemmanuil Lab. Konstantinos holds a Computer Engineering & Informatics integrated MSc from the University of Patras, Greece, and recently completed his Computer Science MSc studies at the University of Calgary, Canada, working on cancer biomarkers discovery through both clinical and gene expression data. He is excited to join the Computational Oncology engineering team.



Sarun Sereewattanawoot, Postdoctoral Research Fellow

Sarun joined the Papaemmanuil Lab as a postdoctoral fellow focusing on using single cell technologies to investigate the relationships between chromosomal alterations and TP53 mutations in transitions of clonal hematopoiesis into hematologic malignancies. Sarun did his PhD studies in computational biology at the University of Tokyo under the mentorship of Prof. Yutaka Suzuki, working on multi-omics and gene network analysis of cell lines and clinical datasets. His undergraduate background was in medicine from Chulalongkorn University, Bangkok Thailand.



Stephen Martis, Computational Immuno-Oncology Research Fellow

Stephen joins the Computational Oncology Service as a Postdoctoral Research Fellow in the Greenbaum Lab. Stephen graduated from UC Berkeley with a PhD in Physics, where he modeled the interplay between evolutionary and ecological forces in microbial communities. He hopes to leverage this work in mapping out how the immune system can drive cancer evolution and how the tumor microenvironment can drive T cell differentiation.



Tiffany Cordero, Administrative Assistant

Tiffany joins the Computational Oncology program as an Administrative Assistant supporting Benjamin Greenbaum, Eduard Reznik, and Wesley Tansey. She previously worked at MSK’s Employee Health where she helped manage office operations and assisted new employees with medical clearance and flu compliance. Tiffany has been with MSK for nearly 5 years and is looking forward to furthering her career in the Department of Epidemiology and Biostatistics.



Tricia Park, Computational Biologist I

Tricia joins the Ed Reznik Lab in the Computational Oncology Service as a Computational Biologist to support the research efforts of the lab members. Tricia recently graduated from Cornell University with a Bachelor of Science in Computer Science and is looking forward to learning about and contributing to the various research projects at MSK.



STAFF CONGRATULATIONS



Charlotte Brierley, husband Tom and big sister Emily welcomed Isobel Ruth Cahill.



Xiyu Peng married Shaodong Wang in Central Park on November 12, 2021.

EPI/BIO SERVICE AWARDS

The 2021 Epi/Bio Service Awards were held virtually on December 2nd. A recording of the stream can be found [here](#). Congratulations to all of the recipients!

2021 Pin Recipients

- ❖ 5 Years - Nate Aiken
- ❖ 5 Years - Jessica Kenney
- ❖ 5 Years - Kelli O'Connell
 - ❖ 5 Years - Ken Seier
- ❖ 10 Years - Sean Devlin
- ❖ 10 Years - Prusha Patel
- ❖ 10 Years - Allison Lipitz Snyderman
- ❖ 15 Years - Joanne Chou
- ❖ 20 Years - Sharon Bayuga
- ❖ 25 Years - Tricia Neary
- ❖ 30 Years - Irene Orlov



HAPPY NEW YEAR

We hope everyone had a wonderful and safe time celebrating the new year! Please enjoy some holiday photos from departmental colleagues:



throwback of me next to Pride Rock