

SCIENCE AND SUBJECTIVITY

VOL 4. 2021-2022



RCSS JOURNAL OF
UNDERGRADUATE
RESEARCH

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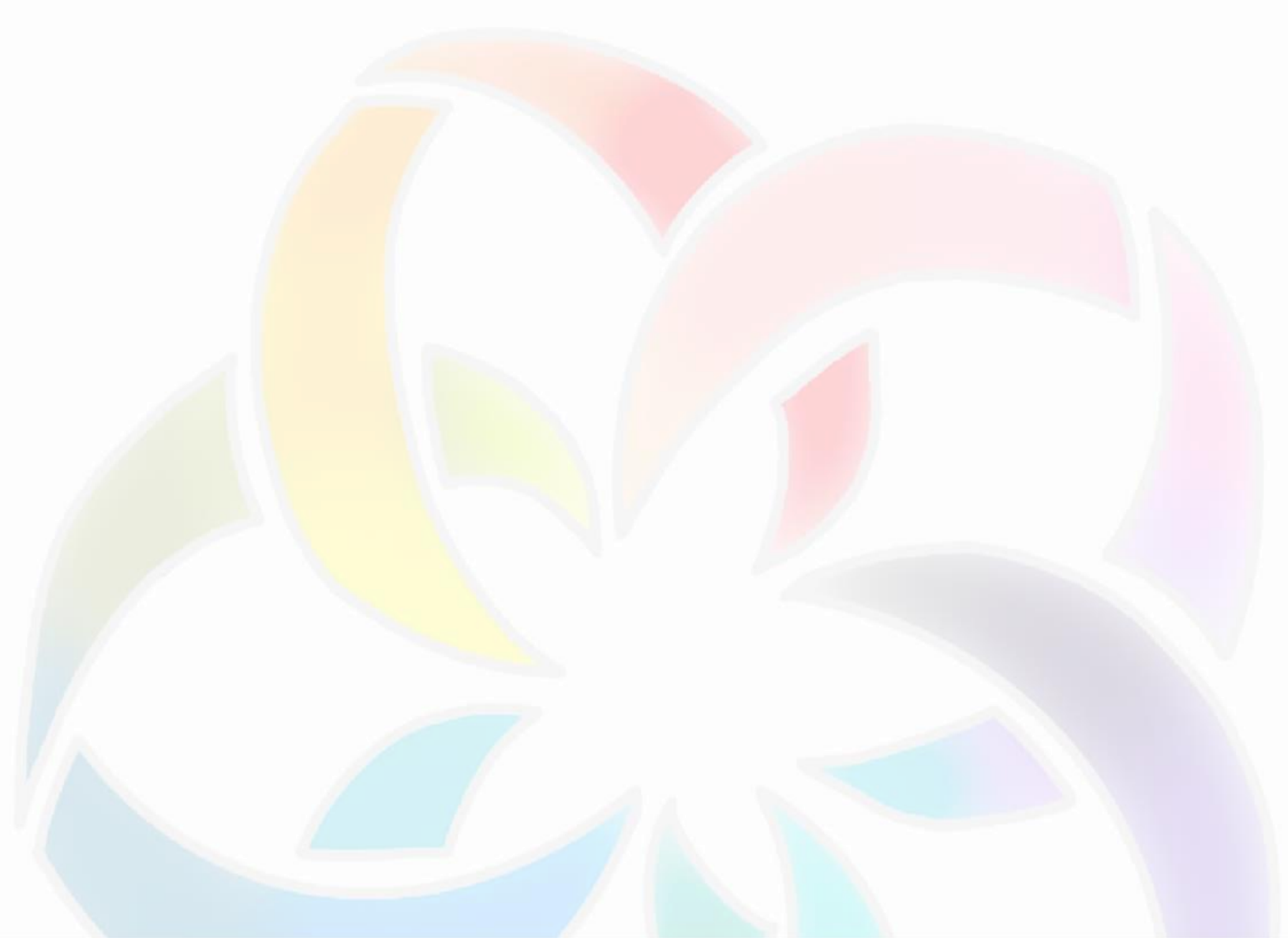




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RCSS: WHO WE ARE

"The mission of the Research Cluster for Science and Subjectivity (RCSS) is to provide undergraduates with the experience of taking responsibility for their own work as future scientists and physicians who will practice with a more complete understanding of their fields and of whom they care for.

We do this by providing stipends for students who will propose and carry out their own projects involving aspects of science, subjectivity and service. We envision future generations of scientists, physicians and other science-grounded professionals building their careers in realization of a more complete human experience.

Together, RCSS undergraduate interns currently explore:

- Spirituality and the arts in end of life care
- The role of race in how people experience healthcare
- Ethics and implications of genetics in healthcare

The first and only program of its kind at Columbia University, RCSS is led entirely by undergraduate students under the direction of Cluster Leader Dr. Robert Pollack. The experience of leading a project or developing a class has allowed students to investigate academic issues while developing real-world skills and providing the chance to impact their communities."

To learn more about who we are, visit

<https://rcss.scienceandsociety.columbia.edu/content/about-us>

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Kimia Heydari

Eilam Lehrman

Hannah Lin

Shalom Omollo

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Raisa Alam

Mariel Sander

Visiting Scholar

Krystal Cruz



A LETTER FROM OUR DIRECTOR

Dear Friends of the RCSS,

My first letter to you, which appeared in our first edition - the [2018 RCSS Journal of Undergraduate Research](#) - began this way:

"I have the great honor and pleasure to share this amazing brochure with you. You will see that our undergraduate RCSS interns - coming from all undergraduate schools here on campus - have taken up my original offer to own their projects while helping the commons of our operation, and have done so with such grace and power that all there is for me to say is how proud I am to be their student."

Nothing has changed in regard to my pleasure at having had the chance to serve as Director of the RCSS, nor has my pride diminished on seeing the diversity and quality of these reports of the work of our intern-scholars. And yet at the same time, everything is different. By the time the 2019 edition of this Journal was ready to be distributed in the spring of 2020, Covid had entered our lives, and to my embarrassment we were all so distracted that I even failed to include a letter in that issue.

From that second issue to this one, we have had to give up our lunches in Faculty House and adapt our programs, our ways of meeting, our friendships and our mentoring, to a new age of social distancing, digital meetings, and an ever-present cloud of uncertainty about the virus. And yet, with all that being so, I am still able to say how proud I am of our current intern-scholars, and how happy I am to remain their student.

Since we received a quasi-endowment in 2015 from my late dear friend, Harvey

Krueger CC '51, Law '54, we have continued to use it to fund these internships, and to reach out to colleagues at the University and elsewhere, who have been generous in their support of our student-interns' projects. You will see in this issue, for example, that the RCSS-intern-initiated courses American Studies "Life at the End of Life" and Comparative Literature "The Rhetoric of Science" have both received outside support; the former from Dean Valentini - whose departure we deeply regret - and the latter from the Center for Science and Society, of which the RCSS is one of seven Research Clusters.

This year an RCSS project generated support from a new source as well: the Provost of the University. So let me close by saluting the Intern-scholars whose creativity and clarity generated the project that has become the Department of Biological Sciences' Black Undergraduate Mentoring Program, BUMP-Biology. By bringing together RCSS alumni who are now Medical School students as well as members of the Black Alumni Council with faculty and graduate students in the department and with Black undergraduate Biology majors, the program has begun to provide a unique mix of mentoring opportunities, most recently with the additional support to the Biology department of a Provost's Diversity grant.

We have indeed only just begun.

Welcome to the RCSS!

Bob Pollack, Director, C'61

AN INTERACTIVE LESSON ON ORAL HEALTH

by **Priscilla Castro**

Developing a healthy dental routine early in life can reduce the likelihood of tooth decay and gum disease. As a dental intern in the San Francisco Bay Area, I assist a myriad of routine and rigorous dental procedures on children and adults alongside general dentists. I have witnessed the effects of poor dental habits transforming into horrendous dental problems for young children. My experiences led to no surprise when I read up on the statistic that more than half of children of ages 6-19 have dental caries (cavities) on their primary and permanent teeth. This has slowly decreased over time with the advancement of circulating dental products in the market. Unfortunately, children with low-income families are twice as likely to experience these effects. I became aware of the dental disparities within low-income minority communities while working at this dental office that primarily serves minority populations. Many of these families dismiss the importance of a routine 6-month cleaning to get rid of the plaque and tartar build-up that can lead to detrimental dental issues. Common precautions to prevent dental caries in children are applying fluoride varnish twice a year and treating at-risk permanent molars with sealants. Unfortunately, these risks cannot be addressed if families do not appropriate the time or finances to make an appointment. As a result, minor treatable diseases become emergency cases in the future. Many new pediatric patients have come in with multiple cavities. The lack of improper brushing and flossing techniques is the primary result of these dental problems. Most of these children have also revealed unhealthy diets at home. As a result, young children in these communities undergo extractions, pulpotomies (baby root canals), stainless steel crown preparations, and many fillings. Such procedures have become an extreme financial burden to low-income families. The money spent would have alternately been used for groceries, healthcare, and/or other bills.

The dental office that I work at is located in the East Side Union School District in San Jose, CA. The diverse demographic consists of a large population of minorities that reside in low-income neighborhoods, which are potentially subject to such dental problems. The dental office dedicates time to helping the community by presenting an interactive lesson on oral health and healthy eating

habits to prevent dental disease. We have created a live skit by using white and pink t-shirts with velcroed "sugar bugs" to represent teeth and gums. The dentists go around each student with a giant piece of floss while making sure to wiggle it around each crevice. A big toothbrush then scrubs each tooth to rid of the debris in circular motions. Kids enjoy this part of the lesson with lots of giggles. The fun and humorous interaction we have had with the children has helped instill the lesson they were taught and apply it at home. Afterward, we introduce the students to different food items and ask them if they represent good or bad foods. We explain why they are good or bad and emphasize the need to eat in moderation with a balanced diet. Then the classroom is broken up into small groups to practice techniques taught on toothy stuffed animals. We also make time for questions and answers during this session. At the end of the lesson, each student is gifted with an informational pamphlet and a dental kit of their own. The smiles that beam from the students are so rewarding. I hope that we made a big impact on their day-to-day dental hygiene routine to help prevent future problems in their oral health.

The dental office has volunteered around our community in hopes to target the disproportionate rise in dental caries affecting children in low-income families as well as preventing tooth decay in children caused by improper dental habits. I have taken inspiration from my experiences in work and service all the way to New York City to address the same issues. I envision an annual interactive lesson in preventative dental care that would engage children in elementary schools to practice better oral hygiene. A group of volunteers and a dentist can present a 45-minute class to each grade level (K-3) to effectively display the concept of cavity prevention using props and visual demonstrations. At the end of each lesson, toothbrushes, floss, toothpaste, and an infographic will be handed out to the students to encourage the practices learned that day. I would like to target a similar diverse demographic that I think Upper Manhattan embodies including Washington Heights and Harlem. In the long run, I hope that proper oral hygiene will promote a healthier lifestyle while preserving the longevity of patients' teeth.

I am in the process of seeking help from Columbia University College of Dental Medicine and the Mobile Dental Center to continue educating children about oral hygiene. I deeply admire their devotion to accessing vulnerable populations with limited access to health and dental care in their surrounding neighborhoods. It was heart-warming to hear happy success stories from the Vice Dean, Dr. Moss-Salentijn, regarding the healthy smiles that the Mobile Dental Center has created. This brilliant idea to promote proper oral health is inspirational in imagining the direction of my project in the future. I am excited to discuss this idea with one of the coordinators,

Dr. Amy Herbert, at an upcoming health expo. I am thrilled to continue advancing my idea with the guidance and resources of the Columbia Research Cluster on Science and Subjectivity and, potentially, the Mobile Dental Center. I am very pleased to have come across RCSS that perfectly fits my preferences to build my own idea with the support of faculty at the school. Ever since I reached out to Dr. Pollack and a couple of intern scholars before joining, I have felt so welcomed by the genuine willingness of each member to guide me through the process of making an idea come to fruition. ■

ABOUT THE SCHOLAR

Priscilla Castro (CC '23) is a junior from the San Francisco Bay Area studying Biology. Her favorite color is red, but if her project had a color it would be baby blue. She describes herself as absorbent, spontaneous, and radiant, with her interests and hobbies including volleyball, trying new foods, being active, and arts/crafts.



SYMPOSIUM SEMINARS

by **Marisel Sander**

The Practice Seminar Program began in a classroom in Shanghai, China. It was my first time leading a seminar; soon I discovered it was also many of my students' first time in a seminar format, making it a learning experience for all of us. Many, especially at first, were shy in the new format, where they were asked to talk about questions without a right answer—where they were encouraged to express what they thought.

The experience left me with a lingering question. Many of my students wanted to apply to Columbia or to other liberal arts schools in the US. But wouldn't they be at a disadvantage, especially in a Core Curriculum consisting entirely of seminars, compared to other students who had been taking seminar style classes since middle school?

To answer that question, with the guidance of several faculty mentors from RCSS and the Symposium club, I distributed a survey to the international students listserv. Almost 100 people responded and confirmed that they would've wanted a program to assist them in adjusting to the seminar format at Columbia. A mentor suggested that this gap also existed for low-income students; we also presented to the Academic Success Program.

Working with Symposium members, Writing Center fellows, and even the Center for Teaching and Learning in Butler, we designed a tripartite Practice Seminar Program to work on skills like close reading and public speaking.

The first two programs were small but meaningful. The last one, however, people did not show up despite RSVPing. While this was a little discouraging, we were very encouraged by the favorable reception by those who did attend the first two and planned to iterate on the program and on Bob's recommendation reach out to Roosevelt Montas, head of the Core Curriculum, about our idea. Shortly after, COVID happened, preventing us from working further on the program.

When I think about the program, I think not just about my students in Shanghai but my own experience. Despite coming from a private high

school that encouraged seminar learning, I still found the environment of Literature Humanities and Contemporary Civilizations intimidating and at times stifling. For students without that preparation, I can only imagine the adjustment might be even more difficult.

The reason I write this now is because during my premedical advisory committee interview, a member asked me about the program—"for selfish reasons," she said, because she saw a need for it as well. It's my hope that a future RCSS or Symposium scholar will pick up the program again; I truly believe that to ensure the Core Curriculum is not just fair but equitable, so that people really are coming to a level playing field, we need to support students in building the skills to participate in that style of classroom.

STUDENT TESTIMONIALS

Georgia, participant (who went on to get more involved with Symposium):

That was my first time in a student organisation and I got impressed how engaged they were about their mission. I could learn a lot with them and they learned a lot with me. There wasn't a hierarchy there. This made my journey through this group very easy and without any restraints. I felt very confident to be in the middle of people who value the same things I do. I met a lot of different people from different backgrounds and we could have real intercultural experiences through dialogues and critical thinking.

Kaylon, participant and then team member:

The Practice Seminar program was extremely helpful. Within the series of workshops, I felt like all of us [as participants] were able to thoroughly help one another and build on each of our strengths & weaknesses through practices & conversations that were surrounding either academia, everyday life, & also our interests that we were passionate about. I also deeply value having left with stronger oral & analytical skills that have informed my work across all of my courses and beyond! ■

RHETORIC OF SCIENCE

by **Ellie Hansen**

For this project, we paired with Dr. Lisa Dolling from the RCSS Advisory Board beginning in the Spring 2021 semester. A philosopher of science herself, Dr. Dolling was indispensable to the success of our project. Together, we brainstormed about the goals we wanted to accomplish, and slowly began to build a syllabus, that included ancient works on Classical Rhetoric, modern Rhetoric of Science, an emphasis on metaphor in science concepts, and finally on feminist theory in science. With immense help from Dr. Pollack of the RCSS and Dr. Melinda Miller from the broader Center for Science and Society, our course was accepted to be taught in Spring 2022 in Columbia's Department of Comparative Literature.

In Fall 2021, while working on the syllabus for the Rhetoric of Science in Spring 2022, Dr. Dolling, Kimia, and I decided to host virtual discussion events to raise interest for the course, and explore different facets of what Rhetoric of Science could be. Our first event hosted Dr. Carlo Rovelli, the acclaimed physicist, to discuss his book on quantum theory, and find the limits of both science and language to disseminate these ideas. During the event, Rovelli discussed the concept of perspective, for quantum theory as well as communication: we may never know an objective truth (and, according to quantum theory, there may not even be one to find), but greater understanding is worth pursuing nonetheless. After Dr. Rovelli's event, we hosted Dr. Sherry Turkle, a distinguished professor at MIT with a long history of studying the interaction between science and the social world. In particular, social media's effect on empathy in relationships figured heavily in the discussion. Dr. Turkle considered how technology tends to

dehumanize those we relate with while using this, and how this changes the typical rhetoric that takes place online to be more dramatic, and often cruel. She stressed the importance of using technology as a point of connection rather than isolation—like being able to host an MIT professor at Columbia on Zoom.

Both events were wonderful examples of people currently working in science that heavily factor language and communication into their work. By Spring 2022, we were ready to take these insights to begin the course. The first two sessions of the Rhetoric of Science occurred on Zoom, but since then, Dr. Dolling has led our seminar in Fayerweather. The course has exceeded my wildest expectations, especially because of Dr. Dolling's expertise at bridging philosophy and rhetoric of science. However, by far the most satisfying part of this experience is seeing how our seminar students apply concepts from class to real-life situations, particularly through their final projects. Because of insights from our students, I've learned how to apply rhetors like Aristotle and Thomas Kuhn to Elizabeth Holmes' Theranos scandal, the space race, the American eugenics movement, and generational trauma, among other fascinating topics. I am continuously inspired by them, and am happy to be leaving the course with a richer understanding of the Rhetoric of Science than when I started it. I am also extremely grateful for my friends and colleagues at the RCSS for making this dream realizable. I hope it continues to live on at the RCSS to be enriched by many more students. ■

TRICENTENNIAL PROJECT

by **Ellie Hansen**, **Mariel Sander** and **Bob Pollack**

MARIEL SANDER

The Tricentennial Project began in the Mudd café.

Bob told the RCSS he was working on a book and asked if anyone like to talk to him about it; having always been a bookworm, I reached out. I entered our first conversation a little awed by Bob, as many of us are. I also felt skeptical—I wondered if despite his claim to support truly student run projects, he still believed in the hierarchy of student to faculty at his core.

But even in that first conversation, I remember leaving with a sense of wellbeing, of hope, the sense that I think many of us have when we leave a conversation with Bob. I felt I had really been listened to.

Over time, that dynamic continued; he'd send me drafts of his book proposal, I'd leave comments that were more and more blunt, more and more unfiltered. I saw that he really did value my thoughts and feedback, and, most of all, my questions.

Over time, the questions became more oriented towards one larger question: what do you want to say and why are you the one to say it?

Together, Bob and I found that what embodied Bob's goal for his book, and his approach to life more generally, wasn't really a book. It was a conversation, or a set of conversations. And what better than an RCSS project to embody this?

On a personal level, seeing how Bob approached his own book project with the same humility and genuine trust as how he approached RCSS projects is what showed me he was, for lack of a better word, legitimate. And seeing someone who so genuinely lived that approach to life made me feel more able to engage in other projects, in my classes—built my confidence in a way that I saw affected my work in the morgue, as an EMT, in my current job. Because of this project, when I asked if I could call Dr. Pollack Bob; I still vividly remember how it felt when he said yes.

ELLIE HANSEN

I first learned about the Research Cluster on Science and Subjectivity shortly before the pandemic in Spring 2020, after meeting with former scholar Mariel Sander to discuss taking over a project she had begun her senior year. Mariel, in a discussion with RCSS head Dr. Robert Pollack, came to realize the importance of intergenerational discussions on climate change. The project got its name, the Tricentennial Project, from the idea that students and faculty should imagine what Columbia's tricentennial may look like as an effect of climate change. Inspired by her idea, I advertised the Tricentennial Project as a new student group looking to creatively address climate change.

By Fall 2020, I was met with an exciting and creative group of people with incredible ideas. We decided on a four-part event series to explore different facets of climate change in conjunction with Columbia faculty. Thanks to their efforts, we hosted Dr. Diana Hernandez to discuss designing climate solutions in conjunction with affected communities, Dr. Lisa Dale to explore resilience to climate change, particularly forest fires, and Dr. Jeffery Shrader, to discuss how we conceive of climate prediction changes the results. Finally, the Tricentennial Project's goals culminated in a meeting between faculty and administration of the newly developing Columbia Climate School and undergraduate student groups. During the event, student groups were able to present their ideas on what the new Climate School should look like, before breaking into groups to discuss their ideas more informally. I was continuously impressed with the diversity of ideas and commitment shown by my fellow members, and extremely grateful to the RCSS for providing us with a platform.

While still working on the Tricentennial project in Spring 2021, I also began to think often about a course on Classical Rhetoric that I had taken in the English department my sophomore year. A section of the course was dedicated to the Rhetoric of Science, or how language factors into both the development and communication of scientific knowledge. I had long wanted to expand this into a course on the Rhetoric of Science proper.

I was inspired by my own experiences in psychology research, where consideration of language, both in developing concepts and in writing research reports, is crucial to our field but almost never directly taught. I brought this idea to fellow RCSS scholar Kimia Heydari, who also took the Classical Rhetoric course and shared my interest. We further agreed that science communication also had fraught political connotations, especially during a pandemic. By creating an undergraduate course on the Rhetoric of Science, we hoped to both offer future scientists humanistic tools to address their own discipline, and modes of communication to help improve public discourse around science.

BOB POLLACK

Trust and hope, linked together, form the heart of my religious sensibility, and also, my way of seeing the gift of a tenured professorship. I trust my students who wish to be intern-scholars, and I hope

that in helping them we will together bring about an improvement, however slight, in the future. This trust led me to share a shock to my pride with Mariel, in hopes of saving the huge amount of work I had done that had led nowhere. I had worked for many months to produce a book proposal, to tell the story of my life, and how I came to be able to trust and hope, but only later in life. Publishers and agents agreed: I am not important enough to warrant an autobiography, and so my proposal withered on the vine.

I asked Mariel to be my advisor, and to suggest changes that might make my proposal viable. She agreed to be my advisor, a perfect flip of the expected hierarchy. And it worked, in an unexpected but unsurprising way. The rewritten proposal still did not warrant a contract. But in our conversations, we saw that it would be Mariel, and not me, who would have to deal with the consequences of a world that did not respond to trust, nor to hope, but only to utility and success. That's where the Tricentennial project came from; a true collaboration. ■

ABOUT THE SCHOLARS



Mariel Sander (CC '20) is a recent alumnus who studied Neuroscience and English. She is now the Global Engagement Officer at the Healthy Brains Global Initiative. Her current favorite color is a bright sunset orange and she loves to travel!

Ellie Hansen (CC '22) is a graduating senior majoring in Psychology and her favorite color is tropical blue. After graduation, she will be beginning a position in the NIH in DC conducting research on developmental psychopathology.





BUMP BIOLOGY

by **Raisa Alam** and **Ponce Tidwell**

BUMP Coordinators *Raisa Alam, Beka Stecky, Yasmin Ramadan, Neci Whye, Raphael Cohn, and Ponce Tidwell*

INTRODUCTION

The Black Undergraduate Mentorship Program in the Biological Sciences ("BUMP Biology") aims to build mentorship networks to support Black undergraduate students in the biomedical sciences at Columbia University.

PROGRAM GOALS

1. Supporting Black students interested in STEM throughout their undergraduate careers with mentorship and monetary compensation in the form of a stipend, in order to ameliorate some of the barriers that serve to limit their likelihood of pursuing careers in STEM research and medical careers.
2. Improving the retention of Black students in STEM.
3. Increasing the number of Black undergraduate students participating in research at Columbia University.
4. Improving understanding of racial justice and equity in the STEM community at Columbia University by increasing representation and visibility of early-career Black STEM students.

BACKGROUND

The BUMP Biology program emerged in August 2020 from a collaboration between the Research Cluster on Science and Subjectivity, Biological Sciences Department at Columbia University, the Black Alumni Council at Columbia University, and Biology Trainees Against Exclusion (BTAE).

This program is led by a steering committee consisting of individuals from across all levels of training and careers who have all shown a commitment to working towards racial justice

within the University and beyond: Riley Jones IV, J.D., and Neci Whye, M.S. (BAC Alumni); Raisa Alam, B.A., Ponce Tidwell (RCSS scholars); Yasmin H. Ramadan, M.S., and Beka Stecky, M.S. (graduate students); Raphael Cohn, Ph.D. (Postdoctoral Research Scientists and Adjunct Lecturer); Robert E. Pollack, Ph.D. (Professor of Biological Sciences and former Dean of Columbia College); and Harmen J. Bussemaker, (Chair of the Department of Biological Sciences). This group has been a key driving force behind the program and has organized all BUMP Biology activities.

BUMP BIOLOGY ACCOMPLISHMENTS

MENTORSHIP PROGRAM

The mentorship program was launched in January of 2021 with Mentee, Research Mentor, and BAC Career Mentor applications. The first BUMP Mentee cohort consists of 29 Black undergraduates from Columbia. The second BUMP Mentee cohort consists of 47 Black undergraduates from Columbia. The Career Mentors consist of 26 professionals from the Black Alumni Council (BAC). The Research mentors consist of 45 graduate students and post doctorates from the Biology Department and the Zuckerman Institute.

Through the mentorship program, BUMP Mentees were assisted with applications for summer internships and research programs and given career-related and personal mentorship. The BUMP mentees and mentors were provided with a code of conduct, a mentee training guide, and a mentor training guide. The BUMP Mentors participated in two virtual mentorship training sessions with an emphasis on cultural competency led by Dr. Dana Crawford.

GRANTS

In November of 2020, the BUMP Biology program was first granted the \$5,000 Provost's Seed Grant for Addressing Racism to expand the mentorship program.

In August of 2020, the BUMP Biology program was then successfully awarded the 3-year, \$85,000 per year grant offered by the Columbia University Faculty of Arts and Sciences, to expand BUMP Biology and fund undergraduate research.

EVENTS

In April of 2022, the BUMP Biology Open House was hosted on Gather Town that invited BUMP mentees, mentors, coordinators, and faculty advisors to mingle and socialize through the platform filled with virtual games and areas to converse.

In November of 2021, the BUMP Biology Social was hosted in person at Columbia University. In this event, BUMP mentees, mentors, and coordinators socialized and picked up BUMP custom designed t-shirts and gift bags as well provided food and refreshments. The BUMP Coordinators designed BUMP T-shirts for mentees, mentors, and coordinators and BUMP mugs and stickers for mentees.

In November of 2020, BUMP Biology hosted a Zoom career panel event. In this career event, professionals in the biomedical sciences from the Black Alumni Council and Black undergraduate seniors spoke about their experiences at Columbia University and provided career advice pertaining to their respective career paths in medicine and research.

RESEARCH SUPPORT

Beginning in March of 2022, the BUMP program was able to provide funding of up to \$2,500 per student to directly support BUMP mentees engaged in research labs at Columbia University. In addition, the BUMP program recently provided funding of \$2,000 per student to offset summer housing costs for students participating in

summer research programs or independent research in NYC.



BUMP Coordinators preparing gift bags for mentees, mentors and coordinators .



An event for gift bag distribution under a Columbia tent to the members of BUMP Bio.

SOCIAL MEDIA AND COMMUNITY BUILDING

We've established a strong presence on social media, highlighting our talented mentees and sharing resources and research opportunities on Facebook, Instagram, and Twitter, and a BUMP Biology website. We also have an active Slack server for mentors and mentees to collaborate and network. We have recruited 5 BUMP mentee liaisons (Sylvester Benson, Opeyemi Lekan, Karlton Gaskin, Sarah Boyd, and Liana Dawson) from the first cohort of BUMP mentees to help promote community building within the BUMP mentee cohort through social bonding events and check ins. Furthermore, we have begun establishing formal and informal connections with other groups across campus, including the Zuckerman Institute administration and DEIB Board and several undergraduate clubs and organizations.

FUTURE STEPS

Students in the BUMP Biology program will have the opportunity to participate in further social and professional networking events throughout the year. We plan to host biannual networking events where students will have opportunities to professionally engage with medical school students, researchers, and community leaders on issues related to racial justice and equity in the medical and scientific communities. We also plan to host biannual dinners at local, Black-owned restaurants or the Faculty House with mentees, mentors, and faculty advisors to build community and strengthen relationships.

Students will also have the opportunity to participate in wellness initiatives, including stressbusters massages, panels on mental health in the Black community, waived fees for Columbia fitness facilities and classes, and membership to wellness apps such as Headspace.

To optimally prepare the Black undergraduates for their research experience, a new one-week preparatory course will be created that will be offered just before the spring semester starts. It will provide training in basic lab skills, provide experience with reading of scientific literature, cover science communication skills, and discuss

how BUMP mentees can get the most out of their experience in the lab.

PERSONAL REFLECTION - RAISA ALAM

As an RCSS intern-scholar joining the summer before my senior year, I knew I wanted to lead an impactful project that would help support students at Columbia University. As a low income, first generation college student from marginalized communities, I struggled navigating the premedical path without much mentorship and support. Thus, I wanted to help create a program to enable other students to feel supported and promote diversity, equity and inclusion in the STEM field. When I started the project, I never imagined it would become so successful and it has gone beyond my expectations. We have accomplished so many amazing milestones in the past two years: pairing BUMP mentee students with research and career mentors, obtaining funding, creating events, building social media and community, providing monetary compensation and aid toward BUMP mentees in research labs, and fostering mentorship relationships through training sessions and guidelines. I owe much gratitude toward the BUMP coordinator team (Yasmin, Beka, Neci, Raffi, and myself) as well as Dr. Pollack and Dr. Bussemaker for the continued dedication and hard work to this project for the past two years. Throughout my experience leading this project as a Co-Founder and Co-Coordinator, I have grown my leadership, communication, teamwork, goal setting and implementation skills. This project has made me realize that I want to continue this type of equity work in my future as a future physician-scientist and educator. I hope that the BUMP mentorship program will persist for years to come and continue to provide support structures to Black Undergraduate students.

PERSONAL REFLECTION – PONCE TIDWELL

As a future professional aiming to deconstruct racism, hierarchy, and power in healthcare, I believe that working with the B.U.M.P. Biology team has rendered me important tools to address the cultural issues rooted in structurally unjust systems and institutions. Having taken part in the pursuit of strategies to organize

educational and career opportunities for a marginalized community, collaborated with Columbia faculty and alumni to erase systemic discrimination, and worked to elevate B.U.M.P. as a physical forum for critical inquiry, I have begun my journey to protect our inspirational legacies. Further, it is from these experiences that I have

been inculcated with the competencies to combat the widening disparities in education, health, and human rights as a social justice changemaker in the near future. ■

ABOUT THE SCHOLARS



Raisa Alam (CC '21) is a recent alumnus who studied Neuroscience. She is currently getting her master's degree in clinical research. In her free time, she enjoys reading books, watching TV, and trying new food. Her favorite color is rose-gold (at the moment!).

Ponce Tidwell (CC '24) is a sophomore from Indiana studying Anthropology and Sustainable Development. His favorite color is olive green and he loves horses (he is an AMAZING equestrian), journalism, TV broadcasting, public speaking, museums/art, history, and learning about cultures.



IN THE WORKS: MENTAL HEALTH REWRITTEN

by **Aida Razavilar**

This past year and a half a close family member of mine has been continuously in and out of hospitalization for a mental health condition. They have worked through it persistently (and tried doing so inconspicuously) but during particular periods in their life (e.g., exacerbated by the stressors of the pandemic and a demanding job) it becomes pathological and less inconspicuous. The struggles of working with and (more often) against, and the struggles of being unconfident and apprehensive of a Western psychiatric framework is something that has traversed from the academic sphere into the personal because of the role I have had to play in this family member's life during this time.


The challenges and memories from this pandemic, for many, are surely ones that will reverberate for years beyond. It is a moment of collective trauma that sent shock waves that were absorbed and created destruction in very different ways across the fabric of the world. COVID-19 essentially was a social stratification multiplier. Personally speaking, it was also a time of intense emotional and mental reckoning. There were several trying moments that created a bit of dissonance from the greater Columbia community as if there was no one I could completely relate to in these moments. I know that these were sentiments I had felt in the past year as well. Alongside new beginnings in the Fall, the excitement I had for spearheading this RCSS project was something I really looked forward to and was ecstatic to fully reengage in the best of what Columbia has to offer.

I saw it as an opportunity to get deeply involved in research, investigating this medical anthropological perspective that is necessary for enriching dialogue and substantial change for mental health within such communities (which is something I hope to do in my final years and beyond Columbia).

Building off of my own experiences I fully understood the isolation that can be felt when you quite literally have the rug pulled out from under you and must figure out how to stand back up on your own two feet. It is overwhelming, and it's sometimes hard to spin the narrative of positivity and resilience that we so champion these days,

when you are in the thick of it. There are practical worries that make a pristine linearity of the future seem completely distant. Reading the following [tweet](#) from Dr. Chase Anderson, a child and adolescent psychiatry fellow at UCSF in California, made my struggle feel understood, shared, and something that many others are likely going through.



Chase Anderson, MD, MS (K.C. Ardem) 
@ChaseTMAAnderson

Psychiatry 101: too often we forget the family members of people living with mental illness. Not only that, but sometimes family members can perpetuate stigma around mental illness. Part of healing must be educating and supporting not only patients but family members as well.

12:30 PM · Aug 29, 2021 · Twitter Web App

74 Retweets 5 Quote Tweets 546 Likes

The tweet from Dr. Chase Anderson on mental illness.

Originally seeking to create a greater sense of connection I was interested and began pursuing a support group structure but through chats with Dr. Susan Rosenthal and Dr. Marya Pollack in the summer and fall of 2021 I then began to reconsider what it would be like to have a resource center of sorts. I found solace oftentimes in podcasts or others writing about their experiences, but it is easy to get inundated with information. Also, it would be helpful to have a place for more practical concerns when a close family member has a mental health crisis, such as dealing with financial concerns or one's own personal health. In the spring semester I have been researching and consolidating those resources with the aim of publishing or going live by the end of the semester. I want to be intentional in the way I design and structure the website/resource center and ensure that I speak to the diverse communities and intersectional identities.

Recognizing the importance of social connection and familial support in such critical mental health crises, I was looking to do this personal research project on creating a more cohesive support system/resource center for families in situations similar to mine and explore the paradoxes of the role of family in “Eastern” cultures as it relates to mental health. It is the narrative of health and

healing from this perspective I feel personally connected to; I am eager to take this historical and cultural context to acutely inform what the errors are in our approaches to mental health. I am appreciative that the RCSS provided a place where I could fully immerse myself and be supported to do this work! ■

ABOUT THE SCHOLAR

Aida Razavilar (CC '23) is a junior studying Neuroscience, and she is from San Diego!

She would describe herself with the following three words: adaptable, creative, and enthusiastic. She loves being outdoors, rock climbing, biking, cooking/baking, and listening to music.



INTERGENERATIONAL NARRATIVE MEDICINE WORKSHOP

by Phalaen Chang

I had grown up interacting with senior citizens my whole life—I have many memories as a child with my grandma who is now well over 80 years old, and as she watched me grow, I too, watched her age, bouncing in and out of nursing homes, rehab centers, hospitals, and our home as health conditions and broken bones increasingly limited her mobility. After watching old family home videos with her this past summer, her constant lamentations and nostalgia for who she used to be began to make more sense. I began to understand that in many ways, the effects of time and aging had left her feeling left behind. In some odd way, as she watched my dad leave for work everyday and me leave for college across the country while she stayed stuck at home most of the time with various ailments, it must have felt like seeing time unfold in two different directions—us forward, and her backwards.

And she was likely far from the only senior to feel this way. During the spring of 2021, I took a class called (Y)our Longer Life which explored what it meant to age and what possibilities came with a growing percentage of elderly people within our population. Among the issues we discussed were: increasing reports of loneliness and isolation felt by older generations as cities became less age-friendly, sentiments of feeling like a burden as increased costs of living often forced young adults to make difficult choices between caring for their elderly parents or starting their own family, and the lost wisdom that came with the lack of intergenerational connections. But, the class proposed, such problems were opportunities for us to come up with new creative solutions that could benefit not just the elderly population, but everyone. It was with this inspiration that I found a proposal for my RCSS project: a 6-week long virtual intergenerational narrative medicine workshop for a small group of 14 undergraduate students and senior adults.

The process of coming up with what this project ended up being was a long one. I was initially inspired by the work done by Dixon Chibanda's TED talk: "Why I train grandmothers to treat depression" and was interested in setting up something similar. Over the course of 6 months of brainstorming,

planning, and meeting with various mentors, however, the idea evolved into an idea of an intergenerational art and writing workshop which then evolved into the intergenerational narrative medicine workshop it now has become. Despite the journey, within each evolution, the goal of the project remained the same: to foster connections and a sense of community between younger people and senior citizens. And by the time fall semester rolled around, this vision, with the help and unwavering support of my mentors came to life as we welcomed our first participants to the first intergenerational narrative medicine workshops.

REFLECTIONS

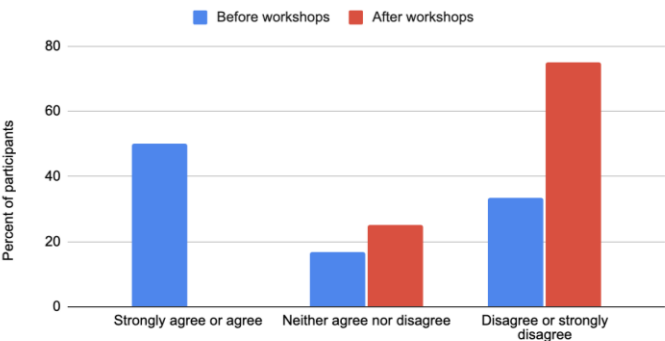
Over the course of six weeks, the 14 undergraduates and senior community members and our two facilitators met on Zoom and greeted each other through our little Zoom screens with icebreakers—descriptions of our view outside our windows, trinkets near us on our desks, small descriptions that allowed us to imagine each other in physical spaces as real people. After a short stretching and breathing warm-up, our facilitators presented works to discuss. Each week brought something new: a poem about Arabic coffee, a YouTube video of Yo-Yo Ma performing "The Swan" with street dancer Lil' Buck, fabric sculptures, paintings. The range of observations and perspectives we each brought to the work from our experiences was an insightful learning experience.

After discussing the media the facilitators brought, participants were all given five minutes to create a response piece. Some participants wrote while some opted to create visual art. The chance was then given to anyone who felt comfortable doing so to share their work and the story behind it with us, opening up the space for more intimate, personal conversations. The intimacy and warmth of the meetings, the willingness of participants to be vulnerable with each other and share their stories of home, grief, and identity was moving to see, and gave me hope that given the opportunity, different generations are willing and eager to connect with each other.

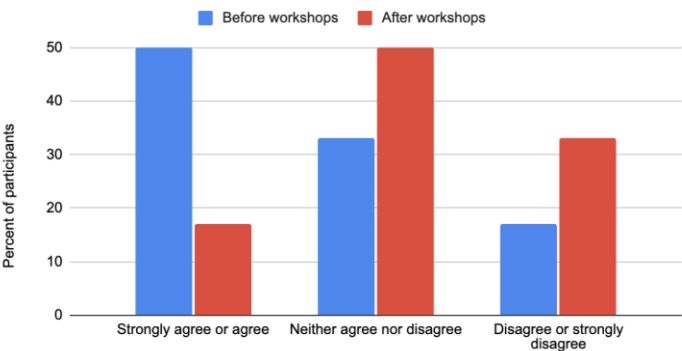
During the final meeting, all participants had the chance to share verbal reflections on their experiences, and many of them expressed a similar hope and gratitude, with one participant who was based in Bahrain expressing an interest in exploring narrative medicine possibilities there as well.

Before and at the end of the fall and spring workshops, participants were asked to fill out a pre and post-survey filled with a few questions that allowed them to share their thoughts on the other generation. The most noticeable change in attitude for undergrads was how much they agreed with the statement "I find it difficult to communicate or be understood by older people" on a scale of 1-5 with 1 being strongly disagree and 5 being strongly agree. Prior to the workshops in the fall, 50% of the participants answered "4 (Agree)," 16.7% answered "3 (Neither agree nor disagree)" and 33.3% of participants answered "2 (Disagree)." At the workshop's conclusion, 25% of participants answered "1 (Strongly disagree)", 50% of participants answered "2 (Disagree)" and 25% answered "3 (Neither agree nor disagree)" to the same question suggesting an overall shift in comfort levels among undergrads for connecting with older adults. It also seemed that undergrads were able to feel they had more common ground with older adults after the workshops—based on the fall surveys, prior to the workshops, 50% of undergrads felt that their personal and political beliefs tended to differ from those held by older adults and 33% unsure. At the workshops' conclusion, 50% were unsure if their personal and political beliefs differed from those of older adults and 33% feeling as though their personal and political beliefs were not so different from those of older adults.

Undergrads answer: "I find it difficult to communicate or be understood by older people"

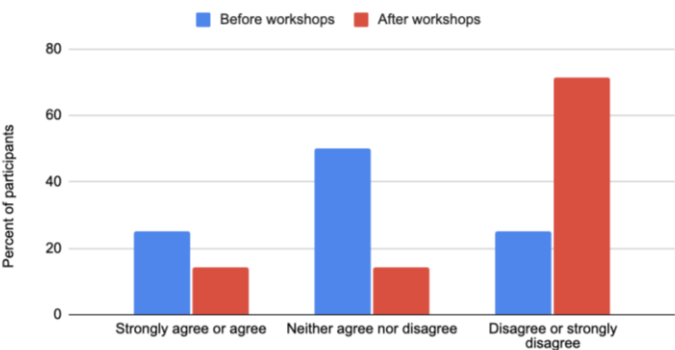


Undergrads answer: "My political and personal beliefs tend to differ from that of older people that I know."



The most noticeable change for the senior participants was how strongly they agreed to the statement "Younger people are out of touch with the issues we faced growing up and the issues that matter to me." At the start of the fall and spring workshops, 25% answered "Agree," 50% answered either "Disagree" or "Strongly Disagree" and 25% answered "Neither agree nor disagree." By the end of the workshops, 71.4% of the participants answered either "Strongly disagree" or "Disagree," with 14.3% answering "Neither agree nor disagree" and 14.3% strongly agreeing. This shift was interesting because it seemed to suggest that the workshops allowed some shift towards more older adults feeling like their experiences, thoughts, and values were understood by the undergrads who participated.

Senior participants answer: "Younger people are out of touch with the issues we faced growing up and the issues that matt..."



In reflecting on her experiences, an undergrad spring participant shared:

"From the start, community members were the first to be open and vulnerable. From sharing stories of pain and loss to family conflict, they bravely bore witness to their experiences and how they saw themselves in the texts we discussed. For multiple pieces (about miscarriage or divorce), a lot of the pain of the piece for me was based in the fear that I might one day experience these processes. My empathy was based on imagining a future with an event. For some community members, their personal experience comprised the effective load of the texts. It was an honor to get to learn from and share space with them. With my own grandparents, language barriers and our familial relationship sometimes prevent me from asking directly about their life experiences. I value the relationships this workshop has allowed me to forge with the community members."

When we were recruiting participants, the opening of the outreach information we put together read: "Stories comprise the substance of our lives, imparting meaning and enabling connection. Narrative Medicine holds that by engaging with and reflecting on our stories so we can create a space in which new connections and relationships become possible – with ourselves and with others." This call for participation well summed up the experiences I had as a participant in the fall workshops and the themes of hope and reflection I noticed in the reflections I received and in the verbal reflections at the end of the workshops. As I think about the possibilities of future workshops and future opportunities for intergenerational connections, I too, am filled with hope that despite the tumult, loss, and isolation of the last two years, there is still the willingness and desire to connect with each other across backgrounds and generations so long as there is the space and opportunity to.

REFLECTIONS FROM PARTICIPANTS

One fall undergrad participant wrote in reflection:

"My favorite part of the medical humanities workshop was getting to hear the interpretations of texts and artwork from older generations, since the individuals

in the workshop with me had so many different experiences in life than my own, which opened up the door to many different perspectives. While my fellow peers in age had similar observations as me to make about certain pieces, I noticed that the women of older generations in the workshop all had unique experiences of loss, joy, and change that I have never encountered, which allowed them to perceive the world and the things they interacted with very differently than myself. For instance, one of the very first poems that we analyzed, called "Arabic Coffee," stirred up so many memories by our group, and the different relationships people shared with the text really fascinated me. Whereas I read the piece as a sort of nostalgic way of remembering one's traditions and appreciating family due to my Italian heritage and background, others in my group who actually had cultures and close attachments to Arabic culture shared the importance of Arabic coffee in their lives and the symbolic nature of it as a form of resilience and strength. Although we have very different interpretations of the world around us, our exchange of ideas and collaboration was an incredible introduction to gaining insight into what the idea of medical humanities is all about: By simply listening to the rest of the group share and become open with each other every Saturday morning, I have grown an even greater appreciation and attachment to those who are open to helping others through being vulnerable with themselves, especially in their work."

Older members wrote the following in reflection:

"I was interested and encouraged to note that younger and older participants often made similar comments about the texts we worked with"

"Great experience! Do it again."

"This experience was wonderful, and the melding of our responses to each piece we shared was incredible. There were many similar experiences shared by people representing different age groups. Thank you for this opportunity. So sad that our workshop is ending."

"Very well run and beautiful materials and texts. Would have been interesting to have material that focused on age. I was surprised that the younger people in the group did not seem to participate as much as the older women; perhaps we bring more of a sense of urgency to everything given that we realize how time is a tricky part of our experience."

ACKNOWLEDGEMENTS

It is with special thanks and appreciation to Dean Linda Fried for connecting me with various people who helped make this project become a reality, Ms. Stephanie Adler Yuan for being so immensely kind and helpful in helping the various pieces and logistics come into place and being a lovely mentor throughout the process, the various facilitators: Anna, Biba, Nanako, Alise, and Prasana who graciously took their time on Saturday mornings to shape the experience, and Dr. Pollack and RCSS for

the support, resources, and for giving me the courage to take on this project. It is also with the greatest appreciation to all of our participants for their time and their heart over the course of these workshops. It is my hope that we will be able to continue and improve the workshops next school year and that the experience has and will continue to be a memorable and meaningful one.

**All reflections are quoted from participants with their permission. ■*

ABOUT THE SCHOLAR



Phalaen Chang (CC '23) is a junior majoring in Neuroscience and Public Health. Her favorite color is purple-ish blue. People have told her that she is curious, compassionate, and resilient. Her hobbies include binge reading Webtoons and watching film analyses and opdocs on YouTube.

AYURVEDA IN AMERICA: WEAVING DIASPORA NARRATIVES OF HERITAGE AND HEALING

by **Chinmayi Balusu**

My family comes from a village known as Gudlavalleru in the Indian state of Andhra Pradesh, located on the country's southeastern coast. While I was born and raised in the suburbs of northern California, my experiences growing up were heavily shaped by my Indian roots, even though I was thousands of miles away from "home."

As a Hindu and Telugu-speaking Indian-American who has navigated multi-hyphenated identities throughout early life, joining the RCSS felt like home – this community is rooted in exploring the parallels, reflections, and often swept-under-the-rug crossroads of science and the human experience. Specifically, through the RCSS, I am exploring the influence of alternative medicine systems, such as Ayurveda, on the present-day cultural traditions of members of the Asian diaspora.

Ayurveda is a medical system that originated over 3,000 years ago in the Indian subcontinent; while some Ayurvedic practices are based in behavioral interventions, other forms are rooted in utilizing herbs and natural products such as oils and spices in treatments. While Ayurvedic practitioners in India participate in education and certification programs, the United States does not currently have a national certification standard ([Johns Hopkins Medicine](#)). In addition to Ayurveda, there are many forms of alternative medicine practices with widespread roots in Asia, such as traditional Chinese medicine and Japanese Kampo medicine ([WebMD](#)).

Although we typically perceive alternative medicine as being in direct confrontation with contemporary Western medicine, the reality is that they are intertwined in many individuals' lived experiences, including those of my family. My parents immigrated to this country over two decades ago, and they continue to incorporate Ayurvedic practices into our everyday lifestyle, whether it be through diet or mindfulness. It is not a matter of picking and choosing between "modern" medicine and "ancient" medicine but rather acknowledging that both systems share underlying core values that support our wellbeing.

For example, through public health coursework here at Columbia, I recently focused on understanding the prevalence of healthcare-associated/nosocomial infections in India ([Undergraduate Journal of Public Health](#)) and investigating potential solutions stemming from alternative medicine. In under-resourced areas where standard disinfectant products may be difficult to access, multiple studies have explored using Ayurvedic plant-based products to purify and disinfect environments, considering they are more readily available, affordable, and trusted. In this way, alternative medicine can help the cultural gap while promoting sanitation and better health outcomes. Ayurveda has a deep rooted history in local communities, and when we sideline and marginalize it compared to Western medicine, we unfortunately erode trust and respect.

DIASPORA EXPERIENCES

In addition to its global health impact, alternative medicine has become a staple part of cultural identity here in the United States. Consider how integrated alternative medicine is in mainstream health. Nowadays, it is very likely that you can find turmeric supplements in the wellness aisle of your local supermarket, and that is only the beginning! When I was younger, I would scoff when the brightly labeled supplement bottles came into view at Costco, disappointed that it was simply the newest trend of appropriating culturally-rooted remedies. For me, turmeric evokes memories of "haldi" ceremonies during joyful weddings, my Ammamma's warm hug as she hands me a cup of "kashayam" tea when I'm sick, and the long-lasting streaks of yellow on formerly pristine white clothes during Holi. And now, seeing rows and rows of turmeric pills on the shelves makes me feel disconnected from home. Now, it is cold and clinical and no longer nostalgic.

While the relationship between these products and American consumers is still complicated, we cannot fail to acknowledge that there is greater participation and interest in alternative medicine.



A yellow turmeric flower with ground turmeric and turmeric plant.

Approximately one out of every five Americans has interacted with alternative medicine therapies in some way, shape, or form ([Pew Research](#)). However, we must also consider – are we erasing the cultural context of having long-standing connections with therapies and traditions from back “home” when alternative medicine products make

their way onto pharmacy shelves? How can we continue to cherish the history and value of alternative medical knowledge as consumers?

WHAT'S NEXT?

Within Morningside Heights, Ayurveda and alternative medicine at large thankfully have a space in our community, though it is often unseen. I have had the honor of participating in these discussions through courses such as “Senior Seminar in Comparative Literature” and “Medical Sociology,” and with the support of the RCSS, I am working to introduce a more formal community on campus. I am planning a tight-knit community for students to be able to connect with one another over monthly lunches, learn about the roots of alternative medicine, and engage with faculty members, advocates, and practitioners who are passionate about these themes. In doing so, students will be able to learn first-hand about how we can bridge the gap between alternative medical practices and western medicine to improve the lives of our community members – understanding an approach that is centered in cultural humility and respect. People are at the heart of medical care, and by exploring how an individual's heritage inspires their health practices, we can go above and beyond the science of medicine to connect on a more interpersonal level. ■

ABOUT THE SCHOLAR

Chinmayi Balusu (CC '22) is a graduating senior from California studying Medical Humanities.

Her favorite color is blue and she enjoys refereeing soccer for U12 athletes, tae kwon do, walking, reading, music, poetry, and watching movies with family. If she could describe herself in three words, she would pick reflective, ambitious, and happy.



MODERN GENETICS: SCIENCE, HISTORY, ETHICS

Teaching High School Students Through the Double Discovery Center

by **Dennis Zhang**

In an ever-shifting landscape of “23andme” and “gene editing,” the ability to access and modify one’s own genetic information has left the realm of science fiction and entered into our twenty-first century reality. Age-old questions re-emerge in a transformative new era: how is new technology shaping our lives, what ethical issues have emerged, and how can we learn from history to navigate this uncertain future?

There are no clear-cut answers here, but it is paramount that youth, in particular, start having these conversations as we take control of our own genetics-intertwined health and identities.

As an RCSS intern-scholar, this past academic year, I collaborated with the [Double Discovery Center](#) (DDC) to develop and teach a virtual two-semester, five-week course on the ethics and history of modern genetics, fittingly called “Modern Genetics: Science, History, Ethics.” The DDC serves low-income, first-generation, college-bound and minority high school students. I thought it was especially important to reach this audience in light of historical and contemporary misuses of the language of “science” and “genetics” to alienate, discriminate, and abuse those in vulnerable groups.

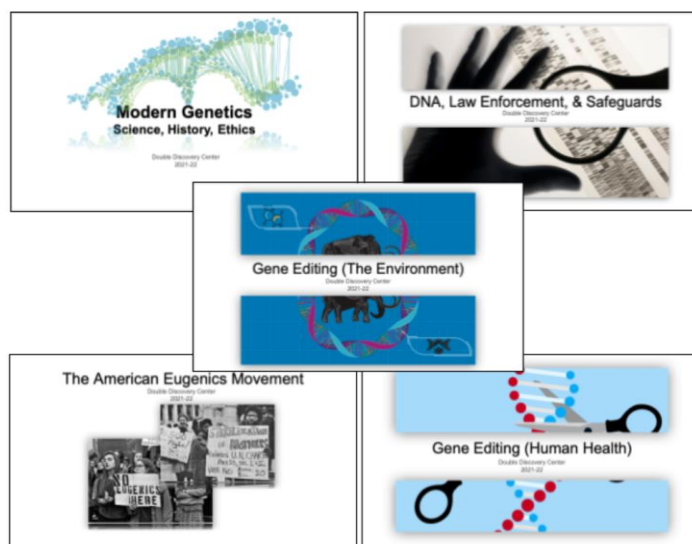
As such, I had three main goals in developing this curriculum: (1) to familiarize my students with modern and historical issues in modern genetics, (2) to enable them to engage critically with these issues and formulate stances in a low-pressure setting, and (3) to equip them with tools to continue the conversations started in our classroom with their family, friends, and classmates.

CURRICULUM GOALS

Goal 1: Familiarize students with modern and historical issues in modern genetics

To accomplish my first goal, I spent this past summer developing a lesson plan that traversed the following topics: (1) consumer genetics, (2) forensic genetics, (3) the American eugenics movement, (4) gene editing applications for human

health, and (5) gene editing applications for the environment (see below).



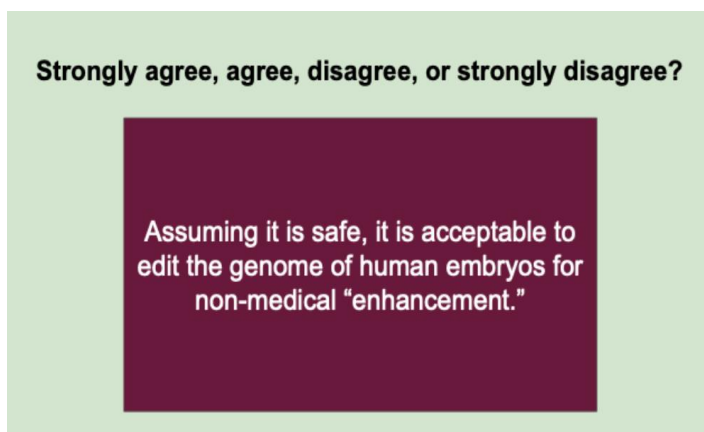
The five topics covered by my lesson plan.

This progression was intentionally designed to move from a more individual-focused lens to a broader society-focused one. In the process of crafting my curriculum, I drew from online resources like those of the Personal Genetics Education Project (pgEd) and from various readings like Siddhartha Mukherjee’s *The Gene: An Intimate History*.

Goal 2: Facilitate critical thinking and stance-taking

To accomplish my second goal, I formatted my classes such that short, bite-sized tidbits of “lecturing” were interspersed with discussion-focused activities. DDC classes were taught entirely online over Zoom this year, which made it all-the-more-necessary to keep things interactive.

The activity that worked best, in terms of both encouraging participation and receiving positive feedback from students, was called "four corners." This type of activity prompts students to "strongly agree," "agree," "disagree," or "strongly disagree" on a stance related to the topic at hand. In a physical classroom, the four corners of the room might each correspond to one of these options, and students would move to the corner aligning with their response. An example of a "four corners" prompt from the gene editing applications in human health session was "Assuming it is safe, it is acceptable to edit the genome of human embryos for non-medical 'enhancement'" (see below).



A sample prompt used in a "four corners" activity.

Goal 3: Equipping students with the tools to continue the conversation

To accomplish my third goal, I incorporated an end-of-class activity at the end of every session that was meant to encourage students to lead the conversation and facilitate active recall of class content. Specifically, I displayed a grid of several topics covered in that particular session and invited students, one-by-one, to each select one topic and present as much as they could remember on that topic in an easily digestible manner to the rest of the class (see to the right for an example from the "Consumer Genetics" unit). This proved to be a fantastic closing activity because it gave students real practice explaining genetics-related concepts and allowed me to

assess both how well certain topics were taught and which topics interested my students. Students also remarked how the activity was a nice summary of the class's contents that made it easier to remember what they learned.

Teach a friend, peer, or loved one.

| | A | B | C | D | E |
|---|--|---|--|---|--|
| 1 | Examples of direct-to-consumer genetic testing companies | What can direct-to-consumer genetic testing show you? | Moore's Law vs. Drop in Genome Sequencing Cost | Angelina Jolie and BRAC1 | Pharmacogenetics |
| 2 | Two benefits to getting genetically sequenced | Why ancestry testing results can provoke mixed emotions | Why genetic testing may vary between companies | What types of insurance can legally ask for your genetic test results | Two downsides to getting genetically sequenced |

An example of a topic grid from the "Consumer Genetics" unit that students chose presentation topics from to close out the lesson.

TEACHING STUDENTS AT THE DDC AND IMPROVING THE COURSE

I first taught this class to a cohort of ~6 students at the DDC during the fall of 2021. As aforementioned, this class was taught entirely on Zoom due to COVID-19 restrictions, which came with its own set of hurdles. Most notably, learning online could be quite impersonal at times (I can attest to this, having spent my entire freshman year of college on Zoom). Fortunately, I harnessed my perspective as a student, as well as previous experience volunteering with and mentoring youth in a virtual context, to find ways of driving conversation (e.g. icebreakers and fun questions).

Altogether, the course ended up going smoothly and was filled with plenty of meaningful and thoughtful interactions from students. The most rewarding parts of this experience were the moments when I could hear students get audibly excited about a certain topic at hand in responding to a question or engaging in discussion. I remember one instance, after our gene editing class, where one particularly enthusiastic student stuck around to exuberantly ask about the gene editing research I was doing in a lab at Columbia and for other educational resources to check out.

Heading into the spring of 2022, I sought to replicate the success of the previous semester while implementing several pieces of feedback that I had been given by the fall student cohort. However, one crucial factor changed as we transitioned semesters: my class size had doubled from ~6 students to well over ~12. A larger class size meant it was going to be more difficult to facilitate the spontaneous, interactive conversations we did in the fall over Zoom.

Luckily, the solution to this issue was simple: implement breakout rooms! After trying out this Zoom feature in my first spring class, where I had broken students into groups of three to discuss the Four Corners Activity, I was met with overwhelmingly positive feedback. From there, the rest of the semester went as planned—perhaps even better since I had built up a semester's worth of experience by then.

Of note, I was treated to some exciting news midway through the semester when my course was selected as one of two (out of all DDC courses) highlighted in the [February 2022 issue](#) of the monthly DDC newsletter titled “From Biology Lab to Catwalk” (see below).



Spring 2022 at DDC!

Click on the Coursebook to Leaf through the Classes

In this February 2022 Issue:

- 1. From Biology Lab to Catwalk - Spotlight On:**
 - 1) Modern Genetics: Science, History, Ethics**
 - 2) We Are The Art: Wearable Art & Fashion**
- 2. All Things ALUMNI**

The [DDC newsletter](#) covers courses and student accomplishments, and is shared with the entire DDC community, including donors, alumni and friends.

TEACHING OUTSIDE OF THE DDC

In light of my experience teaching at the DDC, I was approached by a student organization, the Columbia Science Initiative, with another teaching opportunity. The Columbia Science Initiative is working on a [citizen science project](#) where they are teaching advanced middle schoolers about genetic sequencing so that these youth can run such experiments themselves.

Specifically, I was offered the opportunity to teach [a class on how genetic sequencing is applied to solve crimes and the ethics of this use](#) to youth associated with the [Sophie Gersen Healthy Youth organization](#). I gladly accepted, designed the course by adapting materials from the “consumer genetics” and “forensic genetics” units of my DDC course, and taught the class mid-March. The experience of teaching these middle schoolers was, in many ways, quite different to teaching high schoolers; in particular, there was an idiosyncratic exuberance, chaos, and spontaneity to middle school-aged youth that made the experience extra exhilarating—if not, unpredictable at times—for me as an instructor. That said, I’m glad to report that the class went smoothly and that the middle schoolers demonstrated an excellent understanding of the material.

Overall, I think that the proven generalizability of my course and its ability to be taught outside of the context that it was initially designed (i.e. for high schoolers at the DDC) highlights the value in pursuing a course-based class as an RCSS scholar. I hope future scholars see that, as long as one has a good grasp on class contents and is able to readily adjust materials to fit their audience’s needs, they’ll be able to teach said class in a variety of different contexts!

The cover of the February 2022 issue of the DDC newsletter.

Timeline of Events

March 2021

Joined my first RCSS meeting

Offered a position to teach a 5-week abridged course at the DDC called a "learning circle" (a new type of course format that emerged during the COVID pandemic)

May 2021

Submitted RCSS proposal to teach a class on the ethics and history of modern genetics at the DDC

Met several times with the DDC pedagogical specialist to revise and refine course materials

Officially became an RCSS intern-scholar

September 2021

Revised proposal based on feedback from Prof. Bob Pollack and Dr. Marya Pollack

Submitted all required DDC materials and forms ("Protection of Minors" training, background checks, etc.)

June 2021

Began corresponding with the DDC executive director and pedagogical specialist on the possibility of teaching a course

October 2021

Confirmed that there was no precedent for an undergraduate teaching their own course at the DDC—needed to make a convincing case!

Completed DDC instructor training

Submitted course materials (syllabus, instructor bio, etc.) for publication in course catalogs prior to DDC student course selection

Began planning virtual course materials largely based on Personal Genetics Education Project resources and Siddhartha Mukherjee's *The Gene*

Set up Zoom / attendance-tracking logistics

Assigned students

Reached out to students

July 2021

Completed a draft of course materials and sent them to the DDC pedagogical specialist, who discussed my proposal with the rest of the DDC leadership

10/16: Class 1 on "Consumer Genetics"

10/30: Class 2 on "DNA, Law Enforcement, & Safeguards"

Timeline of Events (*continued*)

November 2021

11/6: Class 3 on "The American Eugenics Movement"

11/13: Class 4 on "Gene Editing: Human Health"

11/20: Class 5 on "Gene Editing: The Environment"

Checked in with the DDC pedagogical specialist to recap the semester

Offered a "full" instructor position in the coming semester—preferred to continue teaching my abridged learning circle

January 2022

Revised course materials based on fall student feedback

February 2022

Submitted course materials (syllabus, instructor bio, etc.) for publication in course catalogs prior to DDC student course selection

Set up Zoom / attendance-tracking logistics

Assigned students

Reached out to students

2/12: Class 1 on "Consumer Genetics"

2/19: Class 2 on "DNA, Law Enforcement, & Safeguards"

2/26: Class 3 on "The American Eugenics Movement"

March 2022

Offered the opportunity to design and teach one class (based on my DDC course) to middle schoolers through the Columbia Space Initiative, which was working on a genetic sequencing citizen science project with said middle schoolers

3/5: Class 4 on "Gene Editing: Human Health"

3/17: Adapted course materials and taught the aforementioned middle schoolers (associated with the Sophie Gersen Healthy Youth organization) about the ethics of forensic genetics

3/19: Class 5 on "Gene Editing: The Environment"

REFLECTING ON MY OVERALL EXPERIENCE AS AN INSTRUCTOR

This experience was my first trial run both as a DDC instructor and in instructing a course that I had designed myself. It was also a landmark for the DDC as I was the first undergraduate to ever teach their own course, or what was nominally called a “learning circle” due to its relatively short length. My hope is that this is a precedent for Columbia undergraduates, not only at the RCSS but also at large, to volunteer as instructors at the DDC.

As I think about what future RCSS projects I might pursue, as well as how I can continue to serve students at the DDC, I’m currently thinking about other ways I can harness the University’s resources to incorporate more guest speakers to discuss issues in modern genetics (or other scientific topics embedded with fundamental philosophical questions) with these youth—in the hopes of advancing this course into something more sustainable that can be worked on with other RCSS scholars.

All that being said, this project has undoubtedly

been a formative experience for me. I currently conduct bioethics research on precision medicine, as well as molecular biology research on genome engineering. Being at two faces (i.e. the humanities and sciences) of the same coin (i.e. modern genetics) encourages me to constantly think in an interdisciplinary manner. What are the scientific implications of diversity mandates for precision medicine? What are the ethical implications of new gene editing technologies? It was immensely gratifying and fulfilling to be able to bring this sort of thinking to the design of my course and to my students.

“Modern Genetics: Science, History, Ethics” was the culmination of my interests across the sciences, the humanities, and a burgeoning interest in subjective experience—particularly the beliefs, stances, and experiences of my students as they, too, grapple with modern genetics. I am grateful for the support of the RCSS (my project advisors Prof. Bob Pollack and Dr. Marya Pollack, other advisory board members, and fellow scholars) and the DDC (Dr. Aisha Haynes and Dr. Kecia Hayes) in helping me pursue this opportunity. ■

ABOUT THE SCHOLAR

Dennis Zhang (CC '24) is a sophomore studying Biology and History. His favorite color is blue, and he would describe himself as creative, structured (in terms of thinking), and inquisitive. Some of his hobbies include long distance running (he recently ran the Brooklyn Half-marathon), playing the guitar, and listening to podcasts (often as he runs).



LIFE AT THE END OF LIFE

by Hana Ghoneima

Last fall, I met with Prof. Bob to discuss a recent reading that I had come across and wanted his thoughts on. It dealt with the topic of dying. I had recently delved into the life of Dr. Elisabeth Kübler-Ross and was inspired by the work she did to change our perception of death and dying. It was then that Prof. Bob told me about a previous RCSS class called Life at the End of Life. Due to the pandemic, the course had been put on hold. Prof. Bob asked me if I would be interested in "recapturing" life for the course, to which I immediately agreed. The rest, as they say, is history.

The course consists of two components: a seminar where various guest lecturers give talks about an array of topics related to the field of palliative care, and a volunteer component where students communicate with patients. The seminar is designed to provide opportunities for readings and reflections on the experience of volunteer service work, and students learned how to critically reflect on their experiences communicating with palliative care patients in the context of questions raised in the texts read in the seminar. This semester we were joined by guest lecturers spanning various disciplines. Dr. BJ Miller joined us to discuss the place of art in medicine, and author Eliza Factor helped us realize the importance of non-verbal communication in our everyday life. Other speakers, including chaplains, doctors, and social workers helped paint a picture throughout the duration of the course of death and what it means to care for those going through the process.

Previously, students fulfilled their volunteer component in a nursing home. We had planned to continue this process but were notified two weeks before the start of classes that nursing homes were once again closed to volunteers due to the constantly changing pandemic guidelines. Finding ourselves at a crossroads regarding how to proceed, we decided to undertake the novel idea of connecting students remotely with palliative care patients, who we called Long-Term Companions (LTC) in the class. Students communicated remotely with their LTC on a weekly basis and provided assistance and support, whether emotional or recreational, or by simply serving as a person consistently there for someone during

chronic illness or at the end of life. At the heart of this framework is the patient; however, students were able to develop skills necessary to critically reflect on the significance of emotional care as a medical practitioner, as well as form a deeper understanding of the role of palliative care and comfort care in a life cycle of care.

We also introduced a new assignment this semester: the creation of a legacy project. At its core, legacy work is a way to commemorate and reflect on the lives of a patient and is a practice meant to bring comfort to those dealing with chronic illness, long hospitalizations, or end-of-life. The goal of the project was to help LTCs reflect on their life history, and to capture their memories in a tangible way that reflects their unique experiences and interests. Students were encouraged to be as creative as they wished, and to find something that would truly be meaningful to their LTC. We were blown away by the range of projects students and LTCs completed. For an LTC who is an avid cooker, her assigned student worked with her to compile a cookbook of all her favorite recipes. Another student's LTC was a frequent traveler who traversed across all the continents, and so they created a virtual map with stories of all the places their LTC had been. Others made interviews with their LTCs asking questions about their first loves and favorite movies, photo galleries of some of their key experiences and memories, or annotated playlists of songs that defined important parts of their LTC's life.

In helping to bring this class back to life, I faced many obstacles that forced me to steer in a new direction or renavigate. Nothing is more evident of this than a 57-email thread in which I attempted to get HIPAA training assigned to students. One thing I was always sure of, however, was the class art I picked for the syllabus: *Where do we come from? What are we? Where are we going?* by Paul Gauguin. The painting is meant to be read from right to left and contains three main subjects, representing birth, life, and death. These three areas of the painting symbolize the question of where humanity comes from, where it's going, and how it will proceed (hence the title of the painting). The last question is represented by the elderly woman

at the far left, and according to Gauguin, while she is "approaching death appears reconciled and resigned to her thoughts"; at her feet, "a strange white bird...represents the futility of words" or "the uselessness of vain words".

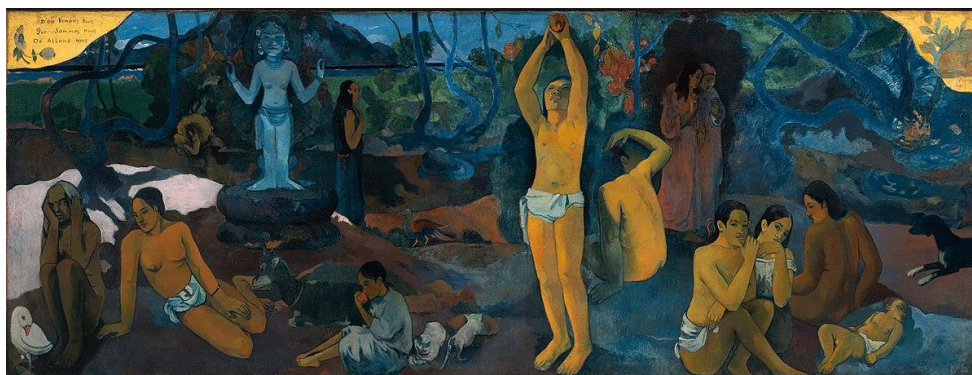
The painting is full of symbolism, but one notable part is the two solemn-looking women by the tree who are behind the sitting woman with her arm lifted - this is supposed to represent enlightenment versus superstition. He says that the crouching woman is looking in "astonishment upon these two, who dare to think of their destiny."

I think the painting fully encapsulated the course, both for the themes and subjects it covers. Its sole focus is not on death but on a life lived overall. Most importantly, it poses the question of what it means to exist not only as a person but as a humankind. The answer to this question, which became progressively more and more clear to me through the duration of the course, is that it is by caring for each other. The experiences shared by the

students, on select Wednesday nights where we all met to debrief and discuss our week's calls with our LTCs, have given me hope this is possible.

Some might find it strange that a group of twenty-year olds willingly and eagerly met every week to learn about death. However, there is something to be said for the freedom that comes from facing one's mortality. It is only by acknowledging death that one can learn how to live.

Gauguin created his masterpiece at a tumultuous time of his life - he was suffering from illness and his own young daughter had just passed. This was the last piece he created before he himself faced death. A lot of analyses of the painting online will tell you the blue color palette of the painting is meant to elicit a feeling of sadness. I digress. I have found no sadness in blue. It is a color of hope in some religious traditions and a symbol of paradise in others. Blue is the color of the sky and water - it has never represented sadness to me. ■



Where do we come from? What are we? Where are we going? by Paul Gauguin, the official class art.

ABOUT THE SCHOLAR

Hana Ghoneima (CC '22) is a graduating senior studying Biology and History. Her favorite color is gray, and her interests include reading, history, and listening to podcasts.



A DANGEROUS IDEA: REPLACING A EUGENICIST WITH AN EQUITY AND SOCIAL JUSTICE FIGHTER

by **Krystal Cruz**

May 3rd, 2022—Bancroft Hall, Teachers College, Columbia University

Present-day, in Spring 2022, I am grateful to my doctoral advisor Professor Barbara Wallace for permitting me to become Dr. Pollack's Visiting RCSS Scholar and blessing this collaboration. Dr. Pollack became my RCSS project supervisor for an ArcGIS StoryMaps visual telling documenting the historical timeline of events that occurred from the RCSS film screening in Schermerhorn Hall on February 27th, 2018 of *A Dangerous Idea: Eugenics, Genetics and the American Dream*—a documentary about social inequality in the United States, featuring Professor Bob Pollack as a key expert; to the unanimous historic board of trustees vote to remove the name of a eugenicist off of Teachers College, Columbia University's tallest campus building on July 15, 2020; to the ultimate call to action from both the School of General Studies' Social Justice Medicine group and the University-wide Students for Gordon Tower to rename the building formerly known as Thorndike Hall to Dr. Edmund W. Gordon, EdD, TC '57.

On July 15th, 2020, the Teachers College, Columbia University Board of Trustees unanimously voted to remove Edward Lee Thorndike's name off of the tallest non-residential building at TC—the oldest and largest Graduate School of Education, Health and Psychology in the United States. This historic moment for our campus community was made possible due to The Center for Science and Society's Research Cluster on Science and Subjectivity (RCSS) film showing of *A Dangerous Idea: Genetics, Eugenics and The American Dream* at Schermerhorn Hall on February 27th, 2018.

RCSS provided a direct pathway for this historic institutional enhancement to occur; because while I was serving as university senator for the Columbia University Senate, alongside Professor Bob Pollack, a key expert in the film and Director of RCSS; I recall Prof. Pollack announcing the film showing of *A*

Dangerous Idea: Genetics, Eugenics and The American Dream after one of our committee meetings, at that time, chaired by Professor Paige West, Director of Columbia's Center for the Study of Social Difference. As I received word about the RCSS film screening, I enthusiastically arrived at Schermerhorn Hall on February 27th, 2018, greeted by Prof. Pollack and his wife Amy Pollack, among other inquisitive students. During the film, I was taken aback and perplexed about why our campus community's Teachers College, Columbia University tallest campus building was so prominently displayed in a documentary film about eugenics.

Immediately, post-film screening of *A Dangerous Idea: Eugenics, Genetics and the American Dream*, a fact-finding mission on my part ensued that began on February 27th, 2018, as the stark reality began to sink in: that a highly utilized campus building was named after a staunch eugenicist, built during the latter part of the Civil Rights Era—with federal monies via a grant from the U.S. Department of Education. A eugenicist that dedicated his life's work to promoting a hierarchy of human value based on race, with no private endowment necessary, was freely given the honor of having Columbia's Graduate School of Education, Health and Psychology named after him. My fact-finding mission culminated in *The Thorndike Report: A Case for Change* dedicated to Dr. Robert E. Pollack, Dean of Columbia College (1982-1989); Professor of Biological Sciences in the Departments of Environmental, Evolutionary and Ecological Biology, Biological Sciences, and American Studies; Director of Columbia University's Center for the Study of Science and Religion; and Director of the Center for Science and Society's Research Cluster on Science and Subjectivity (RCSS) at Columbia University. I thanked Dr. Pollack for serving alongside me on University Senate throughout the years and being a beacon of enlightenment to the world.

Upon publishing *The Thorndike Report: A Case for Change*, with the blessing of The School of General Studies Postbac Premed Student Council's Social Justice Medicine auxiliary group comprising of Postbac Premed Program and GS undergraduate pre-med students and premedical advisors Dr. James Colgrove '01 MSPH, '04 GSAS, Dean of The School of General Studies (GS) Postbaccalaureate Premedical Program as well as GS Dean of Students—Brian Allen, Social Justice Medicine group advisor. We created A Call To Action petition to garner support "to rename the building bearing the name of Thorndike to Dr. Edmund W. Gordon" so that "future generations of students, faculty, staff and community members entering a [campus] building will not have to be oppressed and offended by the legacy of Edward L. Thorndike who espoused eugenic, racist, misogynist, anti-Semitic and homophobic convictions. Instead, they can be uplifted and inspired in a new era as they enter the Dr. Edmund W. Gordon Hall named after a distinguished African-American" (Cruz, 2018, p. 20).

In addition to Prof. Bob Pollack forging a pathway for Columbia to begin co-education in the 1980s; in 1996, he also created the University Seminar #657—***The Two Cultures Revisited***: Current Representations of Human Diversity in order to experience human diversity and to experience the marginalization he knew his "colleagues suffered from for being black, or gay, or female, or any combination of those. Through these discussions we came to know one another as real people, not representatives of any particular group" (Vinciguerra, 2020).

Professor Gordon is Columbia University's first ever Tenured Full Professor of African-American descent—earning tenure in 1968—"after which the presence of Black faculty members across the country became more widely accepted or at least less resisted" (Gordon, 2021). The New York Times said Professor Gordon "could reasonably be called one of the leading psychologists of our era and the premier Black psychologist" (Gross, 2003; ETS, 2004). Thankfully, Professor Gordon's scholarship mitigated and dismantled Thorndike's hierarchy of human value informed by Thorndike's "eugenics consciousness".

Contributing towards my RCSS Project has also afforded both our university-wide campus community, as well as America's higher education landscape (e.g., The American Educational Research Association, The American Psychological Association etc.) to answer The Call to Action to "deliver the imperative that" the Teaches College, Columbia University building **formerly** known as Thorndike Hall, be renamed "to Dr. Edmund W. Gordon and officially dedicated..." (Cruz, 2018, p. 22). Accordingly, during the recent Black History Month Celebration, Prof. Gordon, at almost 101-years old, was provided with a 140-page document with nationwide letters of support and solidarity, spanning both public and private sectors, coast-to-coast, emphatically calling for Professor Edmund W. Gordon's name to be placed on Columbia University's Graduate School of Education, Health & Psychology's tallest campus building. ■

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ABOUT THE SCHOLAR

Krystal Cruz is a pre-doctoral fellow in the Research Group on Disparities in Health at Columbia University's Graduate School of Education, Health and Psychology in the Department of Health and Behavior Studies and is graduating in 2022. If she could describe herself in three words, they would be: mindful, passionate, and introverted-extrovert. Her favorite color is teal!



REFLECTIONS ON COVID-19

by **Hannah Lin**

In 2020, Raisa Alam (CC '21, brilliant RCSS alumnus) came up with an idea: asking Columbia students to share creative reflections about their experiences during the pandemic. Conventional community-building, class structures, and interactions had been disrupted for months at that point, leaving university students to navigate an entirely unexpected environment. When I joined RCSS in the spring of 2021, I was fascinated by Raisa's idea and decided to ask for more submissions from more students, now one year into the pandemic. On the following pages, you will find poetry, artwork, and photographs from students across Columbia University, from undergraduates to business

students to medical trainees. These powerful reflections, submitted one year ago, portray the varying emotions of quarantining, isolation, and sickness while simultaneously traversing the rough waters of young adulthood. We invite you to think back to where and how you were one year ago – even while we continue to trod forward with our lives, there is immense value in sitting still, reflecting, and documenting our own histories. The introspection and societal awareness of the following reflections will inspire you to do just that.

The following submissions have all been approved for publication by their authors and artists.

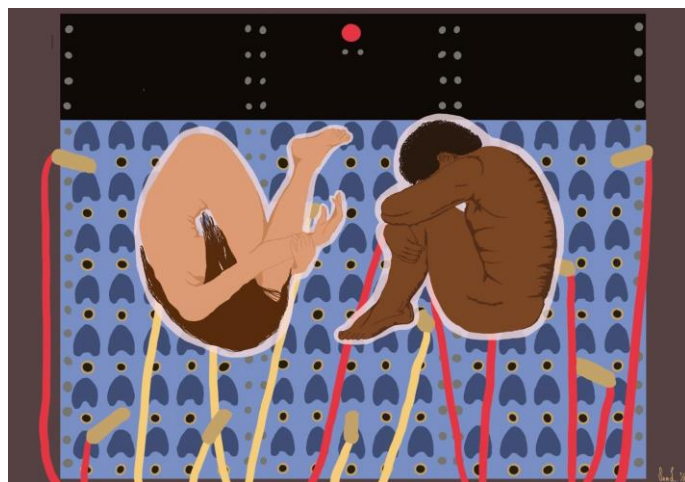


CONNECTING YOU TO YOUR CALLER

Samantha Lujan (CC'24)

Hi y'all, my name is Samantha Lujan. I am a rising Junior in Columbia College majoring in Film and Media Studies with a concentration in Visual Arts. I was born in New York City but currently call Fort Lauderdale, FL my home. I love to paint, draw, try new things, and watch movies. I plan to pursue a career in the film industry. I have various interests in directing, producing, screenwriting, as well as in animation. Excited to see what the future holds!

During the pandemic, I spent a lot of time on the phone speaking with friends and family. It was my main source of connection with them. But even when I didn't speak to them, I felt a different type of connection with them, one deep down. In this artwork, there are two people lying in the fetal position, representing the connections we all have to each other deep down, the compassion that we feel for each other when one is in need of help. The switchboard in the background signifies the connections we make the effort to continue; we make the conscious decision to reach out and connect to our caller, hence the name Connecting You to Your Caller.



Connecting You to Your Caller by Samantha Lujan.

**KOTOSHI HANSEI****Colton Sears (GS '23)**

I am an East Asian Studies major with a concentration in Philosophy, and my first year at Columbia has been all virtual. While I am happy and fulfilled by my first academic year following my passion here, those aspects of a traditional experience that were absent are also sorely missed, so I wanted to acknowledge this strange mix of fortune and misfortune. I guess I'll just have to make sure this dimness just makes my remaining two years of undergrad gleam the brighter.

The following poem is written in the Japanese short verse form, also called Tanka. Similar to the 5-7-5 form of the haiku, the tanka is slightly longer, split up into 5 verses of 5-7-5-7-7 syllables each.

Time stops for no one-

Least of all for the youthful-

We do what we must.

Many hands lighten the load,

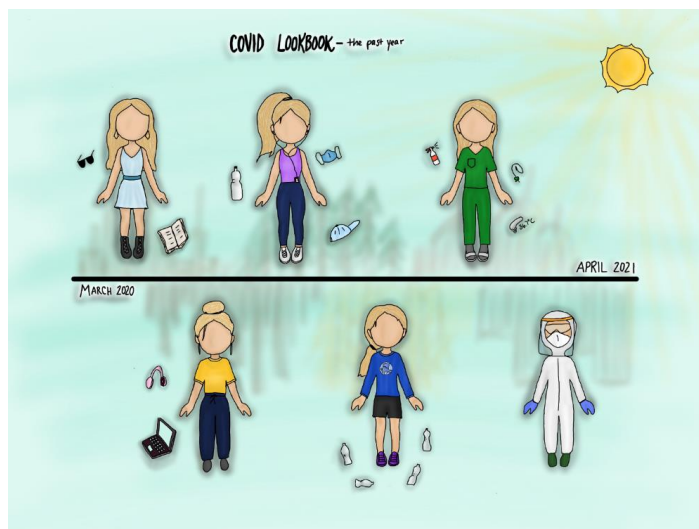
But we plod forward alone

COVID LOOKBOOK

Emese Marka (CC '22)

Emese is a senior in CC majoring in Biophysics. She has many scientific interests and plans to pursue medicine in the future, having volunteered in a hospital for part of the COVID year. Besides science, Emese is also passionate about the environment--she volunteers at a river-cleaning project every summer. In her free time, she enjoys baking fancy desserts, exploring the outdoors, and lifting weights.

During the past year, the clothes I wore changed significantly. I started out wearing dresses in March, when the weather was just starting to get nice and we didn't even think COVID would have such a big impact. When everything switched to Zoom, I switched to more casual clothes—sweatpants and t-shirts—until I started running over the summer, after which I mainly wore athletic gear. In September, I helped clean a river, collecting plastic pollution, and in January I started working in a hospital, when my main clothes became scrubs. When the hospital I worked at turned into a COVID ward in March, the PPE became much more intense, making me become covered from head to toe.



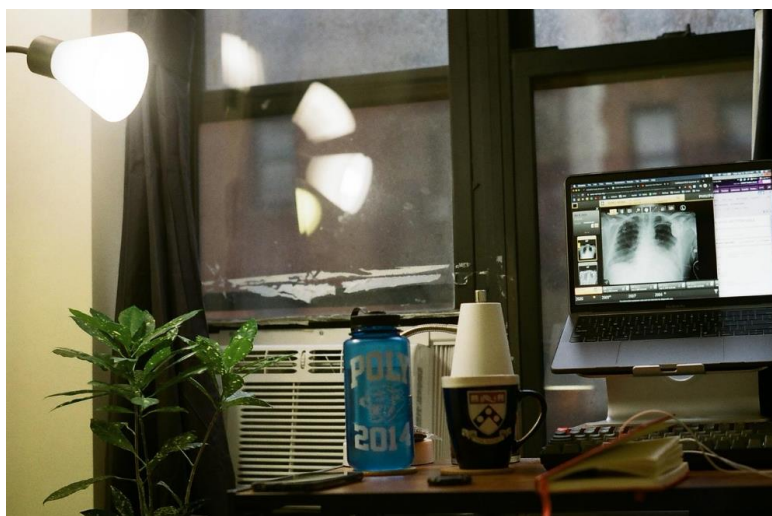
COVID Lookbook, by Emese Marka. A timeline of outfits from casual to head-to-toe PPE.

MARCH 2020 THROUGH THE LENS OF A SECOND YEAR MEDICAL STUDENT



Henry Zhou (VP&S '22)

Henry Zhou is a graduating fourth-year medical student (VP&S 2022) from Los Angeles, California and is headed to Harvard/Mass Eye and Ear for ophthalmology residency.



This photograph was captured March 2020 on Kodak Gold 200 ISO film in Washington Heights, New York City.

On March 15th, 2020, the Vagelos College of Physicians and Surgeons suspended all “clerkships, selectives, sub-internships, and clinical electives in all affiliated hospitals and programs.” At that point, it was clear that New York City would be short what it required for the proper medical care and treatment of all persons infected with COVID-19. But our class of medical students were interrupted in the middle of our clinical training – I was pulled out of the Harlem pediatrics emergency department just as the city’s cases began to swell. Nevertheless, we wanted to be part of the healthcare response to the pandemic.

There was an effort to characterize the hospital courses of the first 1,00 patients at NewYork-Presbyterian/Columbia University Irving Medical Center, eventually published in the *British Medical Journal*. We needed students to gather clinical data, and I volunteered. I combed hospital records, X-rays, CT scans, lab results, and vital signs for hospitalized patients with COVID-19. I knew that I

would likely never meet most of these patients. Indeed, some had already succumbed to pneumonia and passed away. But I felt a sense of connection to every patient whose chart I pulled. Trapped in my small apartment, as we all were socially distancing, it was one way I felt connected to victims of the pandemic and the clinicians working tirelessly to save them.

This photo was taken while working on one of the patient charts for our study. To me, it serves an important reminder of the confines of the physical space to which I was relegated during the pandemic. The data present on my laptop screen, however, reminds me of the intellectual, and indeed emotional, outlet provided by our study and my virtual patients. The space and content captured in this shot is intensely personal, yet I believe the feeling it conveys is one that many of my fellow classmates may admit to understanding quite well.

MY FIRST HOUSE CALL AS A MEDICAL STUDENT

Lessons Learned from Telehealth Care Intervention for Patients with Poorly Controlled Diabetes

Maeher Grewal (VP&S '22)

"If you were going to die in 30 years and you knew it was going to happen, would you rather it be from Alzheimer's disease or COVID-19?"

I was stunned by the question. "Um, I'm not really sure," I answered to the patient who'd asked me over the phone. "I haven't really ever thought about it." This was supposed to be a quick telehealth phone screen to this Bronx VA patient with poorly controlled diabetes to assess how he was coping with disease management during the pandemic. I certainly hadn't expected to get metaphysical.

"Well think about it now then. Go on, I have some time." Mr. Veteran replied, his voice mixing with the static.

And so I did, for a couple minutes. I thought about who I was now... a 3rd year medical student, newly returned to clinical rotations after a 3-month hiatus in which students were pulled from the hospital for our safety during the pandemic, nervous navigating this new landscape of telehealth. I wanted so badly to make myself useful to patients and healthcare providers in this world that had changed.

I thought about the role I was trying to grow into... a doctor someday armed with the skills, fortitude, and empathy to stand on the front lines instead of being forced to retreat should anything like this COVID-19 outbreak ever happen again in our lifetimes. My role models had bared witness everyday these past few months to small miracles like patients coming off ventilators, and weathered staggering losses; I had no idea how to begin to live up to that, to even prepare myself to be ready for something like that.

I thought about all the things I wanted to do... in medicine and otherwise, start a family, travel the world, grow old surrounded by loved ones. In 30 years, I'd be 54. I checked Mr. Veteran's chart. 68 years old. And then I thought about all the things he may done with his lifetime.

He'd served in the Vietnam War, he'd seen combat, he'd come back without some friends and with some haunting dreams, he went to therapy, he started his own family. He was diagnosed with diabetes several years ago. He was on a few oral medications and insulin. His most recent hemoglobin A1C back in January was 10.2%. And that's when I caught myself in the trap.

His diabetes, his medications, his lab results—those weren't things he'd done, that wasn't the sum total of who he was.

Those were simply data points I'd pulled from his chart when his A1C above 9% flagged him as an "at risk patient" with "poorly controlled diabetes" who might benefit from the phone screen intervention I was attempting to institute at the Bronx VA primary care clinic.

He was my first house call, and it was supposed to be simple.

In my first few days rotating through primary care at the Bronx VA, I noticed how the shift from in-person visits to telehealth care necessarily created a huge gap in the timeline of chronic illness management for diseases like diabetes. I discussed with my attending how patients weren't able to get labs drawn so disease management was based off A1C's that were now several months out of date. The pharmacist mentioned how difficult it was to titrate medications over the phone now when she wasn't sure if her patients were checking their finger-sticks properly and taking their all pills correctly—if the pills were even active or expired—when previously patients brought all their medications to in discuss with her and the PCP in the same day. Now with telehealth, the appointments were separate, spread over the course of weeks, and she knew that level of time burden presented a significant barrier to some patients. And I brainstormed with the team other

ways the pandemic quarantine might be making the already complex and herculean task of diabetes management, usually coordinated through multiple different care teams including dietitians and exercise specialists, even harder for our patients. Patients might not feel comfortable going to the grocery store to shop for healthy foods, if such foods are even in stock. With gym closures, they may no longer have access to means of exercise and may not feel safe walking outdoors. They may now find themselves in uncertain situations regarding home security, financial stability, employment status. They may be dealing with sick family members, schooling children at home, and frustrations of being cooped up indoors without their social groups including veteran support groups for so long. And to cope with these stresses, they may have picked up unhealthy habits like smoking.

All of these things and more could be happening in our patients' lives and affecting their diabetes. These were things that we as their primary care providers could help link them up with resources or specialists to deal with, but unfortunately we would never know unless they scheduled an appointment. But what if it was too late by then?

While patients with diabetes are not necessarily at increased risk for developing COVID-19, they are at increased risk for more severe complications. Madsbad et. al. showed that, "when comparing intensive care and non-intensive care patients with COVID-19, there appears to be a twofold increase in the incidence of patients in intensive care having diabetes...[and] mortality seems to be about threefold higher in people with diabetes compared with the general mortality of COVID-19." Furthermore, infection itself is as a risk factor for poor glycemic control due to factors like unstable food intake while ill and the use of steroids in illness management which potentiates the risk for the consequences of severe blood sugar dysregulation (DKA, HHS), and creates a positive feedback loop between diabetes and infection thus worsening the long-term complications of diabetes in patients who fall sick and making them more susceptible to serious illness later. Given these sorts of consequences, it was unacceptable to me to allow at risk patients with poorly controlled

diabetes to remain uncontacted.

So, recognizing that I as a student had time in my day that my attending didn't, I came up with a short phone screen to cold-call patients with poorly controlled diabetes (defined by the most recent hemoglobin A1C over 9%) to assess their current COVID-19 situation. The goal was to help patients themselves identify barriers to care they were willing to accept help with to try to lower their A1C's. I counted as an added benefit that, not only would patients get extra digital facetime with a provider in a diabetes-focused conversation, but also I would also get to practice motivational interviewing. Via the phone-screen, I was prepared to make referrals to medication management, dietitians, smoking cessation groups, mental health providers, telehealth exercise programs, and anything else a patient might flag as an area they wanted to work on. What I had never expected through the phone screen was a conversation with a patient in which I was asked to choose my own executioner: COVID-19 or Alzheimer's disease.

"You've been thinking for some time now," Mr. Veteran's voice cut through my thoughts.

"Yes," I admitted. "You know, this is my third year in medical school. I've studied over 10,000 different diseases and have learned several hundred different ways a person can die. But I have never thought about choosing one of them for myself someday."

"Well, I have."

"Really?"

"Ah yes. You, you sound young. But me? I'm old," he mused. "And so I've thought about these things."

"You're not that old!" I protested.

"But I feel old," he pondered. "I feel happy though. I feel so blessed that I get to play with my grandchildren everyday during this time. I know I'm lucky that I made it out of the war. And I know I never want to be a burden to my family. So you asked me how I was faring during this pandemic?"

Well everyone has their own answer and reasons, but if god or almighty or whatever there is up there gave me a choice between the two, the virus or Alzheimer's, I'd take the virus. I'm not scared, I'm just taking each day as it comes, grateful for every one of them."

We chatted for a couple minutes more after that. He told me the names of all his medications and the names of all his grandchildren. I referred him to a smoking cessation group that met online once a week. He thanked me sincerely for the call and said it was a pleasure talking to me. After we hung up, I tried to write my note.

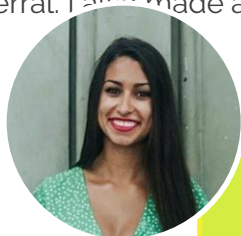
I realized then the biggest flaw in the EMR: there was no way for me to truly document the richness and fullness of this encounter, how much our 30-minute phone call had humbled me. I was surprised to note how much I'd actually learned about a person I'd never even seen through just a phone call. And yet my note would simply say that Mr. Veteran was up-to-date on all of his meds, had rated his motivation for diabetes change as an 8 out of 10, had agreed to a smoking cessation referral, was not significantly burdened by the pandemic, and with tentative plans to redraw labs in September. But even though the note would necessarily be devoid of the human connection we'd made, I took the lesson I'd learned from him into every single other house call I made during my time at the Bronx VA.

In between rotation responsibilities and scheduled telehealth appointments, I talked with 13 different veterans (70% of my attending's at risk list) about their diabetes management during COVID-19. I made 2 new medication management referrals, two new mental health referrals, 2 new dietitian referrals, another smoking cessation referral, and one new exercise referral. I also made a dentist referral and an

ophthalmologist referral for a total of 11 barriers to care, 11 areas of change, 11 possibilities of growth that these patients may never have gotten around to working on, had we waited till they were scheduled for a PCP appointment that would have covered far more breadth but not as much depth.

And beyond these numbers, I had the chance and privilege to get to know the people behind them. I celebrated with patients who were thankful for the gift of time that the pandemic had bestowed upon them, that now instead of late nights snacking at the office they were able to cook dinner with their families and take evening walks with their wives and had as a result lost some weight and were eager to recheck their A1Cs. I commiserated with patients who couldn't keep up with the homeschooling and had gone back to cigarettes for the stress relief and encouraged small steps to quitting again. And I mourned with patients who'd lost their mothers and fathers, who had to be strong for their siblings and children, who couldn't see an end and were surprised that someone from their doctor's office had taken the time to check in. Some little miracles and some staggering losses.

The pandemic is and was a sweeping wave of change over healthcare that converted in-person primary care encounters to telehealth overnight and it may have created a gap in chronic disease management that physicians will be dealing with for the years to come. But no matter what the EMR doesn't include, it did not erase the power of human connection in patient management. Dealing with COVID-19 is a heterogenous experience unique to each patient, and I encourage all my fellow medical students returning to rotations to take the time to make that connection. ■



Maehar Grewal is medical student at Columbia University's Vagelos College of Physicians and Surgeons; she is currently doing a research year to apply into otolaryngology next fall. Some of her other writing can be found in Reflexions, Georgetown University Writing Center (where she completed her undergraduate education), and self-published online.

a response to a response to the pandemic

Mackenzie Collins (GS '21)

/ I don't think "dream" is a capable word / of describing our current state /
 it is an alternate state / from that of an accepted reality / maybe
 "nightmare" is a better term for it / a nightmare (n.): / because our society
 was never created to help everyone / and now the helpless is everyone /
 and our leaders are on vacation /
 / I've moved to a house in Connecticut / with a long drive way / and
 leagues of ivy / to run away from the city / but as I sit in this ivory tower, /
 interwebbed I remain / protected from / the violence (n.) / but until the
 agents come / I see the cities burning / the proles have finally begun / to
 rebel (v.) / they're consciousness now one /
 / I have dreams / but I do not cling to them too closely / I've had too many
 dreams / deferred (v.): / to think now is any different / to think the
 establishment is any weaker / to think we might actually burn it down / to
 realize it was designed this way; / These dreams are a fool's gold (n.): /
 / When my mind begins to wander / when it begins to dream of better
 days / where nothing has gone back to normal / and we've rebuilt Society
 / to help (v.): everyone / in the ashes of what once was / Capitalism soon
 wakes me up / like the shrill of an alarm clock / and I proceed to go back
 to work /



Mack is an alumni of the School of General Studies at Columbia University, Class of '21. They are an award winning playwright, published poet and essayist, but most importantly they are a failed satirist. Currently, Mack is working to pay off their student loans with a career in writing. How foolish.



Tai Wei Guo

Tai Wei Guo (she/her) is an internal medicine resident at NYU Medical Center, and a graduate of Columbia University Vagelos College of Physicians & Surgeons. Some of her other writing can be found in *Stone Canoe*, *DEAR*, and *Reflexions*.

Groceries & Things

Slippers

Hand lotion

A decent vodka

Sugar, for tea

Plants, for company

Books, for company

Books, for solitude

Books piled high enough to hide cohabitants

20 cards, one for every friend I never wrote

Wishes well enough to ward off every fear

Markers & post-its & empty cans &

Lengths of string to canopy us from the rain

The tail end of every marvelous color in sight, or just

Another bottle of laughter popped open

Another nagging phone call

A stray smile on the stairwell

A plane ticket from you to me, just waiting to exist.



In savouring the bitter sweet memories of yesterday
 Navigating through the misty corridors
 lost to time
 Reminiscing the happy go lucky days of
 the past decades
 Cherishing most events and moments of
 the hallowed past
 Racing towards the mirage of an
 invisible morrow
 Chasing an elusive dream of the
 purpose in life
 Caught betwixt hangover of yesterdays glory
 and euphoria of tomorrow
 Searching for embers in
 yesterdays fire
 Too late awakening to the reality of
 ashes all around
 By the time dawn of realization sets in
 My today had become yesterday
 and tomorrow an enigma
 Alas too late my present is lost forever in sands of time
 A fading memory, a lingering fragrance
 and a faint echo.

BEHIND THE SCENES

by **Eilam Lehrman**, **Lucas Campa**, **Hannah Lin**, and **Keylin Escobar**

EILAM LEHRMAN

I have served as the administrator of the RCSS website for the past three years. As the website admin, I have done my best to make sure that every scholar has a profile on the website, and that their projects are represented publicly in whatever way they think best. I know that the RCSS website is one of the first things someone will look at when they want to learn more about the RCSS, and so I have always strived to center the work that the scholars do, posting the events and articles that their projects generate, as the scholars are the most important part of the RCSS. I think that one of the most valuable elements of the RCSS is the fact that every scholar can pursue their project freely, without being told what to do; and so my goal has always been to have the website reflect the intellectual freedom that the RCSS allows for and all of the wonderful projects scholars have worked on with that freedom.

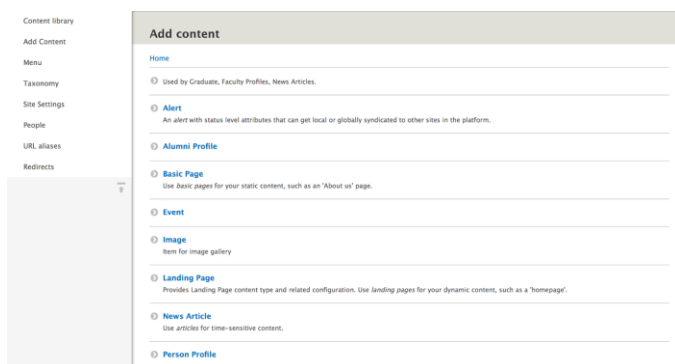
contact with every scholar and every project.

Seeing what the latest scholars are working on, I graduate with the confidence that the RCSS will continue to produce amazing and impactful projects, and I am glad to have been able to help facilitate those projects throughout my time with the RCSS. I can't wait to see what the scholars of the RCSS accomplish next!

LUCAS CAMPA

As my first year running the finances for the RCSS comes to an end, I feel gratitude and appreciation to the entire RCSS team for this experience. From conversations with Dr. Pollack and meetings with Jaya, as well as the group of intern/scholars, I feel like I have been able to learn a lot about what exactly it means to run the finances for a group. One of the most important things that I have learned is the importance of organization - making sure that everything is in the right place and that information is readily accessible to be presented to the rest of the team. Also, this position cemented for me the importance of communication in a work setting, as many times in these roles there are multiple stakeholders requesting different pieces of information. Because of this, clarity and effective communication is extremely important to be effective.

Overall, besides the skills that I have learned in this position, I believe that the true value of the RCSS lies in the people involved and the relations that one builds with the rest of the members involved. The RCSS is a passionate group of individuals, both in terms of the administrative team as well as the student/interns, and I think that it is an extremely unique college experience which I am happy to be a part of. As an Economics-Philosophy student who has sometimes doubted why he is involved in a science research group, the RCSS team has been more than welcoming and I believe that I have been able to find my place within the group and contribute and learn from everyone due to the accommodating nature of the group. It has been a great year as part of this group and I truly look forward to continuing to be involved next year.



An image of the interface Eilam sees when managing the website and keeping all member profiles up to date.

As a graduating senior, I look back on my time with the RCSS quite fondly, even when the RCSS went hybrid. Each year when new scholars join, I always find myself stunned by the creativity of their ideas and the breadth of disciplines that they span with their work. I am glad to have worked on the website, as it allowed me to really come into

HANNAH LIN

Over the past year, I have been in charge of gathering RCSS together – a challenging task in the age of COVID. From squares on Zoom to hybrid lunches in Faculty House (imagine ten people gathered around a table in a conference room, munching on sandwiches and passing around a microphone to speak to the people on Zoom, who are left at home watching everyone eat on their computer screens) and back to squares on Zoom, RCSS has expanded the limits of “togetherness.” Yet we have pushed through the odds, a testament to the self-driven nature of the RCSS intern-scholars, the unwavering support of the RCSS advisory board, and the student-proposed projects that simultaneously bridge and transcend disciplines.

Now, after three years without a published journal, we celebrate our return to campus with a 2022 edition of our print publication. Over spring break, Keylin and I met over Zoom with all of the scholars in this journal to talk about how each of them wanted their projects portrayed and about their experiences in RCSS. On every one of these pages, their brilliant personalities shine through individually. Collectively, their pages come together to paint a picture of the core of RCSS: projects that are unique because they are student-inspired, student-motivated, and student-directed. And, in the midst of this pandemic, this journal brings us together in yet another way – this time, not on Zoom or in person, but in a print publication that will forever celebrate this group of intern-scholars, living on to inspire, surprise, and excite future students who will soon make their own mark in

RCSS and the world beyond.

KEYLIN ESCOBAR

It all started with a text from Ponce, asking me if I wanted to help run and design the RCSS journal. Not long after that text, I found myself in an email thread with Hannah, who made sure I had everything I needed and support from the beginning. Coming in, I was very excited to design and put together the RCSS journal, and when I learned there hadn't been a journal for three years, I knew I had to make this one special. Over Zoom, Hannah and I spoke with all of the scholars whose works you've read to get their perspectives on their projects but also to learn more about them in order to add more personal touches to this journal. And even though I have loved getting to know everyone over Zoom, I can't wait to finally meet everyone in person.

Working on this journal has been a wonderful and exciting experience, allowing me to bring scholars together, both graduated and current, to celebrate their amazing work. I have enjoyed every part of the process, from the meetings to working with Hannah to get this journal published to getting to know everyone's favorite colors, and finally seeing everything come together. RCSS is an amazing community that I am happy and grateful to be a part of. It's inspiring to see the amazing feats scholars have accomplished and continue to accomplish in this wonderfully supportive community. I am very excited to hear about the amazing accomplishments that I will be bringing together in the following journal! ■

ABOUT THE SCHOLARS

Eilam Lehrman (CC '22) is a graduating senior majoring in Mathematics and Computer Science. Three words to describe himself? Cautious, nerdy, and comedian-at-heart (still counts as one word). His favorite color is best described by a hex code: 4D22BD.

Lucas Campa (CC '23) is a junior from Spain studying Economics and Philosophy. He enjoys entrepreneurship, film, and soccer!



Hannah Lin (CC '23) is a junior from Illinois studying Neuroscience and Public Health. Her favorite color is yellow, and she enjoys walking around and exploring cities, eating lots of food, and connecting with new people.

Keylin Escobar (CC '24) is a sophomore from New York studying Biophysics and Music. Although she doesn't have a favorite color, she loves color gradients, and her favorite (for now) is the sunset. She enjoys music (so much she's studying it) and doing anything artsy or design related (like this journal).



Acknowledgements

*This journal was produced and designed by Keylin Escobar
with logistical and administrative support from Hannah Lin
and the rest of the RCSS*





SCIENCE AND SUBJECTIVITY