Honoring our Graduates

Check out our spread recognizing Sackler 2020 graduates, many of whom defended virtually.

NYU Researchers Unite in Response to the Pandemic

Description of the efforts taken by the Institute for Systems Genetics (ISG) to create rapid testing protocols and protective face shields for medical workers.

The Story of PPE2NYC, a Non-Profit Founded by NYU Medical Students

An interview with Sackler student Mericien Venzon about the non-profit she helped create that provides PPE to frontline medical workers.

COVID-19 and the BLM Movement

Learn how we can strive for a more inclusive culture within academia.
HELLO, SACKLER!

Congratulations on completing another year of graduate school! As the year ends, it is time for your 2019-2020 Student Council to say goodbye. When the spring semester began, we were gearing up for what resulted in a tremendously successful PhD recruitment season. As always, interviews were made so successful by all of you, Sackler, where you volunteered your time and energy to show prospective students what our community has to offer. Very soon after, COVID-19 came and the semester became a whirlwind of change and uncertainty. Much of what we’ve considered commonplace, from long days in the lab and happy hours at Albion, changed to Zoom calls and baking endless loaves of bread. Despite the unexpected, students in our community stepped up in volunteering to make face shields, donate PPE, hold journal clubs, and make sure their friends and neighbors were supported. We established the Sackler Community Slack as a means for all to share cooking and exercise tips, partake in bookclub, and generally stay in touch and updated on recent events. All the while, students have continued their training, passing qualifying exams and defending theses. We are immensely proud of how our community continues in these times, emanating empathy and determination. As we look forward to the upcoming year, it is difficult to say what lies ahead. But what we know is that with a supportive community such as ours, we can look up and onwards. We’re excited for this upcoming year when we can get to know incoming students and see what the new student council has planned! Thank you, Sackler, for making our time on student council so rewarding. We hope that we helped in strengthening bonds in the community and made this place feel more like home!

Stay happy and healthy,

SSC 2019-2020
Graduation typically coincides with a discussion about career paths or a reflection of your journey to this milestone. However, this year’s graduation was clouded under the shadow of the COVID-19 pandemic, which has affected us all in countless ways. Whether you stayed on campus or were able to relocate to be with loved ones, the stress and anxiety of the unknown and what this ‘new normal’ will look like is having a profound effect on all of us. And just when some of us began to take steps to get used to this ‘new normal’, we learned of the horrific events in Minneapolis. It is difficult to find the appropriate words to convey how heartbreaking it is for our black communities, and us all. We are all aware that so many people suffer injustice under the pervasive racism and failed political system. These facts need to be openly acknowledged, confronted, and eradicated.

Our community, for now, remains 6 feet apart and masked. Maintaining connections under these circumstances is challenging and yet so important right now. We are continuing to think of creative ways to engage our students, making sure each of you feels safe and respected, and that these written words turn into action. Diversity, equity, and inclusion should be threaded into every initiative and considered when developing online courses and planning for virtual interviews in the next admissions season. We have always strived to do this, but in this new environment of social distancing, it becomes even more critical.

We also want our students and alumni to take advantage of our community after graduation. We had planned to launch our inaugural Alumni Reunion this spring, to bring back graduates, provide networking opportunities, and learn about their various career paths. Although that had to be canceled, we are excited to announce our recent partnership with Graduway, through which we will build an online platform for alumni and students. While we have all become comfortable with connecting virtually, we hope this platform will allow alumni to stay connected with each other and to reach out to current students that may be considering various career options.

With our tenure at Sackler now reaching 6 years, this year’s graduates included several students from our first matriculating class (2014) and our first student council (2013). We were looking forward to celebrating and taking pictures with all of you in your academic attire and meeting your families. Although we could not congratulate you in person, all of you are in our thoughts, and we can’t wait to hear about the fantastic paths you will each pursue. The absence of the physical ceremony of graduation certainly does not lessen the reward and pride you should feel with your monumental accomplishment.

In past years, Naoko has shared a recipe for the graduates as a remembrance of their time in the program. This year, she is sharing her recipe for whole-grain banana bread, since it has been a go-to for her at many breakfast gatherings.

Please keep in touch with us, and we look forward to seeing you all soon.

Congratulations again!

All the best,

Naoko and Susanne

---

**Whole-Grain Banana Bread**

**Batter**

- 2 cups thoroughly mashed bananas (4-5 medium)
- ½ cup vegetable oil
- 1 cup brown sugar
- 2 large eggs
- 1 tsp vanilla extract
- 1 cup all-purpose flour
- 1 cup whole wheat flour
- 1 tsp baking soda
- ½ tsp baking powder
- Pinch salt
- 1 tsp ground cinnamon (optional)
- ½ cup chopped walnuts, or other mix-ins such as chocolate chips, sunflower seeds (optional)

**Topping**

- 1 Tbsp sugar
- ½ tsp ground cinnamon

**Directions**

1. Preheat oven to 350°F. Lightly grease a 9” x 5” loaf pan.
2. In a large bowl, stir together the mashed banana, oil, sugar, eggs, and vanilla. Thoroughly combine the ingredients including mix-ins if using.
3. In another bowl, mix the dry ingredients and then add to the banana mixture. Scoop the batter into the prepared pan. Mix the topping ingredients and sprinkle over the batter.
4. Bake for 60-75 minutes until a thin knife inserted into the center comes out clean.
THE SACKLER ADMINISTRATION

You can find...
Dr. Naoko Tanese in the Skirball 3rd Floor Administration area
Dr. Susanne Tranguch in MSB 222
Dr. Tim Requarth in MSB 220

The rest of the Sackler Administration can be found in MSB 228
As scientists, the availability of personal protective equipment (PPE) was practically a guarantee. A few months ago, I never would have believed that they would become a limited commodity. However, when this crisis hit, the medical community faced an unprecedented shortage of PPE. Suddenly, the same gloves and masks that we took for granted became incredibly scarce. Medical personnel no longer had enough equipment to keep themselves safe as they treated patients. To combat this PPE shortage, a group of medical students here at NYU Langone Health formed a non-profit organization called PPE2NYC. I sat down (over zoom of course) with one of the founders, MSTP student Mericien Venzon, to discuss the organization and its impact on the community.

What is PPE2NYC and what do you guys do?
When we started, it was a coalition of medical students from all over New York and we created a centralized way to get donations and get requests for PPE. By doing that, I think we were able to come up with the most efficient way to go from a PPE request to getting the PPE to where people need it. When we started, people with PPE donations could donate one of two ways. One way was that they could go to our website, find a drop off location in their area and drop their donations there. If you could not make it to a drop off location, another way to donate was to register your donation on our website. We would then match that donation with a request we received from medical residents on our resident hotline. The resident could then go to collect the PPE from the donor themselves. Eventually, we also ended up having a mailing address for people outside of New York who wanted to donate.

Where have most of your donations come from?
A lot of the donations in the beginning were from businesses that use these masks and N95s. We got huge donations from veterinarian offices, nail salons, construction agencies and more. Then as we started building a network on Instagram and people began sharing our posts and telling other people to donate, a lot more businesses began donating. Even artists in the city, who use N95s to spray paint, began making huge donations. Most recently, we’ve been getting large donations from Go Fund Me campaigns that have raised money and found ways to buy masks from China.

How did the idea for this organization come about?
I think we all remember that week where other cities were beginning to close. That week, I was listening to the news coming out of Washington State and California where COVID hit first, and they were already experiencing shortages. As someone living in New York, where they were predicting that the numbers were going to be even worse, I thought it would be best to start collecting PPE as early as we could, before it got to the point where we were at a shortage. That’s when me and two other MSTPs, Samantha Lux and Dhaval Dixit, joined forces and started collecting PPE from labs and sending them to Bellevue. Soon afterwards, we were on a conference call with other medical students at different schools in New York to talk about their respective PPE collection efforts and strategies. We then realized that having a centralized system run by all of the schools together would be more efficient.

"As someone living in New York, where they were predicting that the [number of COVID19 cases] were going to be even worse, I thought it would be best to start collecting PPE as early as we could."
The response to this effort has been overwhelmingly positive. Were you surprised by the outpouring of community support that you received?

It was really surprising how successful the project was, especially the resident hotline. You would think that people wouldn’t want strangers to come to their homes to collect PPE, but people just really wanted to help however they could. We also ended up really blowing up on social media. Some celebrities even ended up sharing our page to their followers. Pretty soon after, different news outlets started talking about us like Forbes, the New York Times and CNN. It was overwhelming and very unexpected how successful it became in such a short amount of time. We were happy about it though, because the more exposure we got in the news, the more requests and donations we received, so we were able to help more people.

"We’re there to make sure they can do their job, and they’re doing their job so people stay healthy. It really felt like there was some camaraderie."

In some cases, you were able to oversee the deliveries yourself to some of the hospitals that were hit the hardest. What was that experience like for you?

We actually did a big delivery around the time that Elmhurst and Brookdale were in the news. It was really a morale boost. After working nonstop for two weeks at that point, it was nice to finally meet the people that we had been texting through the hotline and go to these places. And even though these people were dead tired, they would always be smiling and super grateful for the donation. It was nice to also feel like you’re all working together for one purpose. We’re there to make sure they can do their job, and they’re doing their job so people stay healthy. It really felt like there was some camaraderie. It was almost unreal because I had seen Elmhurst in the news the day before and saw the tents where the bodies were being held and seeing it in person really hit home for me. But it also gave me more motivation to keep doing what we had started and really confirmed that what we were doing was meaningful.

As of the end of April, PPE2NYC has collected over 250000 items and distributed them to over 40 hospitals across the city. In addition to continuing to provide PPE to the hospitals that need them the most, the group has begun to distribute some of the items to other community centers such as homeless shelters, the fire department and nursing homes. In this time of fear and uncertainty, the emergence of different volunteer efforts across the city has been nothing short of inspirational, and PPE2NYC is no exception.

Amicha Robertson is a 2nd year PhD student in the lab of Dr. Ken Cadwell, where she studies host-parasite interactions in the intestine. Outside of the lab, she enjoys reading, listening to musical soundtracks, and taking pictures of cool things and cool people.
HOW CANCER PREPARED ME FOR THE QUARANTINE

March 17th, 2020

The day I sent an email to my PI, letting him know that I would be returning to my family in Toronto, Canada the following day to wait out the COVID-19 pandemic.

March 17th, 2015

Exactly 5 years prior, I rang the “Victory Bell” on the 4th floor of Princess Margaret Cancer Centre, signaling the completion of my final round of the R-CHOP chemotherapy regiment.

By Sheena Faye Garcia

In retrospect, it’s funny that March 17th once again marks the day before I started another bout of self-isolation. And in a way, this quarantine has been a bit of a strange throwback for me.

In 2014, I was diagnosed with stage II primary mediastinal large B-cell lymphoma, a form of non-Hodgkin’s lymphoma. I was told that treatment would consist of 6 rounds of chemotherapy followed by a month of radiation, a process that would take about 6 months.

Chemotherapy was administered in 3-week cycles. The first day of the cycle was spent at the hospital, where I’d undergo a physical checkup before various drugs were intravenously pumped into me for 6 hours. The following 20 days were spent at home, recovering from the side effects of chemo before the next cycle began.

Since the purpose of chemo is to kill off fast-dividing cells (among which, unfortunately, include normal immune cells), during these 3-week periods, I would be severely immunocompromised. To ensure my safety, I was forced to drop out of university and spend the 6 months of treatment at home. My susceptibility to disease made the outside world “dangerous” – I was hardly allowed to leave my home or see my friends in person.

So when I woke up in my old room this time, knowing full-well that I’d be spending my foreseeable future stuck here instead of attending classes or working at the lab, I realized that in a sense, I’ve been through this exact situation before.

Fortunately, the circumstances now are far better than 5 years ago. This time around, I don’t have an 11.7 cm-wide tumour in my chest trying to kill me. I have all my hair, and I don’t have to take Prednisone and anti-nausea pills after my breakfast every morning. I also have some leftover face masks and gloves for when I need to go outside!

However, health aside, the greatest advantage I have is that I’m starting off this quarantine with all the lessons I learned from the last - namely, how to deal with self-isolation.

You see, cancer took a toll on me both physically and mentally. Most people imagine that the toxicity of chemo would be the most difficult aspect of treatment, but for me, the side-effects paled in comparison to the thoughts that came up as I sat alone at home: in particular, the worry over what was happening, the fear due to the future’s uncertainty, and the loneliness of having to hide my feelings in fear of burdening others.

QUICK FACTS

PRIMARY MEDIASTINAL LARGE B-CELL LYMPHOMA (PMBCL) is a cancer caused by the uncontrolled proliferation of B-lymphocytes, a type of white blood cell. PMBCL is a subset of diffuse large B-cell lymphoma (DLBCL) that starts in the thymus instead of a lymph node, spleen, or bone marrow.

R-CHOP CHEMOTHERAPY is the gold standard treatment for many lymphomas. It is an acronym for the 5 drugs used in the treatment: Rituximab (an antibody against CD20, a surface protein on B-cells), Cyclophosphamide, Hydroxydaunomycin (also called doxorubicin, a topoisomerase inhibitor), Oncovin, and Prednisone.

18-year-old me 1 round of chemotherapy away from completing treatment for my lymphoma

DC 07/10/2020
I can confidently say that having wrestled with these emotions in the past prepared me well for the quarantine today. However, because I imagine our current situation is a new one for most of us, I wanted to share my experience in the hopes that they may help at least one other person out there.

And so, if you don’t mind, I’d like to share the three key lessons I learned:

1. Social isolation does NOT mean you’re alone

Chemo would occur in 3-week cycles, with the first week of every round always being the roughest physically due to the side-effects of the drugs. To help me get through the side-effects, my mom would take the week off work. Ironically though, despite the severe physical symptoms, the first week was never the worst week because I at least had someone to keep me company.

The weeks that really made the process of chemotherapy so horrible were the ones I spent alone at home. With so much time alone with my thoughts, and without much communication from friends who, at the time, were in the thick of midterm season, I found myself falsely believing that there was absolutely no one who cared about me and how I was feeling. The depression hit me hard, and it took months for my introverted self to finally reach out to someone.

The problem with physical isolation is that it gives off the illusion that we’re alone. Especially as our lives slow down and we stop having “reasons” to message our friends and family, the lack of exterior communication may cause us to fall into the thought trap of assuming that ‘no one cares about us’.

However, this just isn’t true! If the loneliness ever gets to you, reach out to ANYONE: be through social media, texting, phone call, FaceTime, or whatever! You are NOT a burden. I also encourage you to check up on friends you haven’t chatted with in a while and make sure they’re doing alright. I’m sure any one of us would appreciate a solid “yo what’s up” from a friend. We’re all in this together!

2. It’s okay to not be productive at every given moment

This is a lesson that took me months to realize. Before cancer, I always used to imagine life as a linear path: finish high school, go to university, get a degree, then start a career. At the time, I had just started my first year of university. I remember spending days making this master list of courses I needed to take each year to get my biochemistry degree in four years. So, when cancer forced me to drop out of school for 6 months, it felt like the rug had been pulled out from under me.

It was terrifying to have this roadmap – this “linear path” you’ve made for yourself – absolutely derailed by something completely out of your control. The anxiety I had over the lack of control in my life was amplified with each wasted day I spent at home during treatment. Knowing that all my peers were living their normal lives, racing ahead of me while I was stuck and unable to do anything at home drove me into this perpetual loop of frustration and disappointment.

Maybe many of you can relate to this sentiment when you think about all the things you planned to do before coronavirus blew up. Even now, I mourn the loss of all the experiments I planned to do between March and my qualifying exam. Spending all this time away from the bench, the natural reaction might be to feel guilt or regret. However, don’t beat yourself up over not being as productive as you were pre-COVID era, and don’t view this time spent in quarantine as time “wasted”.

Back then, what really helped me was thinking about those 6 months as a “pause button” on life. All of this is temporary, and I knew that I’d hit the ground with more motivation than ever as soon as chemo finished! For those reading this, I almost ask that you indulge yourself with all of this extra time - get some rest, finish those books and movies you’ve been meaning to get to, and I hope that when this pandemic is over, we can all share in the gratitude of being able to return to our normal lives.

3. Cherish your health!

This one is a simple, but profound one. With a deadly virus gripping the world, it’s easy to understand just how quickly our way of life can be taken away by a disease. This is the most powerful lesson I learned from both cancer and COVID-19: Health is a privilege. Without it, we can’t do much else.

Sheena Faye Garcia is a 2nd year PhD student in the Molecular Oncology and Tumor Immunology program and a proud cancer survivor. Her current work in the Pagano lab examines E3 ubiquitin ligases in cancer.
2020 Graduates

Dr. Anamaria Alexandrescu
Dr. Sameer Aryal
Dr. Maayan Baron
Dr. Lauren Bayer Horowitz
Dr. Samuel Becker
Dr. Lili Blumenberg
Dr. Kristina Boguslawski
Dr. Timothy Borbet
Dr. Cristina Castro-Rivera
Dr. Cynthia Chen
Dr. Maximilien Courgeon
Dr. Camila Delgado
Dr. Julia Derk
Dr. Katherine Eyring
Dr. Ivan Gando
Dr. David Hernandez
Dr. Marcus Hines
Dr. Kevin Kleffman
Dr. Lena Lau

Dr. HongHsi Lee
Dr. Rose Levenson-Palmer
Dr. Qiuling Li
Dr. Nataniel Mandelberg
Dr. Patricia Martin
Dr. Jose Montoyo Rosario
Dr. Alex Penev
Dr. Harikrishna Rallapalli
Dr. Marvin Sandoval
Dr. Susan Sheng
Dr. Krystal Sotolongo
Dr. Vladislav Sviderskiy
Dr. Emily Swanzey
Dr. Kayan Tam
Dr. Peter Tonzi
Dr. Eric Wang
Dr. Hannah Weber
Dr. Jason Wong
Dr. Katharine Lu Yang
Dr. Yu Zhao
Sackler 2020

CONGRATULATIONS!!

PhDs

FROM PUERTO RICO WITH THANKS TO FAMILY AND FRIENDS FOR ALL THEIR LOVE AND SUPPORT
¡Los amo!

#ImADoctorNow  #NYU2020  #WormsRule

07/10/2020

THE SACKLER MESSENGER  11
Mask-off, Mask-on

My personal journey through COVID-19 in two countries

By XINGCHEN LIU

On April 15th, New York Governor Cuomo signed an executive order to mandate public face-covering amid the COVID-19 pandemic. Masks quickly gained new significance: they are shields on the healthcare frontline, symbols of neighborly compassion. By covering faces, they unmask the cultural and political unity and division that cast the new American life.

January 21st, 2020 was the first day of my trip to visit my family in China. When my first flight landed in Beijing, my mom texted me about a new virus resembling the one that had caused SARS spreading in Wuhan. Although the infection number was low, the news rippled across the country and dominated all headlines. We all remembered SARS, the atypical pneumonia that haunted the year of 2003 - a triggering word in my distant memory that feels like a thick cotton gauze face mask smothering my face.

Fearing the new virus to become SARS act II, the public responded with sweeping actions, starting with face-covering. The young generation particularly became the fierce advocates for masks, taking on their "uncultured relatives" online for not faithfully obeying the rule.

In fact, masks are not a new cultural phenomenon in China. When the smoggy air gradually engulfed the country and turned the vision of the 2010s into a yellowish blur, masks were the last shield against the roaring industrial revolution that fed 1.6 billion people. They also became a desperate political statement against the plastic society: that the environment matters, that humanity matters. But this time, masks embodied a new meaning of openness to science and facts, representing an attitude of vigilance and adaptation to any ongoing challenges. Naturally, I put my mask on, with the intention of not only keeping the germs away but also respecting a new form of political correctness.

On what would be the last day when masks were still common commodities under normal supply, my mom and I went to a pharmacy and got 10 regular blue surgical masks for around 2 CNY (40 ¢) each. The epidemic quickly gained its dominance and took a chokehold on every household by the Chinese New Year on January 25th. The severity of the disease, digitalized to a case number, crept up. I saw miles of cars in line to get out of Wuhan the night before officials locked down the city – the first move of its kind in modern history. Mask donations from across the world reached Wuhan, healthcare workers all over the country headed to the epicenter for its relief. Within a week, the country bonded together against the common enemy and collectively decided to 'cancel' the new year. But the invisible virus had its own way to confound and deceive – as the choreographed dance at the national stage moved on, hysteria in local communities settled in. Masks all over the city were out of stock and the prices of available online stocks skyrocketed. Soon, they morphed into a target of anxiety and greed. Having them became a luxurious safety net for millions of near paralyzed families.

On January 31st, just one day before the border closure to China, I got on one of the last flights from China to New York. The late-night E train at JFK felt like a

"Don’t stockpile masks..."
- The New York Times
March 10th, 2020

"Just about every health expert Vox has spoken to has said there’s little evidence to support the use of face masks for preventing disease in the general population...That’s why the CDC advises against the use of masks for regular Americans..."
- Vox
March 12th, 2020
time machine, transporting me from an apocalyptic present towards a blissful past. I took my mask off.

Life was on pause when I was asked to self-quarantine at home for 2 weeks. The world outside went on – the primary election was still a thing – a fairytale-like wonderland of early February. After the quarantine, my parents suggested I wear a mask while on the train to protect myself, but I declined every time. It was bizarre how my mindset changed simply on where I was. I argued that masks in China were mystified, and few solid studies had ever confirmed the effectiveness of masks to protect healthy individuals from getting the infection in public, that they only prevented the infected ones from transmitting viruses to others. They got frustrated with my rebelliousness. I got tired of the anxiety they projected to me.

To my credit, when the pandemic crept up in the US, masks were left out from all conversations, and the media even urged people to not bother wearing masks in public. Gradually, simmering racist and xenophobic sentiments against Asian Americans and Chinese people led to numerous discriminatory or even violent acts against us. I kept my head down during my daily commute, maneuvering through the uneasiness and paranoia in each train ride. Being Chinese amongst this societal anxiety was hard enough, wearing something ‘too east Asian’ and ‘unAmerican’ to emphasize my otherness would even make it worse.

And then, I got it. Cold sweat, headache, shortness of breath. Hospitals were overwhelmed by severe patients and I was asked to stay away. It was March 18th, I couldn’t get a test, but I knew I was the extra one of whatever the official number was. I started to wear a mask and gloves and sanitize everything I touched at home for the fear of transmitting the virus to my partner. Unfortunately, true social distancing in a one-bedroom apartment wasn’t realistic - he fell ill too. COVID-19 used to be an abstract part of my academic thinking, like numbers on graphs and figures in panels. But when my burning lungs and his piercing pain kept us from sleeping, when we searched on Google for the nearest hospital in case of emergency, the fear of being victims of the contingent shook me to the core.

Water, Tylenol, thermometer. Our symptoms began to improve a week later. On April 1st, we went outside for the first time, masks on. Pacing on the empty sidewalk on 50th street, bathing in the most harmonizing sunlight, we ambled to Hudson River where the USNS Comfort ship was docked. I remembered when the ship arrived, I was still in the midst of my fever, lying powerlessly on the couch. But seeing a symbolic ship arriving in this chaotic city in the mission of its millions of residents’ rescue strangely brought some comforts. The giant red cross on the front seemed even bigger than what I had seen on TV, facing a silent city that had just fallen asleep for the first time in a hypnotizing atmosphere.

Having adopted my new survivor’s identity, I infused all emotions that were boxed in during this humbling recovering process in my mask: fear, hope, gratitude, and guilt. If I hadn worn it on the days before I fell ill, I could’ve put my fellow early commuters who didn’t have the privilege of working from home in a safer place. I saw people scattered in the tiny parks as I started appreciating every bit of joy sparkling out of their innocence – what a strange thing to say by a twenty-seven-year-old. I realized my mask didn’t hide, but instead revealed my humanity. Silence is not normal in this city; facemask is not normal in this country. But perhaps we can all take comfort in being not so normal in times when normalcy loses its meaning.
When NYU was in the midst of deciding whether the university would remain open or closed, one of the things that I kept hearing from everyone was “plan on what you will do at home to stay productive.” Since then, I have seen and heard many opinions of people who either agree or disagree with this thought. The aisle seemed to be split between using this time to make self-improvements and abandoning all sense of productivity for a sense of a rarely-felt peace. In light of this fact, I decided to reach out to some of my fellow graduate students to see which camp they were in.

Essential staff, of course, have been working tirelessly and deserve our utmost appreciation. Essential graduate students are currently maintaining animal colonies, lab equipment, and are currently working on COVID-19 related experiments. While the finer details are still unpublished, these projects are studying everything from the viral particle to the immune response and our students are working closely with the hospital staff.

Of the non-essential graduate school students, 100 graduate students and post docs and roughly 50 lab technicians are currently signed up to be volunteers. For two months now, volunteer projects assisting the COVID-19 response have provided support to those medical staff on the front lines in many different ways. In addition to volunteering, those that are not required to be active in lab are absolutely keeping up their work ethic at home. Several students told me about the papers they are editing, the grants they are writing, and qualifying exams they are preparing for. Several classes have been moved online and several students have signed up for online classes that they weren’t planning on taking in the first place. Productivity seems to be inherent in a graduate student’s mentality.

That being said, these same people have undoubtedly made time for all the things that lab normally outcompetes. The Sackler Student Council slack channel has started a book club. Baking has become extremely popular now that we have time, and recipes for what seems like an endless amount of bread types are having their 15 minutes of fame. As for entertainment, I wouldn’t doubt that we are single-handedly financing Nintendo’s Animal Crossing and Netflix. Finally, many have taken the time to define a routine for exercising regularly while they have the flexible schedule to do so, which I applaud immensely.

So what’s the consensus? The aisle does seem to be split with some opting to prioritize work and some opting to self-improve. But, in all my interviews I noticed that most students are balancing working from home, volunteering, and logging more hours on their Nintendo switch. Even if we stay at home and we are not allowed to socialize in person, the students and post docs of the Sackler graduate program have still found a way to work hard, play hard and stay connected. It seems that our community is extremely resilient and is adapting to this pandemic, despite the stress and isolation it brings.
HELP CREATE THE SACKLER MESSENGER!

What is the Messenger?
The Sackler Messenger is a student newsletter that is written, edited, and produced by Sackler graduate students.

Who reads it?
Primarily Sackler students, faculty, and staff, but all issues are available for anyone to read through the Sackler website.

How can I contribute?
Pitch an article idea. Do an interview. Write up a story. Take pictures. Help with editing and layout.

Why should I get involved?
Advertise your new research, club, etc. Improve your writing skills with peer feedback. Produce a piece you can add to a science communication portfolio. Help us diversify the student voices in the Messenger.

Want to get involved with a future issue?

Have feedback or an idea about how we can improve?

CONTACT US:
Britney Martinez  Editor britney.martinez@nyulangone.org
Lisabeth Greene  Staff Advisor lisabeth.greene@nyulangone.org
This spring, we are experiencing an unprecedented health crisis. While most of the labs are shutting down or working from home, a few groups of people at the Institute for Systems Genetics (ISG) believe that they have the potential to positively influence the situation. Founded in 2014 and led by Dr. Jef D. Boeke, the research teams in ISG take a systems approach to understand the information in human biology and diseases. Throughout the years, the institute has built a team to work with multiple automation systems to speed up high-throughput experiments.

When COVID-19 broke-out in New York City, they believed that the institute’s platforms and resources – and most importantly the brainpower and the passion of the people – could help our medical system to combat COVID-19. The leading effort is to utilize the automation system in the lab to achieve high-throughput detecting of coronavirus. By combining the Echo Acoustic Liquid Handling system with 1536-well LightCycler qPCR system, the Boeke lab compressed qPCR reaction down to a volume of 0.5-2 µL, which not only greatly reduces the cost of reagents, but also retains the accuracy of the detection is a high-throughput fashion. Meanwhile, the highly integrated Genome Foundry system at ISG allows handling of the reaction plates fully automatic, thus reducing the labor requirements for diagnosis. With this goal in mind, the “Special Weapons and Tactics” (SWAT) teams at ISG were established, including the Viral RNA Extraction Team, RT-qPCR Team, IT Team, and special teams on acquiring personal protective equipment (PPE). Immediately, more than 30 volunteers from ISG and beyond participated in these efforts.

High-throughput viral detection

To achieve high-throughput viral detection, three SWAT teams work synergistically. Postdoctoral researcher Jon Laurent of the Boeke lab leads the Viral RNA Extraction SWAT team to establish a fast and high-throughput pipeline for extracting RNA from nasopharyngeal swab samples. To achieve a safe working environment, they modified a tissue culture hood designated exclusively for RNA extraction. In addition, they implemented a heat-inactivation protocol which enables deactivating virus while maintaining viral RNA integrity for the following RT-qPCR reaction. Following RNA extraction, the RT-qPCR SWAT team, led by Paolo Mita, a research instructor in Boeke lab, uses the Echo Acoustic Liquid Handling system and Cobra liquid dispenser to prepare the small-volume reverse transcription (RT) and qPCR reaction. In addition to these wet-lab efforts, the IT team, led by ISG faculty Dr. David Fenyö, developed an IT system for one-step reading and tracking the sample information and the corresponding testing results. The efforts from the SWAT teams enable streamlined processing of patient samples. Patient samples were kept in sealed and barcoded tubes which can be automatically read into the IT system. The samples were then heat-inactivated and followed by viral RNA extraction through an optimized high-throughput extraction pipeline. The viral RNA samples were then subjected to a one-step RT-qPCR reaction in the automation system. Finally, qPCR results were automatically analyzed using the custom IT system to directly read out the diagnosis results. The ISG SWAT teams are now working.
with around 100 samples per day in the early phase and expect to handle ~15,000 samples per day if working at the full capacity, which would be more than five times of the NYU Langone’s current throughput.

**Manufacturing DIY Personal Protective Equipment**

With the massive increase of COVID-19 patients, our hospital system soon ran into short supply of PPE. Among the items in short supply are the face shields and masks. To resolve the shortage, ISG faculty Dr. Timothée Lionnet creatively came up with the idea of using 3D printing system to manufacture the face shields. With the help from Andrew Martin of Boeke lab, they made a prototype visor using the 3D printer in the lab. To ensure the tight wearing on head, the team inserted foam padding underneath the visor and an elastic band to the two ends. Lastly, a layer of transparent plastic was assembled on the visor to achieve visibility and protection from droplet sprays. The prototype was tested by the clinicians and warmly welcomed. To enable massive production of 3D-printed face shields, the team made a manufacturing workflow from 3D printing to the final products. Multiple 3D printers from ISG and beyond are constantly printing visors at the rate of 2 pieces per printer per hour. The volunteers from NYU Tandon School of Engineering help to laser-cutting the plastic sheets. Finally, a group of graduate students and medical students, coordinated by Steila Sota and Yohana Ghebrechristos, are assembling the parts into functional shields while maintaining social distancing. In addition to face shields, the ISG volunteers also put efforts on acquiring masks. Lili Blumenberg and I have worked out a solution to make DIY masks using cotton fabric and AC filters. We made kits containing all the parts and essential tools for assembling the DIY masks, as well as a YouTube video instruction on how to manufacture masks at home. Yu (Jeremy) Zhao and I worked on coordinating donations from friends in China. We received donations of thousands of masks, N95 respirators, gloves, face shields and swabs, which all helped protecting our frontline healthcare workers and/or ISG volunteers. It’s worth mentioning that both Lili and Jeremy just defended their remarkable theses on May 4th. Congratulations and may the force be with both of you!

**“Hello World” at home**

Systems biology and quantitative thinking are increasingly important in the modern biomedical research. While most people are forced to stay at home, Dr. David Fenyö and a group of volunteers, including Sackler graduate students from ISG and ICM, recognized that it would be a good time for experimental biologists to take up some computational skills so that to empower their future research. David and volunteers soon organized three online courses: Python, Sequencing Informatics and Image Analysis. Starting from the very iconic “hello world” to more advanced sequencing data analysis, the course covered the most frequently used computational skills around the campus. More than 500 students, faculties and staffs registered the course and most sessions have had about 100–200 participants. For those who missed the live courses, videos are accessible at the Fenyö lab website (http://fenyolab.org/bi20).

**Every Action Matters**

This COVID-19 pandemic will for sure reformate our generation to think about life, career, as well as humanity in a more mature way. The most important characteristic I’ve observed during the pandemic is the responsibility from people in ISG and beyond. They take on the responsibility, trying to positively impact the difficult situation happening around us, and fight hard to find a solution. No matter big or small, every action matters.
COVID-19 and the BLM Movement: Redefining Academia
Fighting for a more inclusive culture

By Megha Kori

My New York has a million little landmarks: the rec center on 23rd, the samosa place on Houston. It has McNally-Jackson's and the Morgan; I know New York through its halal carts and open mics and people.

But for the past three months, the New York I knew has capsized – both in ways I couldn’t have predicted and ways I should have. While COVID-19 has disproportionately affected under-served communities nationwide, this pandemic has really just exacerbated the systemic racism underlying our society. As I write today, New Yorkers are gathering in all five boroughs to protest the murder of unarmed Black people at the hands of the police and to demand reform of a broken system. As we join these marches, argue with family members and call our councilmen, we are forced to ask: What’s going to happen to our city?

And as a graduate student, I wonder: What’s going to happen to academia?

Because the Black Lives Matter movement isn’t only about police brutality – it encompasses all issues of racial discrimination. And, although we know diversity begets innovation and critical thinking, academia is notoriously not diverse. According to the National Science Foundation’s annual survey of earned doctorates, less than 1% of graduate degrees awarded in the life sciences in 2018 went to Black or Latinx scientists. We’ve all heard the controversy surrounding affirmative action, seen in our own institution’s halls the homogeneity of faculty members – despite knowing categorically that sex and race play no role in intelligence or work ethic, we continue to have leaders in the field publish prejudiced ideologies with little consequence (see James Watson, Tim Hunt and Superior: The Return of Race Science by Angela Saini).

This is not to undermine recent efforts - following the horrific events of the past weeks, institutions and universities nationwide are releasing statements condemning the senseless violence of police actions. And yet, we continue to see few concrete steps being taken to change the way we address diversity and inclusion in STEM. And choosing to not change - to continue dismissing initiatives to increase representation or invest in surrounding communities – is, on one hand, predictive of scientific stagnation and, on the other, complicity in a system that has allowed police to murder over a hundred unarmed people in the past decade. If we are not actively addressing our own issues, we too are responsible for the perpetuated injustice.

So what can institutions do?

1. Foster avenues for scientific communication: COVID-19 was defined in part by the blatant spread of misinformation from authority figures. This spurred many scientists to begin engaging with the public in order to disseminate accurate knowledge surrounding disease spread and prevention. Academic culture has long been exclusive – articles are hidden behind paywalls and are typically written in obfuscating jargon. We should continue to encourage our scientists to communicate the impact of their work to the public: firstly, because it encourages an interest in science among those who may not have considered it as a career option and secondly, we have a social responsibility to translate our science for the people it affects.

As we begin to dissect the biological basis of psychiatric disease, examine the effect of food deserts on the gut-brain axis, and uncover the mechanisms of trans-generational trauma, this responsibility becomes increasingly important.

2. Value the person over their productivity: This pandemic brought about a uniquely universal crisis of mental health – and it has been incredible to see employers and PIs respect the sudden challenges many of their trainees felt. We must continue to respect the differential effects of social events on our trainees’ change - to continue dismissing initiatives to increase representation or invest in surrounding communities – is, on one hand, predictive of scientific stagnation and, on the other, complicity in a system that has allowed police to murder over a hundred unarmed people in the...
health because, as our population becomes more diverse, we will have scientists who come from different backgrounds (i.e. being a single parent, living with an invisible illness or having a higher probability of being racially profiled and targeted). Rather than having a 'one-size-fits-all' standard of productivity, performance expectations should be an ongoing conversation, just as they were during this global emergency.

3. Advocate for underrepresented minorities at the graduate, postdoctoral and faculty levels: Our institutions need to do a better job recruiting, hiring and supporting underrepresented minorities. This can mean a variety of things – investing in undergraduate programs designed to increase diversity in STEM (i.e. the Meyerhoff Scholars Program, the Chancellor’s Science Scholars Program or the Millenium Scholars Program), having institution-wide training on inclusive and anti-racist practices as well as on how to engage in productive discussion or having scientific institutions value service to the community as a metric during hiring decisions.

But these ideas are just the beginning – the recent pandemic and protests have made it clear that we can no longer ignore our role in fostering an inclusive society. As a city, we have the opportunity to reevaluate our perception of public safety and criminal behavior, to pursue rehabilitative rather than punitive justice and work with low-income communities to provide equitable access to health and educational services. And, as a scientific culture, we can prioritize the mental health of our members, demand diverse conference panels, seminar speakers and role models, and build spaces for tough conversations about unconscious and internalized biases. I was worried that the pandemic would irreparably change the life I was used to, that I would come back to a city I didn't recognize. Now, I'm hoping I do. We can do better. And we must - if not for ourselves, then, at the very least, for each other.

If you are looking to learn more about the BLM movement and the impact it could have on science & society, below is a list of educational resources to get you started.

You can also donate to the organizations listed below.

### Learn More: BLM Movement

**Educational Resources**

- **How to Be Anti-Racist**, Ibram Kendi: [https://www.ibramxkendi.com/how-to-be-an-antiracist-1](https://www.ibramxkendi.com/how-to-be-an-antiracist-1)

- **America’s Racial Contract is Killing Us**, Adam Serwer, The Atlantic: [https://www.theatlantic.com/ideas/archive/2020/05/americas-racial-contract-showing/611389/](https://www.theatlantic.com/ideas/archive/2020/05/americas-racial-contract-showing/611389/)

- **10 Steps to Non-Optical Allyship**, @mireillecharper, Instagram: [https://www.vogue.co.uk/arts-and-lifestyle/article/non-optical-ally-guide](https://www.vogue.co.uk/arts-and-lifestyle/article/non-optical-ally-guide)

- **We Cannot Stay Silent About George Floyd**, Patriot Act on Netflix

- **1619 Podcast**, Nikole Hannah-Jones, New York Times


McKenna FF, Babb JC, Miles L, Goff DC, Lazar M. Microstructural Lateralization in Males with Chronic Schizophrenia: A Diffusional Kurtosis Imaging Study. (2019). Cerebral Cortex.

*authors contributed to work equally
**STUDENT PUBLICATIONS**


Zhid, Yu, and Jef D. Boeke. CRISPR–Cas12a system in fission yeast for multiplex genomic editing and CRISPR interference. (2020). Nucleic Acids Research.

*authors contributed to work equally

---

**AWARDS & HONORS**

**Bennett Allen**, NYU Urban Doctoral Fellowship

**Maria Benitez-Jones**, NIH NRSA

**Douglas Biancur**, NCI F99/K00 Award

**Krystal Ching**, NSF GRFP

**Joel Encarnacion-Rosado**, HHMI Gilliam Fellowship

**Paige Leary**, NSF GRFP

**Michael Mosca**, NIH NRSA

---

**Victoria Osorio Vasquez**, NIH NRSA

**Stela Sota**, Jan Vilcek/David Goldfarb Fellowship

**Casey Vieni**, NIH NRSA

**Naoya Yamaguchi**, American Heart Association Predoctoral Fellowship

**Zidan Yu**, ISMRM (International Society of Magnetic Resonance in Medicine), summa cum laude. 2019
MESSENGER STAFF

Editor
Britney Martinez

Assistant Editors
Kristen D'Elia
Megha Kori
Bo Xia
Rebecca Plessel
Xingchen Liu
Sheena Garcia
Amicha Robertson

Contributing Writers
Megha Kori
Bo Xia
Rebecca Plessel
Xingchen Liu
Sheena Garcia
Amicha Robertson

Staff Advisor
Lisabeth Greene

GRADUATION DEADLINES

September 2020 Graduation Deadlines

Register on ALBERT at home.nyu.edu from February 3, 2020 to June 14, 2020
Preliminary thesis deadline: Friday, August 7, 2020
Final dissertation deadline: Friday, September 11, 2020

Resources for thesis preparation and the graduation checklist are available on our student community thesis defenses and graduation page, which you can access using your Kerberos ID.