



SEMINARS WILL RESUME IN THE FALL

ORLOW LAB MOVING

After two decades, Irene Orlow's Molecular Epidemiology lab will be moving to the 10th floor of Schwartz to a brand-new renovated space. In the interim, the lab will temporarily move to the Lab Medicine Building on 327 East 64th street while the Schwartz space is under construction.

STAFF ACHIEVEMENTS

Samantha Vasquez was a finalist at Research Professional Day (RPD) for the 2022 Research Administrator Award of Excellence.

Samantha Brown and her team (**Joanne Chou, Esther Drill, Jessica Flynn, Zoe Guan, Hannah Kalvin, Richard Koppelaar, Jessica Lavery, Stephanie Lobaugh, Katherine Panageas, Venkat Seshan, Kay See Tan**) submitted a poster presentation at Research Professional Day (RPD) and was selected as a finalist for the poster, *Biostats Day: introducing Biostatistics to NYC students underrepresented in STEM fields*.

Yuan Chen was the recipient of the 2021 Sanford Bolton-John Fertig Award for her distinguished Doctoral dissertation in Biostatistics.

STAFF PROMOTIONS

Andrew Aukerman promoted to Bioinformatics Software Engineer II

Dylan Domenico promoted to Bioinformatics Software Engineer II

Xiang Li promoted to Bioinformatics Software Engineer II

Joseph McCarter promoted to Sr. Computational Biologist II

Henry Walch promoted to Computational Biologist II

Gaofei Zhao promoted to Bioinformatics Software Engineer II

SUMMER STUDENTS 2022

A special thanks to all of the summer students working in the department this year!

For a full list of all students, [click here](#).



DEPARTMENT CHAIR - Colin Begg, PhD

EDITORS

Prusha Patel, MPH
Lauren Rogak, MA
Amethyst Saldia
Richard Koppelaar
Shireen Lewis, MPA
Julianna Reitz, MPA
Joseph Kanik

QSURE SUMMER 2022

The department of Epidemiology and Biostatistics is delighted to welcome the **Quantitative Sciences Undergraduate Research Experience (QSURE) Class of 2022!** This summer, we have 9 undergraduate students, two working in Epidemiology, two in Computational Oncology, four in Biostatistics and one in Health Outcomes. The program will last 10 weeks, from May 31st through August 8th. Notably, this is the first time since 2019 that the QSURE students are in-person.

The students' time is divided between a hands-on research project carried out under the mentorship of our faculty and a series of scientific talks and educational modules. These include many seminars given by our faculty that open the students' eyes to the wide scope of quantitative science research. The students also attend responsible conduct of research workshops, R coding workshops led by **Karissa Whiting** and **Mike Curry**, and two talks with scientists outside of MSK: Megan Price of the Human Rights Data Analysis Group, and Machell Town of the CDC. This year we also added a brand new series, *Necessary skills for the quantitative scientist*, presented by **Andrew Vickers**.

Many thanks to our mentors, presenters, and Epi/Bio team members for making this a rewarding summer for our students. Please look out for a calendar invite for the 2022 QSURE Symposium on August 2nd and 3rd, during which the students will present the results of their research project.

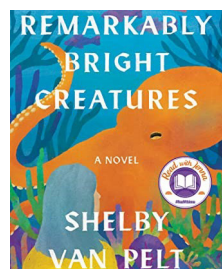


EPI/BIO COMMUNITY BUILDING INITIATIVE

The response to our departmental initiatives has been so enthusiastic – we are looking forward to more this summer!

BOOK CLUB

Please join us for the summer meeting of the Epi/Bio Book Club on Tuesday, August 2nd from 4-5 PM! The theme for this book club was "Beach Read" and we quickly learned that everyone has a very different definition of beach reads! In August, we will discuss *Remarkably Bright Creatures* by Shelby Van Pelt. If you are interested in joining Book Club, please send an email to **Richard Koppelaar (koppelar@mskcc.org)**.



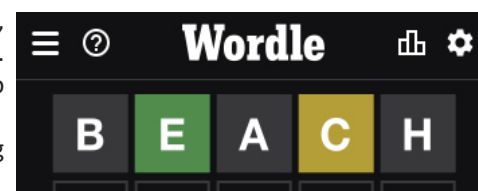
WARM WEATHER WEDNESDAYS

We will continue to host Warm Weather Wednesdays on the steps across the street from 485 Lexington at 1 PM. Feel free to bring lunch, a snack, a beverage, or just yourself!

WORDLE TEAM CHALLENGE

The second round results are in! A HUGE Congratulations to our newest winners: Team 2!

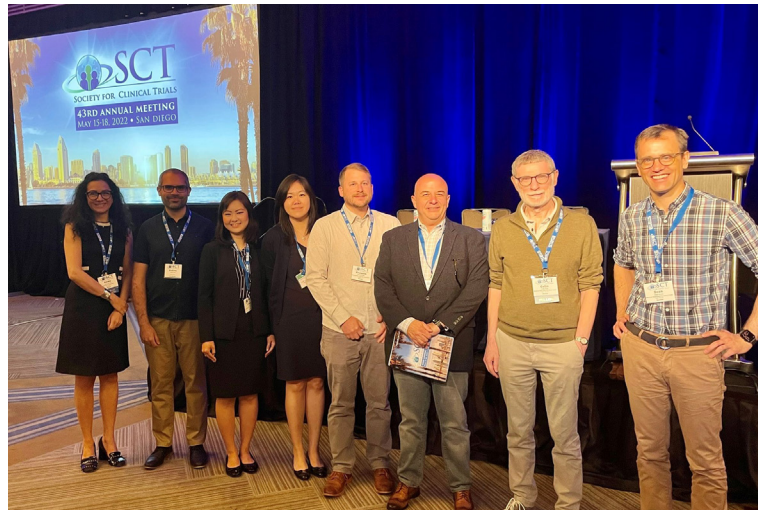
Made up of **Sammi Brown, Colin Begg, Gordie Watt, Charlotte Brierley**, and repeat winner **Lauren Rogak**. Team 2 gets bragging rights and a customized jumbo #2 pencil recognizing their Wordle prowess. The Community Building team is busy brainstorming new ideas but we want to hear from you too! Send your ideas to **Margaret Du!**



SOCIETY FOR CLINICAL TRIALS 2022 ANNUAL MEETING

The 2022 annual meeting of the Society for Clinical Trials (SCT) took place May 15-18. Outgoing President Mithat Gonen (2021-2022) hosted the event in San Diego, CA – the first in-person meeting since 2019. Fellow members Andrea Arfe, Colin Begg, Joanne Chou, Sean Devlin, Alexia Iasonos, I-Hsin Lin, and Kenneth Seier were also involved at various leadership and engagement levels. Highlights from the event include:

- ❖ **Alexia Iasonos** was elected as SCT Fellow – congratulations, Alexia!
- ❖ **Colin Begg**, past President and current Editor-in-Chief for SCT Journal, presented a report on SCT publications.
- ❖ **Andrea Arfe** presented a session, *Bayesian optimality of testing procedures for survival data in the non-proportional hazard setting*.
- ❖ **I-Hsin Lin** chaired a session to discuss the utilization of historical controls in clinical trials.
- ❖ **Sean Devlin** also chaired a session on novel dose-finding designs.



For learn more about this year's event, check out [@MSKBiostats](#) and [#SCT2022](#) on Twitter!

CYCLE FOR SURVIVAL 2022

Team Bell Curve and Computational Oncology participated in Cycle for Survival 2022 and raised a total of \$12,000! Congratulations to team captains, **Samantha Brown** (Epi/Bio) and **Cynthia Berry** (Comp Onc), and all the participants!

Epi/Bio Team Bell Curve participants (raised \$7,500):

Samantha Brown
Esther Drill
Hannah Kalvin
Richard Koppenaal
Shireen Lewis
Sabrina Lin
Kathy Panageas
Christy Rajcoomar
Alexandra Rizzatti
Samantha Vasquez
Gordon Watt

Comp Onc team participants (raised \$4,500):

Cynthia Berry
Tiffany Cordero
Ignacio Vazquez Garcia
Armaan Kohli
Minwei "Eric" Liu
Anisha Luthra
Arfath Pasha
Genesis Pineda
Sohrab Shah



STAFF CONGRATULATIONS



Sonia Persaud graduated on June 2nd from the CUNY School of Public Health and Policy with a MPH in Health Policy and Management.



Tiffany Cordero graduated from Hunter College with a Bachelor of Arts in Psychology. She completed this program while working full-time for MSK and graduated magna cum laude. She is so excited about achieving this goal and is considering returning to school sometime in the future to earn her Master's degree.

GRANTS

I-Hsin Lin received an award from Merck Investigator Studies Program (MISP) by Merck for her project entitled *Streptococcus pneumoniae serotypes recovered from cancer patients with pneumococcal pneumonia at a large urban cancer center (inpatient and outpatient settings)*.

Gordie Watt was recently awarded the "Childhood Cancer Survivor Study (CCSS) Career Development Award" for his proposal entitled, *Genetic modification of chemotherapy-associated subsequent malignant neoplasms*.

Andrew Vickers is the Subsite PI for the award R01 CA259173-01A1 *Pelvic fascia spARing radical prostatectomy TRIAL (PARTIAL)*. The prime institution for the award is Cornell and the PI is Jim Hu.

Benjamin Greenbaum recently received an award as the Subsite PI for the Stand Up to Cancer project *Integrative Analysis of Pancreatic Tumors with Neoadjuvant Therapy*. The prime institution for the award is New York University's Grossman School of Medicine and the PI is Alec Kimmelman.

PUBLICATIONS

A breakthrough clinical trial out of MSK, led by Andrea Cercek and Luis Diaz, has been reported in the *New England Journal of Medicine*, [PD-1 Blockade in Mismatch Repair–Deficient, Locally Advanced Rectal Cancer](#), that albeit small (<20 patients), showed complete remission in all patients, with minimal reported adverse events. Our department's own [Mithat Gonen](#) is a co-author on this manuscript, along with MSK colleagues from the Division of Solid Tumor Oncology, Pathology, Surgery, Radiation Oncology, and Radiology along with colleagues from Yale University. Profiled in the [ASCO post](#) noting that the “unprecedented” result “warranted its own session”, and in [The New York Times](#), calling the results “astonishing” as well as news outlets across the country. This single-arm phase II study is ongoing and will enroll 30 patients and are optimistic about consistent results. The authors highlight that it is imperative that these results are reproduced in a larger group of patients, as well as expand outside of the single institution. An incredible accomplishment by our MSK colleagues!

[Lauren Rogak](#) with her MSK colleagues, [Deb Schrag](#) and [Victoria Blinder](#), and their U01 Moonshot colleagues, including [Ethan Basch](#), recently published an important paper in *JAMA*, entitled [Effect of Electronic Symptom Monitoring on Patient-Reported Outcomes Among Patients With Metastatic Cancer: A Randomized Clinical Trial](#). This manuscript is the product of a long-term multicenter, interdisciplinary clinical trial led out of UNC, PRO-TECT. Building on previous work of this group including STAR (MSK # 04-020) and PRO-CTCAE, PRO-TECT used novel strategies to answer the question – does electronic symptom monitoring improve quality of life? In a population of adults receiving treatment for metastatic cancer, patients used weekly electronic symptom monitoring to report symptoms. This showed statistically significant mean improvements of approximately 2.5 points on a 0- to 100-point scale in QOL outcomes at 3 months. This trial demonstrated the feasibility, clinical utility and clinical benefits of utilizing the PRO-CTCAE in routine practice. The manuscript reporting the primary outcomes of this trial is forthcoming. In future work, these co-authors will be publishing about financial toxicity, analysis, and exploration of free text reporting of adverse events and the additional burdens faced within this patient population.

[David Hoyos](#), [Sohrab Shah](#), [Ignacio Vázquez-García](#), & [Benjamin Greenbaum](#) with their MSK and external colleagues recently published a paper in *Nature* entitled, [Fundamental immune–oncogenicity trade-offs define driver mutation fitness](#). The authors propose a unified theoretical ‘free fitness’ framework that parsimoniously integrates multimodal genomic, epigenetic, transcriptomic and proteomic data into a biophysical model of the rate-limiting processes underlying the fitness advantage conferred on cancer cells by driver gene mutations. Focusing on TP53, the most mutated gene in cancer, they present an inference of mutant p53 concentration and demonstrate that TP53 hotspot mutations optimally solve an evolutionary trade-off between oncogenic potential and neoantigen immunogenicity. Their model anticipates patient survival in The Cancer Genome Atlas and patients with lung cancer treated with immunotherapy as well as the age of tumor onset in germline carriers of TP53 variants. Their data indicate that immune selective pressure on TP53 mutations has a smaller role in non-cancerous lesions than in tumors, suggesting that targeted immunotherapy may offer an early prophylactic opportunity for the former.

[Jayon Lihm](#), [Yuval Elhanati](#), [David Hoyos](#), & [Benjamin Greenbaum](#) with their colleagues in Immuno-Oncology and external colleagues recently published a paper in *Nature* titled, [Neoantigen quality predicts immunoeediting in survivors of pancreatic cancer](#). The authors investigate how 70 human pancreatic cancers evolved over 10 years and find that, despite having more time to accumulate mutations, rare long-term survivors of pancreatic cancer who have stronger T cell activity in primary tumors develop genetically less heterogeneous recurrent tumors with fewer immunogenic mutations (neoantigens). Using a model of cancer clone fitness as the aggregate cost of T cells recognizing high-quality neoantigens offset by gains from oncogenic mutations they predict the clonal evolution of tumors to reveal that long-term survivors of pancreatic cancer develop recurrent tumors with fewer high-quality neoantigens. The authors submit evidence that the human immune system naturally edits neoantigens and present a model to predict how immune pressure induces cancer cell populations to evolve over time. More broadly, their results argue that the immune system fundamentally surveils host genetic changes to suppress cancer.

[Olga Lyudoviyk](#), [Yuval Elhanati](#), [Alexander Solovyov](#), [Benjamin Greenbaum](#), and other co-authors recently published [Impaired humoral immunity is associated with prolonged COVID-19 despite robust CD8 T cell responses](#) in *Cancer Cell*. The authors analyzed cellular and humoral immune responses in 103 patients with prior COVID-19 infection, more than 20% of whom had delayed viral clearance. Delayed clearance was associated with loss of antibodies to nucleocapsid and spike proteins with a compensatory increase in functional T cell responses. High-dimensional analysis of peripheral blood samples demonstrated increased CD8+ effector T cell differentiation and a broad but poorly converged COVID-specific T cell receptor (TCR) repertoire in patients with prolonged disease. Conversely, patients with a CD4+ dominant immunophenotype had a lower incidence of prolonged disease and exhibited a deep and highly select COVID-associated TCR repertoire, consistent with effective viral clearance and development of T cell memory. These results highlight the importance of B cells and CD4+ T cells in promoting durable SARS-CoV-2 clearance and the significance of coordinated cellular and humoral immunity for long-term disease control.

[David Hoyos](#) and [Benjamin Greenbaum](#) with their MSK and external colleagues recently published a paper in the journal *Science Translational Medicine* entitled, [Calreticulin mutant myeloproliferative neoplasms induce MHC-I skewing, which can be overcome by an optimized peptide cancer vaccine](#). They examined class I major histocompatibility complex (MHC-I) allele frequencies in patients with CALRMUT MPN from two independent cohorts and observed that MHC-I alleles that present CALRMUT neoepitopes with high affinity are underrepresented in patients with CALRMUT MPN. The authors speculated that this was due to an increased chance of immune-mediated tumor rejection by individuals expressing one of these MHC-I alleles such that the disease never clinically manifested. As a consequence of this MHC-I allele restriction, they reasoned that patients with CALRMUT MPN would not efficiently respond to a CALRMUT fragment cancer vaccine but would when immunized with a modified CALRMUT heteroclitic peptide vaccine approach. They found that heteroclitic CALRMUT peptides specifically designed for the MHC-I alleles of patients with CALRMUT MPN efficiently elicited a CALRMUT cross-reactive CD8+ T cell response in human peripheral blood samples but not to the matched weakly immunogenic CALRMUT native peptides. They corroborated this effect in vivo in mice and observed that C57BL/6J mice can mount a CD8+ T cell response to the CALRMUT fragment upon immunization with a CALRMUT heteroclitic, but not native, peptide. Together, the data emphasize the therapeutic potential of heteroclitic peptide–based cancer vaccines in patients with CALRMUT MPN.

20 YEAR CLUB 2022

This year MSK held its first 20 year club gathering in-person since 2019. Among those honored were [Sharon Bayuga](#), [Mithat Gonen](#) and [Venkat Seshan](#).



NEW STAFF

Grace Gallagher, Data Analyst

Grace joins the Epidemiology and Biostatistics Department as a Data Analyst to support the research of Kelli O'Connell, Elizabeth Kantor, Margaret Du, and Aaron Mitchell. Grace previously worked at MSK's Rockefeller Outpatient Pavilion as a Care Coordinator in the STGI department. She is currently pursuing her Master of Public Health in Biostatistics at NYU School of Global and Public Health.



Joseph Kholodenko, Senior Computational Biologist I

Joe joins Niki Schultz's lab and the Clinical Data Mining Team for the MSK MIND project building and operationalizing AI models that extract structured data from free text reports. Previously he served as a Data Engineer on the pathology engineering team where he worked on digital pathology projects and molecular data pipelines for PaigeAI. Prior to MSK, Joe worked as a Lead Data Science instructor at the Flatiron School and as an analytics consultant for sales and marketing organizations at Google.



David Nemirovsky, Assistant Research Biostatistician

David has joined the department as an Assistant Research Biostatistician. He is a native New Yorker, attended Hunter College and received his bachelor's degree in Statistics and Biochemistry, with a Yalow Honors Scholarship and received the Shirley Kurmin Mazur Award in Mathematics. He recently completed his master's degree in biostatistics from Columbia University. He will primarily be working with investigators from the leukemia service.



Noah Peeri, Postdoctoral Research Fellow

Noah joins the department of Epidemiology and Biostatistics as a Postdoctoral Research fellow under the mentorship of Margaret Du. Noah recently graduated from the University of North Texas Health Science Center with a PhD in public health sciences: epidemiology. His research interests include cancer health disparities and cancer epidemiology methods. Noah's dissertation examined the associations between sleep traits and lung cancer risk using both traditional and non-traditional epi methods (e.g., Mendelian Randomization)."



Jeff Quinn, Bioinformatics Engineer IV

Jeff joins the Tansey Lab as a Bioinformatics Software Engineer IV. Prior to joining the lab Jeff worked and consulted as a Data Engineer for a variety of start-ups and early stage tech companies. Jeff graduated from Emory University with a B.S. in Biology.



Jahan Rahman, Computational Biologist II

Jahan joins Ben Greenbaum's lab as a Computational Biologist where he'll be leveraging various sequencing technologies and bioinformatic tools/algorithms to support research at the Center for Hematologic Malignancies. Jahan previously studied Computer science at NYU and worked at Neville Sanjana's Lab at the New York Genome Center as a research assistant-where he built CRISPR gRNA-generation and analysis algorithms, designed CRISPR screens, and developed web-tools. He looks forward to working towards advancing precision medicine frameworks and engaging with physicians and scientists-alike to improve patient outcomes.



Klajdi Rrasa, Senior Research Technician

Klajdi Rrasa has joined the department as a Senior Research Technician in Irene Orlov's lab. He obtained a master's degree in Molecular Biotechnology from the University of Tirana, Albania, in 2017. His experience includes the manipulation of DNA/RNA obtained from viruses and viroid particles. Klajdi will participate in the Genes, Environment, and Melanoma (GEM) study. The current project is designed to help distinguish -at diagnosis- melanomas with a greater potential of being lethal from those that are very unlikely to lead the patient to recurrence and/or death. Klajdi's contribution will include the evaluation of inherited genetic factors that may modulate the risk for developing melanoma with poor prognosis. He will also contribute to other ongoing studies, including the MSK Pancreatic Tumor Registry, by managing biospecimens and associated data.



Nick Toumbacaris, Assistant Research Biostatistician

Nick joins the Epidemiology and Biostatistics Department as an Assistant Research Biostatistician. Nick graduated from Rollins School of Public Health at Emory University with a Master of Science in Public Health in Biostatistics in May. While at Emory, Nick worked as a Research Assistant for the Biostatistics Shared Resource at Winship Cancer Institute.



Michele Waters, Sr. Computational Biologist

Michele Waters joins the Computational Oncology Service as a Sr. Computational Biologist and data scientist in the Nikolaus Schultz Lab and Clinical Data Mining (CDM) group. Michele has a PhD in Biomedical Engineering and was an Insight Data Science Fellow prior to joining MSK. Michele's work in the CDM group will involve collaborating with researchers, oncologists, data scientists, and engineers to develop ML and NLP infrastructure for the automated extraction and standardization of clinical data elements from unstructured text, to support projects in the Schultz lab and across the institution for the advancement of precision cancer patient care. Michele is also passionate about the mentorship and recruitment of women and underrepresented minorities into STEM fields; she hopes to continue making an impact at MSK by advocating for their success in higher education & beyond.



Charlie White, Assistant Research Biostatistician

Charlie has joined the department as an Assistant Research Biostatistician after working as a graduate research assistant in the department. He recently graduated from NYU's School of Global Health with a master's degree in biostatistics. He is interested in studies involving quality of life outcomes and will also be working with investigators from interventional radiology and radiation oncology.



STAFF FAREWELLS

Sene Martin joined Epi/Bio in 2021 as a Clinical Research Coordinator and supported the research efforts of Andrew Vickers. She also worked with the Advanced Reports team on testing and quality assurance. She recently moved to the DigITs department as a Research Project Associate under Dr. Neil Shah. Sene always brought so much positivity and enthusiasm to her work and we wish her all the best in her new role!

Stacey Petruzella will be transferring to the Prostate Cancer Clinical Trial Consortium (PCCTC) as the Project Manager leading a multi-center clinical trial. Over the past 11 years in the department, Stacey has been integral in advancing research across several cancer sites. With Helena Furberg, she worked extensively on bladder and kidney cancer studies such as DETER, RESOLVE, and studying body composition and the obesity paradox. With Sara Olson and more recently Margaret Du, Stacey helped lay the foundation for the Epidemiology of Endometrial Cancer Consortium (E2C2), for which she navigated a maze of regulations and managed dozens of collaborative studies across 37 international sites. Although we will miss Stacey tremendously, we are very excited for her transition into the world of therapeutic studies. We wish Stacey much success in her new position!

Amethyst Saldia recently transferred to the Department of Medicine as their new Data Research Project Manager in the Adult Bone Marrow Transplant Service. She started her career at MSK 11 years ago as a Research Study Assistant and moved her way up to managing staff as a Clinical Research Supervisor. Amethyst provided mentorship and support for her RSAs/CRCs, many of whom have continued their careers in research. Her work has been dedicated to MSK's Pancreatic Tumor Registry and its affiliated studies, which is currently led by Margaret Du and Dr. Vineet Rolston (previously led by Sara Olson and Dr. Robert Kurtz). She has been instrumental in growing the registry and many new partnerships. Amethyst was also a long-time editor of the departmental BEACH newsletter. She honed her editorial, grammatical skills and used her intricate attention to detail to make the newsletter a great success. We will miss Amethyst greatly, especially her positivity, mentorship, party planning and social gatherings. We wish her all the best in her new department!

Sara Tabatabai has left the department after 3 years of service working with investigators from the Center for Health Policy, Health Outcomes, and Epidemiology services. She will be attending the Master of Arts in Public Policy with a certificate in Research Methods program at the University of Chicago. We wish Sara all the best with her move and graduate program!

After 8 years in Health Outcomes, **Ryan Weber** has taken the next step in his career. He has taken the position of Business Intelligence Analyst in the Health Informatics group. Ryan was the lead analyst on the Webcore and Amplio initiatives for the last several years. His management of the applications, databases, data processing, along with training of junior team members was essential to his team's success. His attention to detail and dedication was a boon to the team. His presence will definitely be missed but we are happy he has kept his talents within MSK. We wish him much future success!

MEET THE EDITORS

Each BEACH issue is the result of your contributions as well as the efforts of a dedicated team of editors. Here are the folks who work hard to keep you in the loop on Epi/Bio updates! **Interested in joining the team?** E-mail **Joey Kanik (kanikj@mskcc.org)** for more info!

Joey Kanik, Administration (he/him)

Please recommend a TV show that you've seen recently:

"Better Call Saul is phenomenal. Riding the coat tails of Breaking Bad, it brings to the table amazing acting, writing and cinematography making it a prequel story I actually care about and proves that lightning can strike twice."

Where can someone go for a good lunch or snacks around the office?

"Nothing I have purchased from Dainobu has ever disappointed me."



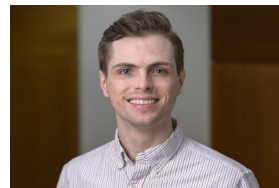
Richard Koppenaal, Administration (he/him)

Please recommend a TV show that you've seen recently:

"I really enjoyed Severance on Apple TV...this is not a comment on our current employer!"

What is your favorite restaurant in NYC?

"Malai Marke on 6th street - great Indian food."



Shireen Lewis, Administration (she/her)

Please recommend a TV show that you've seen recently:

"Really enjoyed 'Maid' on Netflix. Even more compelling because it was based on a true story."

What is your favorite restaurant in NYC?

"S'MAC East Village - best mac and cheese ever!"



Prusha Patel, Epidemiology (she/her)

Please recommend a TV show that you've seen recently:

"The Gilded Age. It's similar to Downton Abbey but in NYC and Chrisine Baranski is amazing."

Where can someone go for a good lunch or snacks around the office?

"Urbanspace on Lexington Ave"



Julianna Reitz, Computational Oncology (she/her)

Please recommend a movie that you've seen recently:

"The movie Everything, Everywhere All at Once. It was really good and surprising! It felt really creative, and I thought it was very funny. I haven't laughed that hard at a movie in a long time."

If you had to delete all but 3 apps from your smartphone, which ones would you keep?

"Oh gosh, I don't know. Snapchat? My email? And my photo app - for photos of my dog."



Lauren Rogak, Health Outcomes (she/her)

What is your favorite restaurant in NYC?

"Il Buco."

If you could bring back any fashion trend what would it be?

"Give me all the 90s flannel shirts, oversize shirts and doc martens (oh wait, I think they are back?)"



Amethyst Saldia, Epidemiology (she/her)

Where can someone go for a good lunch or snacks around the office?

"Dainobu is the best place to go for hot food and the best snacks around."

If you could bring back any fashion trend what would it be?

"JNCO jeans."

