



# WHAT A FINISH!

THE CLASS OF 2021 GRAPPLED  
WITH THE UNEXPECTED

BY GAVIN JENKINS



Rotations, residency interviews, tying the knot . . . little transpired as it was supposed to for the Class of 2021. Shown here: The class on the Gateway Clipper during a 2017 orientation outing.



S now flurries had fallen overnight but hadn't stuck to the ground. It was Monday, March 15, 2020—four days after the World Health Organization had declared COVID-19 a pandemic. Eve Bowers walked around UPMC Presbyterian in the cold, searching for an open entrance. As the Pitt Med student pulled one locked door after another on that gray morning, she wondered if she would be sent home when she finally reached the otolaryngology department, where she was scheduled to report for an acting internship.

Rounding the corner on Lothrop Street, Bowers noticed a group of security guards standing in front of the emergency department entrance. They wore face masks (an unfamiliar sight at the time). As Bowers passed the group and entered the hospital, she hoped to be sent home.

From what she had heard, the medical school was going to close. She thought it would be about two weeks, and then everything would go back to normal.

A Sewickley native who had graduated from the University of Pennsylvania in 2016, Bowers wanted to leave the city and its lingering winter weather for a place where she'd feel warm and safe from COVID-19.

At the otolaryngology department, a resident granted Bowers her wish and told her to leave. For a moment, Bowers felt like a kid learning about a snow day. "I thought: 'Two-week vacation!' But I also felt stressed because it was a pandemic." At her apartment later, Bowers was overwhelmed by conflicting emotions. The pandemic was "insane and somewhat thrilling," yet the uncertainty frustrated her. "It almost felt like the end of the world," Bowers said.

She packed some clothes and food and drove to North Carolina to stay with her sister. When she returned to Pittsburgh three months later, she was itching to get back inside a hospital, this time as a fourth-year medical student.

## NOT A TIME FOR SENIORITIS

During the fourth year of medical school, students study for the Step 2 CK (clinical knowledge) exam, prepare residency applications and complete their away rotations, which are essentially monthlong interviews at institutions across the country. It's hardly a breeze. However, it's also a time when students tend to have more control over their academic schedule, and many make the most of travel opportunities, including rotations abroad.

Stephen Canton, a Clinical Scientist Training Program (CSTP) student, compares it to senior year of high school. A feeling sets in that's "similar to senioritis," said Canton, 29. Most students are advised to take advantage of the flexibility during their fourth year to catch their breath, he adds, because "they know how strenuous residency can be."

But, of course, nothing transpired as it was supposed to this past year. Travel plans and research projects were canceled. Students hurried to fill their schedules with rotations and electives they needed to graduate. This spring, the graduates enter a profession that's on the front lines of a pandemic.

As Vice Dean Ann Thompson put it:

"They'll be telling people stories about this when they're 90."

In spring 2020, when Pitt Med students were away during the extended spring break, administrators held daily meetings to figure out how they could maintain academic progression for students and safety for everyone at the same time, according to Jason Rosenstock, associate dean for medical education.

Each step was uncharted, so Rosenstock and others at Pitt Med spoke each week to their counterparts at Harvard, Yale and other medical schools about how to move forward. They also attended a series of Association of American Medical Colleges webinars on providing clinical instruction remotely.

Pitt Med's administration essentially restructured its curriculum on the fly—what would normally be years of work, they accomplished in a matter of days. When students returned in May, Pitt Med replaced live patient interactions with simulations and added a telemedicine training program. The school also expanded the number of courses that would qualify for an acting internship. "This gave them scheduling flexibility and made it easier for them to graduate," Rosenstock said.

When the pandemic began, the current third-year students (Class of 2022) were about to start clinical rotations and take their Step 1 exams. Both got pushed back by several months.

Frustration was palpable among all the classes. To keep students informed, Rosenstock coordinated with leaders from each year to keep everyone in the loop and updated students nearly every day through email. "He has done an amazing job," Canton said of Rosenstock. "He really let us know that he was hearing our concerns."

## WILL I BE READY FOR RESIDENCY?

Rosenstock said he received two questions more than any others from fourth-year students:

One: Will I be ready for residency?

The answer—yes. In May, fourth-years go through Pitt Med's annual residency boot camp, where they practice situations they'll face as physicians, as well as sharpen nontechnical skills like time management. This year, Pitt Med has added supplemental training on



Stephen Canton (left, shown pre-pandemic) is a Clinical Scientist Training Program student and an entrepreneur.

COVID-19 to its regular boot camp curriculum. On their rotations, students had not been allowed to treat patients who tested positive for the virus.

The other popular question:  
How will I match?

So, there was good and bad news. The good news: Because away rotations were canceled to prevent further spread of COVID-19, every medical student in the country was in the same boat. The bad news: Without away rotations, students couldn't showcase their skills and win over residency program decision-makers. In the past, away rotations have helped students who had high scores on the first of the national boards, also known as Step 1, but low scores elsewhere.

"Do well on a rotation elsewhere, and they'll likely say, 'Let's take them,'" Thompson said.

A lot was riding on virtual interviews.

## SHOWING UP

When the pandemic began, and the fate of their academic future was uncertain, the Class of 2021, and the students from other years, stepped up to battle the spread of the novel coronavirus. Some students served as case investigators and spoke with patients who had been diagnosed with COVID-19 about their symptoms. Others worked as contact tracers.

Along with other Pitt Med students, fourth-years raised money for charity, delivered medication to older residents and provided childcare support for clinicians.

They also, with their classmates and mentors, stood up for social justice in the wake of George Floyd's death.

When Rafa Ifthikhar and other social medicine fellows heard about the "White Coats for Black Lives" protest, they got the word out to other students over social media. It was almost noon on June 5—a warm, cloudy day—as Pitt Med students from all classes gathered outside Alan Magee Scaife Hall. That was the first time many of them had seen one another in person





Several members from the Class of 2021 participated in the “White Coats for Black Lives” protest on June 5 along with classmates and mentors.



Jessica Z.L. An and Kirkland An changed their wedding plans because of COVID-19. (Courtesy @laurachengphoto)



Brady and Anna Marburger with their daughter, Charlotte.

since mid-March. A fourth-year student and aspiring ob/gyn, Ifthikhar noticed that the group gathering on Terrace Street had a “weird reunion” vibe.

More students arrived than she’d anticipated. The mood became more somber as the group walked down the hill toward the lawn in front of UPMC Presbyterian. Facing Fifth Avenue, the students merged with clinicians wearing white coats and face masks. People held signs that read, “Racism is a public health crisis” and “Black Lives Matter.”

The crowd knelt for 8 minutes and 46 seconds—the amount of time Minneapolis police officer Derek Chauvin pressed his knee into Floyd’s neck until he died on May 25.

“All you could hear were the cars going by,” said Ifthikhar, 26. “It was a good event, but if substantive change doesn’t come out of it, then it was just really performative.”

Throughout the summer, University administrators—including Anantha Shekhar, an MD/PhD, and John and Gertrude Petersen Dean of the School of Medicine and senior vice chancellor for the health sciences—met with Black students, faculty and staff to talk about police brutality and systemic anti-Black racism in society. Administrators also invited students of Asian descent to participate in video conference support sessions to combat the rise in racism and violence toward members of their communities.

Canton, who earned a bachelor’s degree in bio-engineering from Pitt, spoke to administrators as part of a panel on racism last summer. Afterward, Canton met one-on-one with Shekhar, who had started his new role on June 1, 2020.

“In our first meeting, I was immediately moved by how down-to-earth and warm he was for a person in his position. Many of the concerns and questions that I presented to him, I have already seen be put into action,” Canton says.

Pitt students from throughout the University

continue to be a catalyst for Pitt’s antiracism and equity efforts.

## LIGHTS, CAMERA, ZOOM

Jessica Z.L. An sat at a table in the “all-purpose room.” Typical for one-bedroom apartments in East Liberty, it combines a kitchen, living room and dining room. Some Pitt Med students took advantage of conference rooms and offices at Alan Magee Scaife Hall for residency interviews. An chose to interview from home.

With so much at stake for residency, An created a setting that could rival anything a virtual panel guest on CNN would use.

An’s husband, Kirkland An, who works for Pitt’s Office of Communications and Marketing as an editorial production specialist, bought her a laptop stand and a ring light. As she answered questions from internal medicine and pediatrics physicians, An looked into her computer’s camera, which rested at eye level. The light shined onto her face and the white wall behind her.

The virtual residency interviews might last up to eight hours, with a student being transferred from one virtual breakout room after another to be questioned by physicians.

There was a five-second delay when An was transferred to another breakout room. As the next room loaded, she stood for the first time in an hour. The 24-year-old sipped from a glass of water, and then sat again before another physician appeared on her computer screen.

“The interviews were rapid paced,” An said later. “And since it was on Zoom, you didn’t always get a break.”

When there isn’t a pandemic raging, fourth-year med students fund their own away rotations and residency interviews. They spend a small fortune on airfare, lodging and food.

Students found other opportunities to make lemonade from lemons, too.

Friendly and outgoing, An had been looking forward to meeting fellow medical students as well as residents and attending physicians on the interview trail. Instead, An debriefed her husband in between interviews.

“I would turn off the ring light and go into the other room to talk with him,” An said. “Sometimes, we’d walk around the block.”

Kirkland An took notes of their debriefing sessions; his notes helped An finalize her rank list of where she’d like to match.

There is not a cap on how many residency programs to which a med student can apply. Yet the cost of applying and traveling can limit options. This year, virtual interviews gave med students the opportunity to apply to more residency programs than usual.

Thompson said she heard that one program in the country received 800 applications for fewer than 20 residency spots.

“I’ve heard about students applying to every single program in the country,” Thompson said.

She added that it was a challenge to persuade people that applying to 50 programs was unnecessary; Pitt Med students typically land a spot in one of their top three choices. “If they’ve done well here, they’re going to be viewed as first rate,” she said. “Our reputation serves them well.”

Canton said he followed Pitt Med’s recommendation himself. However, the Wilkinsburg native understands why some of his classmates applied to as many programs as they could. Especially those vying for more competitive specialties, like ophthalmology, dermatology, plastic surgery and neurosurgery.

“At some institutions, there are three slots for plastic surgery and 15 for pediatrics, which is not an indication of the importance of the

specialties, just simply a result of supply and demand,” he said.

Brady Marburger found a silver lining too.

In July, Marburger’s wife, Anna, gave birth to Charlotte. If the away rotations hadn’t been canceled, the 27-year-old, Harmony, Pennsylvania, native probably would have gone on a few monthlong trips.

“It was really nice to have an interview from 8 a.m. to noon, and then be able to spend the rest of the day with Charlotte,” he says.

## PANDEMIC HITS HOME

The residency interview process was painful for some. One Pitt Med student, we’ll call her Emily, was diagnosed with COVID-19 in late November—less than two weeks before her first interview.

Emily suffered from shortness of breath and gastrointestinal symptoms. She was never hospitalized, but her neurologist thinks she had COVID encephalopathy—an inflammation of the brain that can cause confusion and excessive sleepiness—and should have been admitted.

Emily was diagnosed with a memory deficit because of COVID-19. She mostly recovered from the virus in early December, but her memory problems persist.

“So, I did all of my interviews with difficulty finding words,” Emily said. “It was really challenging.”

In mid-December, a week after testing negative for COVID-19, Emily sat in front of her laptop, wearing dress pants and a dark blazer. It was one of the only times she had fixed up her hair and applied makeup since the pandemic began. Like An, she’d created a professional set-up for herself.

As the residency interview began, she spoke to three physicians at a time. They asked questions like, “How do you handle stress?” and proposed hypothetical scenarios involving patients. She had to think on her feet, and she was still tired from the coronavirus.

“I don’t think I realized how bad my memory and speaking were until I got into the interview cycle,” she recalled.

“I was forgetting questions that I was being asked, and I would just kind of stare blankly at the screen.”

Emily applied for one of the more difficult fields to enter. Her longest session consisted of 15 interviews, 15 minutes each. When it was

over, she was exhausted, and her cheeks hurt from smiling—she was so close to residency.

## ROLLING WITH THE PUNCHES

Victoria Humphrey (Class of 2021) stood at the back of a line to enter UPMC Shadyside. It was just after dawn on a warm July 2020 morning, and Humphrey waited to get her temperature taken before beginning an acting internship (what many still call a “sub-I”) in medicine. Though Pitt Med students returned in May 2020, this was her first time in a clinical setting since the pandemic started.

Everyone in line wore a mask, and, as Humphrey learned in the days ahead, recognizing new coworkers by half of their faces can be a challenge. After months of learning virtually from her native Florida, Humphrey was excited to be back in person.

“I didn’t know what to expect,” she said. “I knew I needed to go with the flow.”

She and her classmates exercised this mentality in their personal lives, as well.

An and her husband, Kirkland, were supposed to get married in July 2020. However, they moved the date up to May 2020, so An could self-quarantine in time to return to her acting internship. Only their immediate families and the pastor attended, standing 6 feet apart and wearing masks.

Pitt granted the couple access to Zoom, and 184 computer screens—some with multiple household members—tuned in for the ceremony. The virtual event allowed the Eastern Pennsylvania natives to invite people who would not have otherwise been able to attend, including some of An’s relatives in China.

Held at a Philadelphia church, the wedding was filmed using multiple cameras so the audience could see An’s face as her father walked her down the aisle. An’s brother, a broadcast journalism major at the University of Missouri, switched angles throughout the wedding.

“It was definitely a different experience but still really great,” An said. “We had what was most important.”

In November, Canton remotely defended his thesis for a master’s in clinical research.

Canton, who had received a master’s in kinesiology from Louisiana State University before entering Pitt Med, was able to invite his mother, twin brother, friends and old profes-

sors to watch his remote defense of two papers. At the end, he included his Sterile Vision pitch.

Canton is the CEO of Sterile Vision, a startup that’s developed a computer-vision and machine-learning platform to streamline operating room workflow and hospital-supply chain processes. (Read more about the startup on p. 14.)

As Canton waited for his committee to return, he talked with his friends and family about Sterile Vision’s potential. When the committee members returned, they passed Canton without requesting revisions.

“I felt really good,” said Canton.

Sterile Vision has been accepted into a local incubator and has found investors.

Canton notes that he has to balance his energy between residency and entrepreneurship. He says residency is a priority at this time because it is “five years to really get it right and set the foundation for the rest of my surgical career.”

Speaking of balancing acts—are Marburger and his wife, a teacher, ready to juggle parenthood with residency?

“The last year prepared us for what it can be like and that we can get through it,” he said.

“It’s not going to get easier, but I think we’ll get better at handling it.”

—Sarah Stager contributed to this report.

## EPILOGUE

On March 19, members of the Class of 2021 learned the setting for the next chapter of their careers.

Humphrey matched in dermatology with Massachusetts General Hospital/Harvard University. Bowers, who is Humphrey’s cousin, matched in otolaryngology at Jackson Health/University of Miami Health System.

An and her husband are headed to Texas; she matched in internal medicine/pediatrics at Baylor College of Medicine and Texas Children’s Hospital in Houston.

Ifthikhar matched in obstetrics and gynecology at the University of California San Diego/Jacobs Medical Center.

Canton and Marburger—both of whom are Pittsburgh-area natives—get to remain close to home. Canton matched in orthopaedic surgery with UPMC Presbyterian and Marburger matched in pediatrics at Children’s Hospital of Pittsburgh of UPMC.

For the complete match list, see page 34. ■



# Pulled Away from the Lab

**PHD STUDENTS ANGST, BUT ALSO WRITE, TEACH AND HIKE | BY CRISTINA ROVALIS**

Pam Brigleb was on a roll. She was spending long days in the lab, studying how a particular virus, known as reovirus, could trigger celiac disease. The results looked promising. The 25-year-old PhD student at the School of Medicine was tingling with excitement about the breakthroughs, which she hoped could one day lead to a celiac therapy.

Then another virus entered the picture—the novel coronavirus—and the world, including her lab, was forced to shut down. The weekend before the March 16 closing date, Brigleb worked day and night to get in as many trials as she could.

For Brigleb, the pandemic has been a frustrating interruption in her work in the lab run by Terence Dermody, the Vira I. Heinz Distinguished Professor and chair of pediatrics. But the time off motivated her to do something else she has always wanted to do—teach a class. A trained immunologist in a lab filled with virologists, she started a remote Friday class and dubbed it “Immunology with Pam.”

“It was a good opportunity to get teaching experience,” says Brigleb, who wrote an article about it for *Nature*. The fourth-year grad student hopes the pandemic won’t delay her plans to graduate in 2022.

Christopher Harim Lee, 30, is on track to present his dissertation by December 2021. Lee and Brigleb both do research with reoviruses, which sometimes cause mild respiratory or gastrointestinal symptoms in humans but often are asymptomatic. (Scientists like to employ them as model viruses to study how similar viruses can cause disease.)

When the lab reopened on a staggered schedule in June, the shortened hours allowed him to concentrate on his writing. “Sometimes I go down the wormhole of lab research. This lets me look at the big picture.”

Even so, he and other grad students miss the camaraderie of the lab.

Throughout the pandemic, Dermody has organized activities to keep his graduate students connected: Regular Zoom calls. In-person hikes on Mount Washington with hikers staggered 10 feet apart. A short-lived book club.

“I don’t like to use the words ‘social distancing,’” says Dermody, physician-in-chief and scientific director of Children’s Hospital of Pittsburgh of UPMC. “That is inhumane. Solitary confinement is cruel and unusual punishment. We were physically distanced.”

His students took turns presenting on provocative scientific papers. They also took on writing “sprints.” A researcher would be given a deadline to write a section of their thesis, and two “sprinters” would provide

feedback. “It was write, review, revise—and repeat,” Dermody says.

John Horn, associate dean for graduate studies, says the pandemic has been hard on students, most of whom are in their 20s, an age when socialization is important. “It’s very stressful for them. We know that because we’ve surveyed them. Some of them have coped well. Some of them probably not so well.” (School of Medicine students have access to Pitt counselors and other mental health resources: [www.medstudentaffairs.pitt.edu/contact-us/mental-health-team](http://www.medstudentaffairs.pitt.edu/contact-us/mental-health-team).)

Some first-year students said the lab-free days left them feeling isolated after moving to a new city. It also left them unsure of the progress they were making. Some mentioned becoming overwhelmed with uncertainty.

For second-year student Bellina Mushala, the pandemic meant forgoing her third rotation in a lab in the molecular pharmacology program. Instead, she coauthored a literature review article through a series of virtual one-on-one sessions with Iain Scott, PhD assistant professor of medicine. She liked the experience so much that she decided to join his lab.

Even so, the 22-year-old worried about the lost bench time—she wasn’t able to return to the lab until August. “It was a real self battle,” she says. Scott reassured her that a PhD was a marathon, not a sprint.

The death of George Floyd and other injustices brought to light last year, including the disproportionate number of underrepresented minorities dying from COVID-19, made 2020 all the more difficult for Mushala, who is a person of color.

As citizens took to the streets for justice, Mushala and other students confronted administrators about equity issues at Pitt Med. She was heartened by the way they listened to student concerns. The graduate program office brought on Priscilla Morales as assistant director for admissions and diversity. The Biomedical Graduate Student Association now has a diversity and inclusion committee.

Even before the pandemic, the School of Medicine wanted to ramp up career planning for late-stage PhD students who were so engrossed in finishing their dissertation that they didn’t have time to think of what came next. Pitt Med now offers virtual career workshops, which allow those approaching the finish line to explore career goals and options.

The biggest hardship was on people who had just graduated and were looking for jobs, Dermody says: “The market for science jobs basically dried up.” But he reassures students who are preparing their dissertations that they can hone their skills until the market turns. “I have told them many, many times, ‘When resources are constrained, the best place to be is in training. It’s going to get better.’” ■