



Drexel HOPE: Targeting the Opioid Epidemic

The opioid epidemic in America is running rampant, particularly in big cities like Philadelphia. Last year, the Centers for Disease Control and Prevention reported the highest number of drug deaths ever recorded in a 12-month period; more than 81,000 people died of drug overdoses between May 2019 and May 2020 nationwide. Philadelphia has the highest overdose rate of the 10 largest U.S. cities; in 2019, more than 1,100 residents lost their lives to drug overdoses, which was triple the number of homicides in the city.



Drexel HOPE mobile van staff members, including Vince Mason, peer recovery support specialist (back); program director Zsofia Szep, case manager Jesse Telles, program manager Jen Mainville, and mobile unit driver Ralph Dixon (middle row L-R); and physician assistant Rachel Fox (front).

In the past, drug overdoses were most prevalent in the white population. But last year, the number of Black and Hispanic residents experiencing fatal overdoses increased dramatically, likely fueled in part by stress related to the COVID-19 pandemic.

The College of Medicine's Partnership Comprehensive Care Practice has responded to this public health crisis with Drexel HOPE™ (Health, Outreach, Partnership, Empowerment), funded with a five-year federal grant of \$2.5 million from the Substance Abuse and Mental Health Services Administration (SAMHSA). Drexel HOPE's mission is to provide quality health services with a focus on African American and Hispanic populations impacted by opioid use disorder, as well as HIV and hepatitis C, which often coexist with this disorder. Using the same care model that has been so successful for the Partnership in treating HIV, Drexel HOPE has a multidisciplinary team that offers virtual and in-person services via a mobile medical care van that goes out to communities most affected by opioid use disorder and lacking the resources to help those

who struggle with it. West Philadelphia was among the first of those communities identified by the Philadelphia Department of Health.

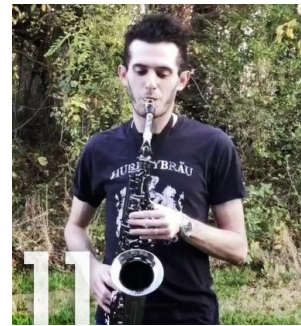
Since August 2020, the Drexel HOPE team has been taking the mobile unit to the corner of 52nd and Market Streets, where they park on the street and see clients from 10 a.m. to 2:30 p.m. every Thursday.

WINTER 2021

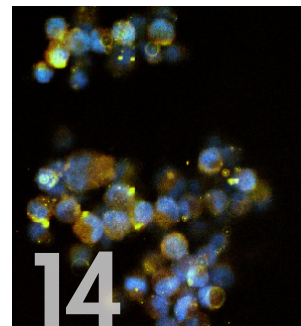
Vol. 8, No. 1



Reading Tournament supports literacy and Philly bookshop



Pediatric AIDS Benefit raises funds for kids in need



Glycosylation's key role in breast cancer initiation and spread

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pulse

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Dean's Desk

As we settle into 2021, I am proud of our college's continued ability to cope with new and varied challenges. It is a testament to our strength and resilience as a community.

Despite the COVID-19 pandemic and the resulting financial and logistical challenges, we have strengthened partnerships with affiliate sites and brought over 1,100 new clinical faculty on board in 2020. The education of our medical students will be greatly enhanced by these talented educators, and we are thrilled to count them as part of our community.



Charles B. Cairns, MD

To better support all of our faculty, we have restructured the Office of Faculty. Nancy Spector, MD, is now vice dean for faculty, in addition to her role as executive director of the ELAM program. Michele Kutzler, PhD, has been appointed associate dean for faculty. Donna McNelis, PhD, now serves as associate dean for professionalism and continuing education. This team is charged with developing and retaining an outstanding faculty and ensuring their well-being. In addition, we have added Ted Corbin, MD, as the

associate dean of community and external affairs to better engage health care providers in our communities.

Research has been another area of astounding growth. Our grant funding was up 53% in the first quarter of fiscal year 2021 and continues to outpace last year's funding in the second quarter.

Our esteemed researchers have worked hard to return safely to their labs or to pivot their work to online venues, and their commitment to ongoing innovation is commendable.

Our expansion to the new campus in West Reading, Pennsylvania, continues on schedule. The Middle States Commission on Higher Education accredited the site on November 3. The building itself, which is stunning to behold, will be ready to accept our first class of first-year MD program students in August. Our partnership with Tower Health is strong.

There is so much that is uncertain at this time, but I am confident that our strengths as an institution — leadership, compassion, dedication and resiliency — will guide us throughout 2021 and beyond.

Be well,

Charles B. Cairns, MD

Walter H. and Leonore Annenberg Dean
Senior Vice President of Medical Affairs

I am proud of our ability to cope with new and varied challenges. It is a testament to our strength and resilience.

Health Disparities During COVID-19

"Of all the forms of inequality, injustice in health is the most shocking and the most inhuman..."

– Dr. Martin Luther King Jr.

When I initially heard this quote as a young child, I did not fully grasp the gravity of the statement. However, as an adult, and more importantly as an African American medical student, I have gained clarity through many personal experiences. Throughout my childhood, I lived in the rural South. As I observed firsthand the drastic differences in both health care and education between my community and others, I began to understand health disparities and the significant role they played in many people's lives. Historically, socioeconomically disadvantaged communities suffer disproportionately in terms of health care. They tend to have less access to proper care, and they often report feeling mistreated once care is received. Additionally, it is well documented that health care providers' implicit biases may negatively affect certain patients' treatment and outcome. These issues, and many more, contribute to the disparity in health care between marginalized groups and their counterparts. Unfortunately, the COVID-19 pandemic, like many other illnesses, impacts these vulnerable communities most severely.

Low-income and disadvantaged populations have struggled immensely since the onset of the pandemic. I vividly remember when the government began suggesting that everyone work from home to protect themselves from transmission. For many members of underprivileged communities, this was not feasible. These individuals often work in essential positions, such as retail and the food industry. Therefore, the most vulnerable populations were forced to work on the front lines, increasing their risk of contracting COVID-19 even further. Additionally, many members of these communities lack adequate health literacy. This has caused confusion throughout these populations regarding virus prevention and transmission. This same lack of health literacy also coincides with the decreased preventive care practices in these populations. Because of this, chronic conditions such as diabetes, kidney disease and hypertension disproportionately impact these communities, increasing their risk for COVID-19 complications.

Furthermore, the lack of access to proper COVID-19 testing among disadvantaged communities became apparent to me after a heated conversation with my mom. I remember answering my cell phone to her frightened voice, asking "So where can I get tested? Everyone keeps talking about this virus, and I want to know if I have been exposed, but I just don't know where to go." I listened to her, frustrated, as she shared her concerns with me. She could not understand why I, a resident of a developed, metropolitan

area like Philadelphia, had access to multiple testing sites, while she, living in rural Mississippi, had none. After this difficult conversation with my mom, I began to research further, and I discovered that underprivileged and low-income communities had far fewer testing sites per square mile than more affluent communities.

Members of disadvantaged groups also have less opportunity to properly adhere to social distancing guidelines. Many of these individuals lack stable transportation; thus they are forced to continue taking public buses and trains despite the COVID-19 pandemic. Additionally, many school systems have assumed that all students have access to updated technological services, such as computers, iPads and working Wi-Fi. The transition to remote education has negatively affected many disadvantaged families while benefiting their counterparts with healthy home environments lacking distractions. Students from marginalized groups have struggled to remain up to par with their classmates due to these drastic differences in the resources accessible to them.

All of these factors play a key role in the disproportionate impact that COVID-19 has had on socioeconomically disadvantaged communities. As we move forward as a society, similar deep-rooted issues also impact vulnerable populations' perspective on the COVID-19 vaccine. Many members of these populations are understandably wary of taking the vaccine that was recently made available. In the past, certain marginalized groups, especially African Americans,

• *continued on page 5*



Erica Riddick, MS Biomedical Studies '20
MD Program Class of 2024

Drexel HOPE

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“When we first started, we focused on building trust in the community by offering blood pressure screenings, and by handing out HIV home test kits and naloxone for overdose prevention,” says Zsafia Szep, MD, MSCE, Drexel HOPE program director and associate professor of medicine. “If you live in Philly, you never know when someone is going to overdose on the subway or the street. Naloxone saves a lot of lives.”

The mobile unit started to see clients for opioid use disorder in October. “Our first priority is letting people know that there is effective medication-assisted treatment (MAT) and prescribing it for those who need it,” says Szep, noting that “Buprenorphine has FDA approval for opioid use disorder and is very effective. Most people find that it helps them battle their addiction and get their lives back in order.”

Szep completed an eight-hour buprenorphine training course, which is required of all health care providers before they can prescribe it.

In 2020, Drexel HOPE:

- Provided over 230 naloxone units to the community
- Saw 24 patients
- Completed 68 appointments:
 - 23 mobile unit
 - 45 telemedicine
- Linked one patient to PrEP
- Re-engaged two long-term care HIV+ patients
- Linked one patient to recovery housing
- Linked 13 patients to medication-assisted treatment intakes
- Enrolled two patients in insurance coverage
- Handed out more than 70 at-home HIV test kits

A Team Approach

In addition to medication, the team provides support during opioid use disorder recovery, training and tools for overdose reversal and prevention, and connection to local resources for well-being and further medical care. Led by Szep, the team includes Jennifer Mainville, MPH, program manager; Rachel Fox, PA-C, provider; Jesse Telles, LSW, case manager; and Vincent Mason, peer recovery support specialist.

“Our case manager helps clients with health insurance, housing issues and referrals to a number of community organizations we partner with to provide assistance,” Szep notes. Partners include Free Library of Philadelphia, Merakey, Delaware Valley Community Health, Inc., Pathways to Housing PA, Pennsylvania Alliance of Recovery Residences (PARR), Prevention Point, Public Health Management Corporation and the College of Medicine’s Caring Together program.

“Through PARR, for example, we have arranged to provide three months of recovery housing for 15 clients per year,” explains Szep. “For behavioral health needs, we refer clients to Merakey.”

Drexel HOPE also partners with the Free Library of

Philadelphia to provide community education sessions about prevention and treatment of opioid use disorder, HIV and hepatitis C, as well as overdose prevention.

“We chose the library as a partner because of the high prevalence of overdoses in the city libraries,” notes Szep.

One of the most important services Drexel HOPE provides is linking patients to primary care and behavioral health services as well as MAT programs. “Most participants of Drexel HOPE don’t seem to have a relationship with a PCP, and many of them have chronic health or mental health issues that are not being well managed,” says Szep. “Our program facilitates access to care, including buprenorphine treatment, by removing some of the barriers and providing the ongoing support they need to be successful.”

Better Care Through Empathy

The team’s certified peer specialist, Vincent Mason, plays a key role in providing support and advocacy for clients in recovery from opioid use disorder. According to SAMSHA, peer support increases clients’ sense that treatment is working while

decreasing substance abuse and depression.

Mason has been a certified peer recovery specialist since 2015, but his work was 30 years in the making. “My first experience with drug issues began at a really young age,” he says. “I started with smoking marijuana — I felt it couldn’t hurt me. I went from smoking marijuana, which was no longer getting me where I wanted to go, to shooting heroin. It took away everything I ever earned, all my aspirations and desires. Addiction became the number one priority. It consumes you. All you think about is how to get more drugs.

“Eventually I was living in a car,” continues Mason, who is a military veteran. “I had a job but lost it because I wasn’t showing up for work. Then I couldn’t pay my bills. My family was tired of seeing me wrecked and using. Finally, after many years, I started going to 12-step meetings. I thank God for those people who cared for me when I didn’t care for myself. When I fell off the wagon, they kept welcoming me back. They wanted me to get better when I didn’t

know if I wanted to or didn’t know if I could. They hung in there with me.

“Now I try to do the same for my clients. I tell them, ‘If you make a mistake, if you fall, I’m still going to be here



City Funding Broadens Clinical Scope

On December 31, 2020, Zsofia Szep and her colleague Annette Gadegbeku, MD, professor of family, community and preventive medicine and assistant dean of community health in the Office of Diversity, Equity & Inclusion, learned that they had received funding to support using the Drexel HOPE van for rapid COVID-19 testing. The more than \$155,000, spread over six months, was granted by the City of Philadelphia Department of Public Health and Philadelphia Mental Health Care Corporation. Gadegbeku notes that their application included “a plan to go to different sites in communities of need, especially those that had poor outcomes for COVID-19 and poor access to testing.”

Drexel also offers testing through the Dornsife Center for Neighborhood partnerships on Thursdays from 2 to 4 p.m., with no appointment required. Szep and Gadegbeku hope to add more testing locations as time goes on. “We’re starting small, and we want to make sure that we’re doing it right,” says Szep.

for you. Don’t beat yourself up ... just call me.’ I follow up with them at least once a week. I want them to understand that, no matter what, they can call me.”

Mason decided to become a peer recovery specialist at the suggestion of his Veterans Administration counselor. “She saw something in me, the work I was doing and the changes that were happening in my life,” he recalls. “She connected me to a VA peer recovery specialist who encouraged me to pursue it as a career.”

“I choose to disclose my personal experience with addiction, homelessness and mental health issues to my clients,” he continues. “I use it to encourage and guide people, to let them know that I have been through what they are going through and it gets better. I try to shine a little hope on them.”

Mason notes that the pandemic has made things much harder for clients. “People are losing their jobs, don’t have food, can’t pay rent and might be evicted. Grandparents have to take care of children because their parents are struggling with addiction. Many need medication and can’t pay for it. So much stress makes it harder to fight addiction.”

Warm Reception, Hopeful Future

According to Szep, the West Philadelphia community has been very receptive to Drexel HOPE. “We’re treating people successfully with buprenorphine. We’ve also given out a lot of naloxone, and people are coming back and saying they used it to save someone’s life and ask for more,” she relates. “At the same time, we’re screening people for HIV, linking those who test positive to services and providing prophylactic medication to those who test negative.”

Drexel HOPE’s future goals include the addition of rapid COVID-19 testing, hepatitis C screening and blood draws on the mobile unit for HIV testing. The team hopes to see 50 patients in its first full year of operation and 100 patients in the second year.

“Opioid use disorder is a huge problem,” Szep concludes. “I urge all health care providers, no matter what their specialties, to participate in the X-waiver for prescribing buprenorphine, and also prescribe naloxone when needed. Providers need to get comfortable talking about this with their patients during visits. It could be an opportunity to save someone’s life.”

— Nancy West

Destination Excellence

• *continued from page 3*

were mistreated by the medical community. During the Tuskegee Syphilis Study, Black men were denied treatment for syphilis, even though a cure was readily available. This, as well as other incidents, has impacted this community’s view of the medical profession. It is essential that health care providers show empathy and understanding when discussing the vaccine with members of these populations rather than wrongfully judging them for refusing it.

In today’s society, the health care that individuals receive may differ based on race, ethnicity, social status and even zip code. The COVID-19 pandemic

has disproportionately impacted vulnerable communities, and it has highlighted the many barriers that disadvantaged groups often face. As a future health care provider, it is important to me that I, and my peers, remain educated about health disparities and the communities they most affect. Although the medical profession is currently far from perfect, I am confident that the physicians to come will ensure that all patients are treated equally and justly. Now, as I ponder Dr. Martin Luther King Jr.’s quote, I am feeling determined — now more than ever — to serve as an advocate for marginalized groups, like my very own.

— Erica Riddick, MS ’20,
MD Program Class of 2024

New Device Offers Hope for Chronic Wound Patients

Six and a half million Americans suffer with chronic wounds each year, with \$25 billion spent annually to treat them. Despite rapid innovation in medicine, the standard tool to determine the size of these wounds, and decide on costly treatment plans aimed at healing them, is a ruler.

“Believe it or not, the way we see if a treatment is working is that we take a ruler and measure the length and width of the wound, and then estimate the depth,” says Michael Weingarten, MD, MBA, a vascular surgeon and professor in the Department of Surgery. “But this can be very inaccurate. I can measure a wound, and then my nurse can measure the same wound and get a different reading. The following week, we might not measure the exact same spot. You’re basing costly treatment options on whether the wound is healing, but you’re not getting an accurate measure to guide decisions.”

Seeing how ripe this area was for new discoveries, 15 years ago Weingarten met with colleagues in the College of Medicine and School of Biomedical Engineering, Science and Health Systems to brainstorm areas for collaboration. “Essentially there were a bunch of geniuses on campus who were making these amazing devices and doing great research, and we had a lot of patients who



needed help,” says Weingarten.

In 2012, the team published a paper in the *Journal of Wound Repair and Regeneration*, in which they reported that using non-invasive, diffuse near-infrared spectroscopy allowed them to predict the effectiveness of a wound-healing treatment more accurately and to eliminate treatments that weren’t working. The findings showed that stopping the treatments that didn’t work after four weeks could have saved \$12,600 per patient. It also improved wound care before it turned to limb loss.

“If you see that you’re applying various topical agents to the wound and using other technologies such as hyperbaric oxygen and they are not working, you can change the path of treatment, which may get the wound to heal and ultimately save the patient’s leg,” says Weingarten.

Now Weingarten and colleagues have developed a patented device, licensed to Emunamedica LLC, that uses infrared technology to measure wound healing. The team hopes the device will be used by doctors and nurses in hospital settings and nursing facilities, and by home care nurses who could share data with a clinician who would advise

on the best treatment path. The device recently moved a step in that direction, obtaining “Breakthrough Device” designation from the U.S. Food and Drug Administration, the company reports. The FDA’s Breakthrough Devices program gives companies additional access to FDA officials and expertise to better evaluate issues or challenges in the device’s premarket review phase.

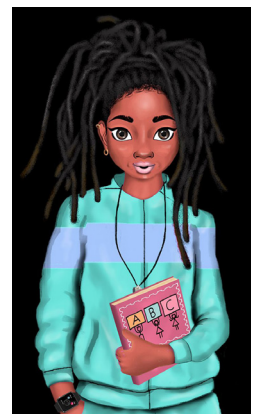
Reach Out and Read Shifts Gears

For six years, Hans Kersten, MD, professor of pediatrics, and Daniel Taylor, DO, associate professor of pediatrics, have organized an annual basketball tournament to fund the Reach Out and Read program at St. Christopher’s Hospital for Children. The program has allowed St. Chris to give out more than 30,000 books per year to children from birth through their teen years, while emphasizing the benefits of daily reading, talking and singing for children’s development.

This year, an in-person tournament was not possible due to COVID-19, so Kersten and Taylor organized the first-ever Reach Out and Read Virtual Reading Tournament, partnering with Harriett’s Bookshop, a local Black- and woman-owned bookstore in Philadelphia. Children and families visited the tournament website to watch videos from nationally renowned authors reading excerpts of their books, and then voted on their favorite.

Kersten notes, “The COVID-19 pandemic has disproportionately affected the communities we serve, and we felt it was critical to continue our Reach Out and Read efforts. We were fortunate to be able to partner with Harriett’s Bookshop, which offers children’s books that speak about experiences familiar to families of color.” He adds, “As a result of our Reading Tournament, thousands of dollars were spent at the bookshop and over 300 books were purchased to be distributed in our clinic.”

Visit www.readingtournament.com to see a new book highlight each month and to learn about a live virtual event to be held in the spring.



Jenella, the spokesperson for Reach Out & Read’s virtual tournament, was created by Minista Jazz from Harriett’s Bookshop and illustrated by Rafael Faustino.

Student-Run Clinics Continue Outreach Efforts

In her first year of medical school, Sanjana Venkat found a passion for serving patients at a Salvation Army rehabilitation center's health clinic, one of the five free health service sites from the College of Medicine's Health Outreach Project (HOP). Venkat returned to the clinic last spring as its steering coordinator, only to quickly shift gears as the site suspended in-person operations just two weeks into the semester because of COVID-19.

Prior to the pandemic, medical students and supervising faculty physicians volunteered at HOP sites to address the needs of patients from underserved communities. In addition to free clinics, HOP students were leading programs focusing on kids' physical activity and early childhood literacy, and providing community education.

When it became clear last spring that the pandemic would prevent students from working on their HOP programs in person for some time, the organization's student leaders began brainstorming alternative options. HOP co-chairs Benjamin Hutchison and Rohan Sehgal, both second-year medical students, began discussing how they might offer services online.

Sehgal and Hutchison collaborated with student leaders from HOP and other area student-run clinics and worked closely with their faculty advisors. Through these conversations, HOP leaders determined protocols for COVID-safe community outreach and education, as well as for providing high-quality, HIPAA-compliant teleclinic health care.

Hutchison noted that HOP leaders were able to adapt about half of their activities to virtual operations by the fall of 2020. A couple of clinics have reopened to offer virtual appointments, and various projects focused on childhood health and wellness, and on community education, have likewise moved to virtual formats.

New HOP projects have emerged during the pandemic as well; student volunteers coordinate produce drop-offs for people facing food insecurity and provide health education to program participants at The Arc of Philadelphia, where students ran a free clinic for people with intellectual and

developmental disabilities prior to the pandemic. The latter initiative is not only a collaboration with leadership at The Arc, but also with other Philadelphia-area medical students.

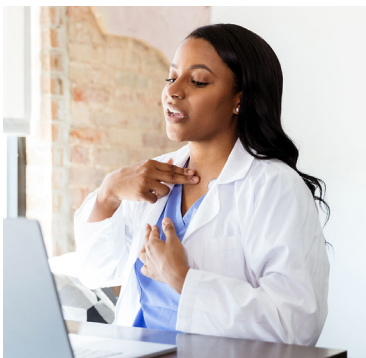
Highlighting the year's challenges, HOP students will lead presentations on a number of topics at the national virtual Society of Student Run Free Clinics Annual Conference in March. "Normally you'd submit one paper or abstract per student-run free clinic," Sehgal explains. "But we're going to have eight folks presenting on everything from our response to COVID-19 to telehealth."

It still isn't clear when HOP students will return more widely to in-person work in clinics and in the community, but now there are protocols in place to do so safely once the opportunities arise. When the current student leaders leave their positions in 2021, new HOP leaders will inherit clear guidelines for COVID-19 safety: prioritizing PPE, sanitization and social distancing whenever possible. "They have been given all the keys to a safe reopening," Sehgal says.

Students' first patient interactions are with HOP patients, and Sehgal, Venkat and Hutchison agree it is an invaluable hands-on learning experience. "A lot of what we do in M1 and M2 can be academic-based; it's a lot of reading." Sehgal notes. "It's not until you actually speak with a patient that you learn to translate the skills you've been taught into an actual interaction."

Venkat was pleasantly surprised to see that HOP's student-patient interactions hadn't become any less meaningful when they were conducted virtually. The major difference she has noticed between working with patients this year and last is the role of body language. On the phone, Venkat cannot smile to make a patient feel comfortable or gesture to convey information, so she has adjusted her reactions to the nature of the conversations. "You're still making a connection and forming a relationship with the patient, even if it may seem harder to do," she says. She thinks she will be a better physician one day for this time spent building her verbal communication skills.

"I love HOP. It's what drew me to Drexel specifically," she says. "I'm really proud to be part of it. It's great to see that it can adapt and grow with everything that's happening."



A Twist on a Holiday Classic

Unable to hold their annual holiday recital, DUCOM Classical reimaged the tradition by compiling recorded performances in a video they shared with area hospitals and nursing homes. The video is also available on the College of Medicine's YouTube page, youtube.com/drexelmedicine. Performers included Lorela Ciraku, Molecular & Cell Biology & Genetics PhD candidate; second-year medical students Kristen Ampig, Courtney DiSangro, Esther Kim (with younger sister Sharon) and Krishna Mallem; first-year medical students Bryant Chang, Nina Cheng and Caleb Middlebrook; and Doctor's Note, the College's a cappella group.

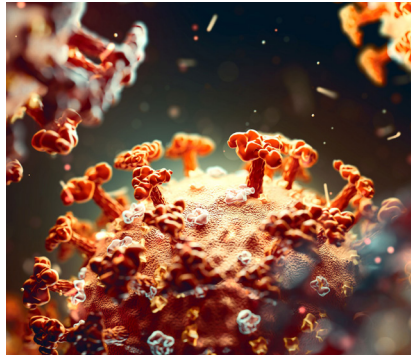


COVID-19 Study Is a Collaborative Effort

College of Medicine researchers are collaborating with Tower Health colleagues as part of a nationwide COVID-19 study funded by the National Institutes of Health's National Institute of Allergy and Infectious Diseases. For the "ImmunoPhenotyping Assessment in a COVID-19 Cohort" or IMPACC study, Drexel and Tower Health join nine other leading medical institutions to better understand varying immune responses to COVID-19, and thereby better understand the virus.

Researchers are collecting and analyzing biological specimens, including blood, endotracheal aspirates and nasal swabs, from COVID-19 patients who have been admitted to Tower Health's three Philadelphia-area hospitals – Chestnut Hill, Pottstown, and Reading Hospital. By analyzing the immunological implications of these samples, researchers hope to understand why some people with COVID-19 have severe symptoms and others have none, or why COVID-19 is fatal for some patients and not others.

Mariana Bernui, PhD, assistant professor, Departments of Medicine and Microbiology & Immunology, and clinical research manager, Infectious Diseases & HIV Medicine, is the lead and site coordinator for the College of Medicine IMPACC team, handling logistics and operations in the laboratory. The project's principal investigators are Charles B. Cairns, MD, the Walter H. and Leonore Annenberg



Dean and senior vice president of medical affairs, and Elias El Haddad, PhD, professor of medicine, Infectious Diseases & HIV Medicine.

The team's findings will be published alongside the results of other IMPACC sites, with one overarching consensus, according to Haddad. Participating institutions also share patient samples for experimental use. "In this day and age, it's difficult to have one lab do multiple things," Haddad says. "Collaboration is the name of the game." He notes it is common — and crucial — for labs to share costs, effort and expertise when their respective research groups are working to answer the same question.

In the College of Medicine's case, the IMPACC study has collaboration at many levels. Several Tower Health physicians are helping recruit patients for the study. Research coordinators, nurse practitioners, and technicians from Tower Health are also pitching in to help make the project a success, according to Haddad.

Student researchers have also been key collaborators in the research. Brett Croen, Brandon Rogowski and Nick Semenza, all in the MD program Class of 2023, began assisting this summer with the processing of specimens and with data collection and analysis. PhD candidate Jennifer Connors, a researcher in Haddad's lab, is also working on the IMPACC study.

"This is basically the largest study in the United States right now that will help us decipher the immunology or immunological response to the virus," says Bernui. "Hopefully with this information, we can develop better therapeutics and learn a little bit more about this virus to defeat it sooner rather than later."

Leadership Summit Tackles Gender Equity in Medicine and Science

The Women in Medicine and Science Committee held its inaugural Women's Leadership Summit, a discussion of gender equity in medicine and science, on December 11, 2020. The event tackled gender equity in STEM through the lens of the impact of the pandemic on women in leadership in science, and clinical and academic medicine.

The summit allowed participants from across the College of Medicine community — and women at varying stages in their careers — to connect virtually. There were pre-program networking opportunities as well as mid-afternoon breakout sessions, organized by career level. Event attendees heard from speakers about such topics as facing leadership challenges, the qualities of effective leaders, and lessons learned from the presenters' personal experiences. Representatives of the Office of Diversity, Equity and Inclusion also spoke on diversity in medicine and science, and the ways that women are impacted by COVID-19 and structural racism.

Also included in the program was the presentation of the WMC/MCP Phyllis Marciano, MD, WMC '60, Woman in Medicine Award, given annually to a female physician, scientist or staff member to recognize her leadership, teaching of students, care of patients and status as a role model for women in medicine. This year's winner was Nathalie S. May, MD, an associate professor in the Division of Internal Medicine.



Karen Berkowitz, MD, chair of the Women in Medicine and Science Committee



Leon McCrea II, MD, MPH, senior associate dean, Diversity, Equity and Inclusion

Faculty Lauded at Virtual Awards Ceremony

The College of Medicine's annual Faculty Awards were presented during a virtual ceremony on December 18, 2020. The recipients and nominees were honored for their commitment to excellence in teaching, clinical care, research and mentorship, and for their leadership.



The award recipients were:

Daniel V. Schidlow, MD, Transformational Leadership Award

Itzhak Fischer, PhD, Neurobiology & Anatomy

Julian Marsh Faculty Scholar Award

Sandhya Kortagere, PhD, Microbiology & Immunology

Veronica Tom, PhD, Neurobiology & Anatomy

June Klinghoffer Clinical Educator Award

Donna Sudak, MD, Psychiatry

Oksana Korzeniowski Patient Care Award

B. Brent Simmons, MD, Family, Community & Preventive Medicine

Ogechukwu Menkiti, MD, Pediatrics

William Likoff Clinical Excellence Award

Donald Goldsmith, MD, Pediatrics

Vincent Zarro Community Outreach Award

Steven Rosenzweig, MD, Emergency Medicine

Angelo Pinto Basic Science Educator Award

Todd Strohlich, VMD, PhD, Biochemistry & Molecular Biology

Elias Abrutyn Mentoring Award

Olimpia Meucci, MD, PhD, Pharmacology & Physiology

Early Career Clinical Scientist Award

Janet Chen, MD, Pediatrics

Emerging Clinical Leader and Innovation Award

Zsafia Szep, MD, Medicine

New Investigator Award

Peter Gaskill, PhD, Pharmacology & Physiology

The call for nominations for the 2021 Faculty Awards is open. The deadline is March 25. For more information, visit drexel.edu/medicine/faculty-and-staff/office-of-faculty/faculty-awards.

New Leadership in Office of Faculty

The College of Medicine's Office of Faculty has undergone leadership changes that will enhance its capacity to serve our growing faculty community.



Nancy Spector, MD, has been named vice dean for faculty. Her contributions to graduate medical education and academic medicine include leadership skills development, professional development, gender equity, mentoring and

sponsorship, and curriculum development and implementation. Spector's established network of thought leaders in faculty professional development provides the Office of Faculty the unique opportunity to tap into expertise on a national scale moving forward.



Michele Kutzler, PhD, has been named associate dean for faculty. She will work with the vice dean to implement resources in professional career development and leadership skills for faculty in medical and scientific disciplines. Kutzler will

facilitate oversight of the tenure process, the faculty appointments and promotions process, and any faculty search committees. She supports the standing committees of the faculty and works with Human Resources in developing faculty policies.



Donna McNelis, PhD, has been appointed associate dean for professionalism and continuing education. She will support the delivery of professional interdisciplinary continuing education, and staff development and consultation,

to providers and practitioners across the nation. McNelis will ensure that our college's continuing education offerings continue to provide the opportunity to meet world-class faculty and an engaged community of colleagues.



Mary Anne Delaney, MD, associate director, Executive Leadership in Academic Medicine, and professor, Department of Psychiatry, has played a vital role in the Office of Faculty, especially in the development of faculty

policies during an unprecedented reorganization at the college. Her knowledge, leadership and guidance have been greatly appreciated, and her ongoing mentorship and generosity will continue to be an asset to ELAM.

In their new roles, these individuals will expertly oversee the recruitment, development and retention of our outstanding faculty, and ensure faculty vitality, all of which are critical to the success of our institution.

New Technology Targets DNA Damage Repair in Cancer Patients

When a cell cannot repair its DNA effectively, it can lead to the onset or growth of cancer in the body. A team of College of Medicine researchers is advancing a way to destroy cancer cells exploiting “synthetic lethality,” which is caused by deficiency in the DNA damage response (DDR) pathway. Synthetic lethality occurs when deficiencies in each of any two genes can be tolerated by the cell but the combination of these two deficiencies is lethal.

By targeting a protein known as RAD52 — which is essential for repair of DNA damage in some types of cancer cells, but not in normal tissues — the researchers have laid the groundwork for a method of inhibiting RAD52, thereby blocking cancer cells’ ability to repair DNA and proliferate, while sparing normal tissues. The authors say the work is still in early stages, but has potential for personalized, targeted treatments for some cancer types, including breast and ovarian cancers caused by BRCA1 and BRCA2 gene mutations.

The RAD52 program comes from the lab of Alexander Mazin, PhD, a professor in the Department of Biochemistry & Molecular Biology. The lab studies homologous recombination (HR) in human cells. The HR process most commonly occurs in cells as they repair harmful DNA double-strand



breaks, but when it fails, it can lead to cancer, premature aging or chromosomal abnormalities. Mazin and colleagues recently signed a license agreement with Rain Therapeutics Inc. to further develop RAD52 inhibitors for cancer patients who carry mutations in BRCA1 and BRCA2 genes, and in several other genes of the DDR pathway.

“Targeting RAD52 with inhibitors to destroy these cancer cells that have BRCA1 and BRCA2 and other HR gene mutations is a major step forward in development of personalized therapies for these cancers,” says Mazin. “As this work advances, it may lead to more effective therapies and better survival for millions of cancer patients.”

Drexel’s RAD52 inhibitors have shown potential anti-cancer effect in human cells in BRCA1 deficient models. There are currently no clinical programs that target RAD52, but under the license agreement, Rain Therapeutics Inc. will support continued research at Drexel while performing research in preparation for clinical study. Drexel will also receive compensation from Rain based on the development and commercialization of this technology.

This work was bolstered by \$353,520 in grants from the Coulter-Drexel Translational Research Partnership given to Mazin’s lab since 2016 to develop the technology for licensing. This program provides funding to promising translational research projects with the goal of moving innovative technologies to clinical application, and facilitates commercialization by providing mentorship, project management, and connections to external partners and sources of capital.

Headway and New Hires in West Reading

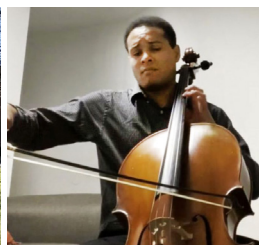
The College of Medicine at Tower Health received accreditation from the Middle States Commission on Higher Education in November 2020, and construction remains on schedule to welcome the first class of 40 first-year MD students this summer. The College of Medicine is also pleased to welcome new key staff members to the four-year regional medical campus, where they will serve as part of an interdisciplinary team that ensures excellence in clinical education for all students.

Orcel Kounga, MEd, will serve as director of student affairs and admissions. He previously worked as assistant director of Drexel’s Office of Student Conduct in the Division of Student Life, and resident director of Housing & Residential Living. Corinne Amato, MBA, is joining the team as director of campus administration and finance. She previously served as assistant director of budgets at the Donald and Barbara Zucker School of Medicine at Hofstra University and as a financial analyst for Fox Chase Cancer Center. John Repasch has been hired as director of simulation and clinical skills. A long-time employee of the Educational Commission for Foreign Medical Graduates, he most recently managed the CSEC Center Philadelphia, which administered the USMLE Step 2CS exam.

The incoming MD students chosen to study in West Reading will learn of their placement at the end of March. Orientation for all first-year medical students begins in August 2021.

Corinne Amato, MBA, Orcel Kounga, MEd, John Repasch





28th Annual Pediatric AIDS Benefit Concert

Undeterred by the pandemic, MD program students hosted the 28th annual Pediatric AIDS Benefit Concert virtually on Saturday, January 21. The event showcases the talents of College of Medicine students and faculty, and raises funds for the Dorothy Mann Center for Pediatric and Adolescent HIV at St. Christopher's Hospital for Children.

The event was co-chaired by second-year MD students Kelly Gillock and Mackenzie McDougal, who acknowledge that the shift to a virtual format was not always simple. "I think our largest challenges were trying to figure out how to incorporate our entertainment into virtual experiences. The logistics of getting videos recorded at home were challenging for everyone," Gillock says. She also notes that finding an online platform for the silent auction took some effort, but ultimately the new format simplified the bidding, payment and notification processes.

One thing that wasn't hard: recruiting willing

performers to record their acts for the event. "Actually finding the talent was the same as we've always done," notes McDougal, although acquiring recordings and making sure they played well was not always straightforward.

When things got stressful, Gillock and McDougal found inspiration by keeping the end goal in sight. "Knowing that we were doing something that was ultimately to benefit the kids kept us going in what sometimes seemed like impossible circumstances," says Gillock.

Ultimately, the organizers and participants agreed that the event was a great success. "Even though everything looked a bit different, we were able to do a lot of new and great things," McDougal says.

The Pediatric AIDS Benefit Concert has raised over \$600,000 to date. Donations are accepted year-round. Visit ducompabc.wixsite.com/pabc to learn more.

ELAM Graduates 25th Class of Fellows

The Executive Leadership in Academic Medicine (ELAM) program was slated to graduate its 25th class of fellows as part of a celebration of the program's 25th anniversary in the spring of 2020. Due to the COVID-19 pandemic, the anniversary event could not take place. Beyond that, the program's leadership realized they needed to be flexible with the fellows as they finished their program while coping with the pandemic, sometimes as frontline workers.

The yearlong program generally features three in-person sessions, with guided independent work throughout the year at their home institutions. The program's third session was shifted to a virtual format, and the fellows were given an extra five months to complete the curriculum in a mixed synchronous/asynchronous format.

In September, the fellows presented their capstone Institutional Action Projects via an online poster symposium, allowing them to share their work with their deans and other institutional leaders. ELAM's executive director, Nancy D. Spector, MD, says of the fellows' work, "The quality and impact of their IAPs is a testament to the capability of the members of this class to enact powerful systemic change at their home institutions and beyond, even in a time of crisis."

The graduation speaker, Catherine Morrison, JD, a negotiation and conflict management expert and longtime



ELAM faculty member, encouraged the fellows to create regular opportunities to renew their spirit, especially in challenging times, and to cultivate and embrace their own strengths.

ELAM's mission is to increase the number and impact of women in senior academic leadership positions. From there, these new appointments will help change the culture of academic health organizations in becoming more accepting of different perspectives and more responsive to societal needs and expectations. The 59 graduates from the Class of 2020 join a diverse alumnae community of more than 1,100 highly accomplished leaders who represent 275 medical, dental, public health and pharmacy schools around the world.

Discovery Day: College of Medicine's Research Showcase

The College of Medicine hosted Discovery Day, the annual day of research, on October 8, 2020, using the virtual platform iPosterSessions. The day included 250 poster presentations and eight platform talks, judged by 120 faculty, staff and alumni volunteers.

The broad range of research topics included neuroscience, oncology, mental health, immunology and more. In addition to the presenters and judges, an estimated 400 people logged on to view the posters and attend the platform presentations.

The day began with welcome messages from Charles B. Cairns, MD, the Walter H. and Leonore Annenberg Dean and Senior Vice President of Medical Affairs, and Elisabeth Van Bockstaele, PhD, founding dean of the Graduate School of Biomedical Sciences and Professional Studies, senior vice president for graduate and online education, and dean of Drexel's Graduate College. In his welcome, Cairns noted that Discovery Day gives presenters a chance "to take well-deserved credit for your skill and perseverance." Van Bockstaele said, "This event clearly demonstrates the robust research enterprise that exists here at Drexel."

A full list of Discovery Day winners and more details about the event are available at drexel.edu/medicine/discoveryday.



Sarah Bennison,
Neuroscience student



Jill Lawrence, Molecular & Cell Biology & Genetics student



Katherine Locke, MD student



Prajakta Mehetre, Biochemistry of Health & Disease student

Vision 2020 Year in Review: By the Numbers

1,400
registrants for the
Women's Leadership Forums

1,300
live viewers of the
Toast to Tenacity event

500
miles driven during the
SHE Leads Road Rally

330
teams registered for
Vision2020Votes,
and they recruited

Over
3,100
visits to Seat at the Table
exhibition information

Nearly
1,000
visits to pages geared
toward educators

2,400
participants

**New coalition members
onboarded in 2020:**

9
Delegates

7
Allied
Organizations

20
Proud
Partners

*The winning
organization,
Association of Junior
Leagues International,
recruited more than*

**Overall coalition numbers
as of February 2021:**

156
Delegates

132
Allied
Organizations

75
Proud
Partners

1,300
participants

Join Our Community of Scholars

The College's Office of Research and Office of Faculty are hosting a recurring professional development series, Community of Scholars, with the goal of fostering collaboration in research and innovation among Drexel's affiliate sites. Past events have included research highlights in the fields of pediatrics, microbiology, infectious diseases and neuroscience. Speakers from across

Community of Scholars

campuses covered topics ranging from fundamental discovery to clinical populations and research.

The programs also feature professional development presentations. Previous topics included advice on creating an outstanding NIH biosketch and strategies for advancing technologies from bench to bedside. If you would like to view recordings of the professional development presentations, contact Danielle Zimmerman, dnz29@drexel.edu, for access.

Drexel Researchers Honored With W. W. Smith Grants

Each year, the W. W. Smith Charitable Trust awards grants in three research areas: heart disease, cancer and AIDS. In December 2020, the College of Medicine learned that, for the first time, our faculty members received awards in all three areas.



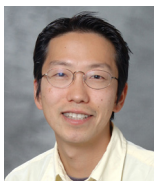
Peter Gaskill, PhD, assistant professor, Department of Pharmacology & Physiology, received the HIV Research Award for his project "Dopamine Induced by Substance Abuse Exacerbates HIV-Associated Neuroinflammation Through Epigenetic Regulation."

Gaskill's award was \$125,000.



Joshua Jackson, PhD, assistant professor, Department of Pharmacology & Physiology, received a \$125,000 Heart Disease Research Award for his project "Altered Calcium Clearance Post-Stroke Exacerbates Inflammation and

Inhibits Neurovascular Coupling."



Eishi Noguchi, PhD, associate professor, Department of Biochemistry & Molecular Biology, received the Cancer Research Award, in the amount of \$110,000, for his project "Timeless-Mediated Augmentation of DNA Repair in Esophageal Carcino-

genesis." This is the third time he has received a Cancer Research Award from the trust.

The organization's selection committee awards funding to researchers whose projects are deemed unique and meritorious, with the potential to attract additional funding from the National Institutes of Health or other large funding organizations following the support received from the W. W. Smith Charitable Trust.

Calendar

Ongoing

Now–September

Seat at the Table Exhibition

View the multimedia segment at women100.org/seatatthetable
In-person exhibition temporarily closed until the Kimmel Center reopens
Contact: vision2020@drexel.edu

March

18 **An Evening With Jill Ellis: A Conversation on Leadership**
Webinar with Q&A
Contact: Barbara Overholser, MA, bro29@drexel.edu

18–19 **Spring Breakthru**
Virtual event
Information: women100.org/events/spring-breakthru
Contact: vision2020@drexel.edu

19 **Match Day**
Contact: Caitlin Curcio, cak332@drexel.edu

April

1 **Explore & Serve Day**
Showcasing research and community service projects from pre-medical and pre-health students
Contact: Anita Gaurnier-Hausser, PhD, alg349@drexel.edu

13 **AOA and Gold Humanism Virtual Induction Ceremony**
Contact: Karen Shulik, klu23@drexel.edu

19 **Woman One Award Ceremony**
Live webcast honoring Jeri Lynne Johnson, founder, artistic director and conductor of the Black Pearl Chamber Orchestra
Contact: Janine Barber, jkb48@drexel.edu

May

21–23 **Alumni Weekend**
Join us for milestone reunion celebrations, faculty-led talks and much more. Additional information will be available soon.
Contact: medical.alumni@drexel.edu

Save the Date

College of Medicine Commencement

More details available soon
Contact: Caitlin Curcio, cak332@drexel.edu

White Coat Ceremony: August 6, 2021

Alumni: For information about alumni events, please call toll-free 888.DUGRADS (888.384.7237), email medical.alumni@drexel.edu or visit drexel.edu/medicine/alumni/events.

Sweet Future: Unraveling Glycosylation in Cancer Research

Decades of research have revealed much about the cancer genome, but scientists are only now beginning to understand the complexity of protein modifications in cancer cells and their impacts on cancer growth, resistance to treatment and metastasis.

“We know that cancer is a genetic disease. We believe we are actually coming to the end of learning every genetic change in cancer because we’ve been able to sequence patient tumors, and now we can even sequence single cells within a tumor,” says Mauricio Reginato, PhD, a professor in the Department of Biochemistry & Molecular Biology. “However, we know far less about how proteins are modified and the role these protein modifications play in cancer.”



Mauricio Reginato, PhD, and PhD candidate Giang Le Minh examine proteins from breast cancer cells that may be glycosylated.

Since 2007, Reginato’s lab has studied altered protein glycosylation and its connection to cancer. Glycosylation is the process by which proteins are modified by carbohydrates or sugars. When intracellular proteins are modified, they move to the cell nucleus, and some gain different interacting partners, changing their function in the cell. With a new NIH grant based on thesis research done by Neha Akella, PhD Biochemistry of Health & Disease ’19, currently a postdoctoral fellow at the University of British Columbia, and Giang Le Minh, Biochemistry of Health & Disease PhD candidate, Reginato will be focusing specifically on how this process regulates the pathways of breast cancer initiation. Working with colleagues at the Medical University of South Carolina, his team will be helping to uncover molecular connections between protein glycosylation and breast cancer stem-like cells. With this grant Dr. Reginato becomes the tenth lab to join the National Cancer Institute’s Alliance of Glycobiologists for Cancer

Research, a consortium of tumor glycomics laboratories dedicated to identifying targets and biomarkers based on altered glycosylations found in cancer.

Altered glycosylation is not new as an area of disease research — in fact, it has long been associated with some rare genetic disorders. Until recently, however, researchers lacked the technology to detect, isolate and observe sugars on proteins with the proper stability required for analysis. With the development of newer mass spectrometry techniques, research teams like Reginato’s can now identify specific changes in glycosylation at the amino acid level to understand how these alterations contribute to diseases such as cancer.

“With this technology, we can uncover how the sugars alter the proteins involved in cancer progression, but also how they may serve as potential biomarkers,” Reginato says. “That means that in the future we might be able to take a blood sample and predict whether the patient has a cancer that is difficult to catch early on, such as pancreatic cancer.”

Reginato, who initially focused his research on altered signaling pathways in breast cancer initiation and progression, came to glycosylation when a colleague was studying the process in diabetes. In 2010, Reginato’s lab was the first to link this protein modification, called O-GlcNAcylation, to cancer and identify that the levels of O-GlcNAcylation and a key enzyme regulating it are elevated in breast cancer.

“Not only were these levels elevated, but we found that if we could dial down or turn off this enzyme, either genetically or pharmacologically, it would then actually block tumor growth as well as tumor spread, basically halting the tumor’s ability to metastasize to a different site,” he says.

Two years later, his lab showed that the same process is involved in prostate cancer growth and metastasis. A decade later this project has become a major research focus of his lab. Meanwhile, other fields have caught up to this emerging area of study as altered glycosylation has also been linked to neurodegenerative and infectious diseases.

In their latest paper, published in *Molecular Cancer Research*, Reginato’s colleagues hypothesized that the O-GlcNAc transferase (OGT) enzyme that regulates this type of glycosylation could be involved in regulating breast tumor initiation.

“We thought that the small set of cells within the tumor known to have stem cell-like properties and generate the whole tumor may be enriched with this glycosylation and contribute to tumor initiation,” he says.

By injecting cancer cells into mice at varying limiting dilutions, Reginato’s team could determine the breast cancer stem cell frequency needed to generate a tumor. The hypothesis proved correct: Cells engineered to produce more of the OGT enzyme were shown to induce

tumor formation at lower dilutions compared to control cells. This suggests the enzyme increases cancer stem cell phenotypes and tumor initiation. The idea is that inhibiting the enzyme could be the basis for a therapeutic strategy to target this critical population of cancer cells.

The current grant project, which was launched last March, is to investigate the glycosylation process at the molecular level and look at targets that confer the ability for tumor initiation. Because the research project began in the middle of the first COVID-19 lockdown, during which the Drexel campus was largely shut down, the initial work was delayed for some weeks until summer. The team has already identified a novel set of proteins that are glycosylated, and is currently testing their role in cancer stem cells in order to broaden understanding about how glycosylation alters the function of these proteins.

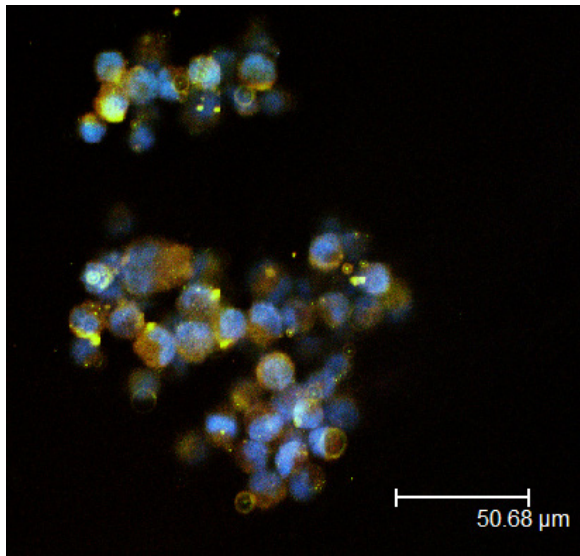
Given that expression of the OGT enzyme has been shown to be elevated across every cancer that's been studied, there may be far-reaching applications for this work. Reginato's lab has a soon-to-be-published paper that specifically investigates the relationship between glycosylation and brain cancers.

"It seems to be a common phenomenon among different cancers," he says. "And in part that may be due to a couple of things. One is the fact that there is always a metabolic element, by which I mean that cancer cells take a lot of glucose — up to 10 times more glucose than normal cells. Glucose actually feeds this pathway to generate the substrate used by glycosylation enzymes. We have also shown that MYC, an oncogene amplified in many cancers, turns on the OGT enzyme in cancer cells."

The laboratory will also be looking at small molecules that block activity of this enzyme, which may have important implications for cancer therapy, particularly for those cancers that prove to be drug resistant. "We know that cancers with high levels of these tumor-initiating cells or cancer stem cells are also resistant to chemotherapy," Reginato says. "In fact, it's been shown that when you give a patient chemotherapy, it kills a lot of the rapidly dividing cells, but it doesn't kill these cancer stem-like cells, since they tend to lie dormant. These are the very same cells that lead to tumor recurrence. The more we understand about mechanisms regulating these cancer stem-like cells, the closer we may get to uncovering new therapeutic targets."

The research, while preliminary so far, has shown that the drugs targeting this glycosylation do seem to block the tumor growth in preclinical animal models (mice) without much toxicity. However, there is much work to be done yet in understanding how they might work in humans.

"We don't know about side effects yet because we



The Reginato Lab has found that these specially cultured breast cancer cells have more breast cancer stem-like cells than normal, and they contain elevated levels of O-GlcNAcylation, which is required for cancer stem cell function (image courtesy of Giang Le Minh and Tejsi Dhameliya).

don't have ideal drug candidates targeting this enzyme to test. But we are also using what we have as a tool to uncover how this metabolically regulated glycosylation intersects with signaling kinases and transcription factors that are associated with cancer."

The hope is that this work will ultimately lead to a way of targeting breast cancer stem cells, either by targeting OGT or by downstream pathways that Reginato says the team is working on identifying. It's unlikely, though, that any single molecule would be a silver bullet. Instead, any kind of enzyme-suppressing drug might be used in tandem with another therapy.

"We're moving away from treating patients with a single drug. It's now a combination treatment because we know cancer cells become highly resistant, no matter what drugs are used. So my guess is that if these inhibitors ever get to the clinic, it's going to be with a combination treatment of other drugs. This would allow you to use less of any one kind of drug, which is especially helpful if there's going to be toxicity — as long as you see a kind of synergy with another chemotherapy or some other targeted therapy."

Another application Reginato is eager to look into is OGT's sensitivity to the nutritional status of cells. "That's something that is very intriguing to us — there is a very strong connection between diet, obesity and cancer, and we hope to further investigate the role of this glycosylation in obesity-related cancers in future research."

— By Elisa Ludwig



Seena Ajit, PhD, an associate professor in the Department of Pharmacology & Physiology, co-chaired a panel discussion, "Tools and Models to Test Hypotheses In Vitro." The panel was part of the NIH HEAL Workshop on Target Validation for Non-Addictive Therapeutics Development

for Pain, organized by the National Institute of Neurological Disorders and Stroke, held October 19-20, 2020.



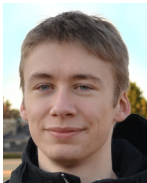
Peter Baas, PhD, professor, Department of Neurobiology & Anatomy, and a colleague from the University of Illinois received a five-year, \$3.2 million multi-investigator R01 grant from the National Institutes of Health for their work, "Mechanisms of SPG4 Hereditary Spastic Paraplegia."



Tatiana Bezdudnaya, PhD, an instructor in the Department of Neurobiology & Anatomy, received a grant for "Sleep Disordered Breathing After Cervical SCI" from the Paralyzed Veterans of America Research Foundation. She,

Dr. Bezdudnaya

Michael Lane, PhD, associate professor, and **Vitaliy Marchenko, PhD**, former research assistant professor, both also in the Department of Neurobiology & Anatomy, published "Pharmacological Disinhibition Enhances Paced Breathing Following Complete Spinal Cord Injury in Rats" in *Respiratory Physiology & Neurobiology*, November 2020.



Simon Danner, PhD, an assistant professor in the Department of Neurobiology & Anatomy, received a five-year grant from NIH's National Institute of Neurological Disorders and Stroke for "Spinal Circuits for Sensorimotor Integration and Interlimb Coordination During Locomotion."



Rodrigo España, PhD, associate professor, Department of Neurobiology & Anatomy, served as a panelist during the 2020 Black in Neuro conference. The November 1 panel discussed applying for graduate and post-baccalaureate programs, as well as navigating the

international graduate program application process during the COVID-19 pandemic.



Alessandro Fatatis, MD, PhD, professor, Department of Pharmacology & Physiology, received a Pennsylvania Breast Cancer Coalition Research grant for the second time. The funds will support his research on metastasis-initiating cells. Fatatis also received a new award from

Dr. Fatatis

the Philadelphia Prostate Cancer Biome Project based at Thomas Jefferson University's Sidney Kimmel Cancer

Center. The funding started on October 30, 2020, and will support his ongoing work on the role of AR-negative cancer cells and IL-1 in skeletal metastasis.



Dr. Reginato

Fatatis and **Mauricio Reginato, PhD**, professor, Department of Biochemistry & Molecular Biology, were appointed program leaders for the Translational and Cellular Oncology Program at the Sidney Kimmel Cancer Center, of which Drexel is a consortium partner. The program aims

to identify and understand the signaling and metabolic pathways that support malignancy at the cellular and intercellular level, and to uncover tumor cell crosstalk among heterogenous cancer cell populations.



Dr. Fischer



Dr. Lane

Itzhak Fischer, PhD, professor and chair, and **Michael Lane, PhD**, associate professor, both in the Department of Neurobiology & Anatomy, published "Transplanting Neural

Progenitor Cells to Restore Connectivity After Spinal Cord Injury," with a colleague from Texas A&M University, in *Nature Reviews Neuroscience*, June 2020.



Peter Gaskill, PhD, assistant professor, Department of Pharmacology & Physiology, is a co-investigator with Dionna Williams of Johns Hopkins University (PI) for a new R01 grant from the National Institute on Drug Abuse, which supports their project "Cannabidiol and Macrophage Chronic Inflammation in a Virally Suppressed Rhesus

Macaque Model."



Edward Gracely, PhD, associate professor of family, community and preventive medicine, published "Shoulder Impairment and Pain of Individuals With Newly Acquired Spinal Cord Injury Compared to Uninjured Peers," with Drexel College of Nursing and Health

Professions colleagues Margaret Finley, PhD, and Elizabeth Euiler, and colleagues at WellSpan Health, Magee Rehabilitation/Jefferson Health, University of Maryland Rehabilitation and Orthopaedic Institute, and South College. The paper appeared in the August 2020 issue of *Spinal Cord Series and Cases*. Gracely was also a

co-author of "Hepatitis C Antibody Screening and Determinants of Initial and Duplicate Screening in the Baby Boomer Patients of Six Urban Primary Care Clinics" with colleagues from Thomas Jefferson University, Perelman School of Medicine and University of California San Francisco, published in *PLoS One* online July 9, 2020.



Pooja Jain, PhD, professor, Department of Microbiology & Immunology, participated in a fireside chat for SEEMA, an organization focused on eradicating mental health stigma within the Muslim community, on October 2, 2020. Jain

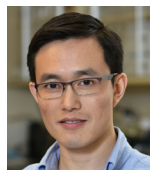
discussed the brain-body connection. She also served as editor of *Advanced Concepts in Human Immunology: Prospects for Disease Control* with coeditor Lishomwa Ndhlovu, MD, PhD.

Jain and third-year MD students **Adam Dykie** and **Tharaka Wijesinghe**, Microbiology & Immunology student **Kiran Madugula**, Molecular & Cell Biology & Genetics student **Sydney Wilson**, and **Christian Farinas, MS '12**, authored "Human T-cell Leukemia Virus Type 1 and *Strongyloides stercoralis*: Partners in Pathogenesis," with coauthors from Rutgers Robert Wood Johnson Medical School and Sidney Kimmel Medical College, for a special HTLV-1 issue of *Pathogens*, published October 2020.



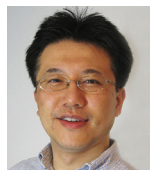
Dr. Khan

Jain; **Rashida Ginwala, PhD '18**; **Raina Bhavsar, MS '18**; **Patrick Moore, MS '17**; **Mariana Bernui, PhD**, assistant professor of medicine; **Frank Bearoff, PhD '17**, postdoctoral researcher; and **Zafar Khan, PhD**, professor of microbiology and immunology, with colleagues at the University of South Carolina, published "Apigenin Modulates Dendritic Cell Activities and Curbs Inflammation Via RelB Inhibition in the Context of Neuroinflammatory Diseases" in the June 2020 issue of the *Journal of Neuroimmune Pharmacology*.



Dr. Wang

Jun Liu, PhD, research associate, and **Dong Wang, PhD**, assistant professor, both in the Department of Neurobiology & Anatomy, published "Representation of Fear of Heights by Basolateral Amygdala Neurons" with a colleague from the Shanghai Key Laboratory of Brain Functional Genomics. The paper appeared in the *Journal of Neuroscience* on January 12, 2021.



Dr. Toyooka

Liu; **Sara Blazejewski** and **Sadie Bennison**, Neuroscience PhD students; and **Kazuhito Toyooka, PhD**, assistant professor of neurobiology and anatomy, authored "Glutathione S-transferase Pi (Gstp) Proteins Regulate Neuritegenesis in the Developing Cerebral Cortex," which has been accepted for publication in *Human Molecular Genetics*.

Wang and co-authors **Nancy R. Mack** and **Sha-Sha Yang**, Neuroscience PhD students; **Yu-Xiang Zhang**, former visiting student; **Billy Ramirez, MS Interdisciplinary Health Sciences '18**; and **Bo Xing, PhD**, former instructor, **Yan-Chun Li, MD, PhD**, former research assistant professor, and **Wen-Jun Gao, PhD**, professor, all in the Department of Neurobiology & Anatomy, published "A Subpopulation of Prefrontal Cortical Neurons Is Required for Social Memory" with colleagues from Wenzhou Medical University and University of Virginia School of Medicine, in *Biological Psychiatry* on September 5, 2020.

Jared Luchetta, a Pharmacology & Physiology PhD student, was appointed as a National Research Service Award predoctoral fellow on Drexel University's Interdisciplinary and Translational Research Training Grant in NeuroAIDS. **Emily Nickoloff-Bybel**, Pharmacology & Physiology PhD student, had her appointment in the same

fellowship renewed for a second year. The training grant is funded by the National Institute of Mental Health as part of a longstanding collaboration between Drexel and Temple University investigators.



dentistry and more, and who have a proven commitment to serving Hispanic patients.

Raidizon Mercedes, a second-year MD student, was named a 2020 Hispanic Health Professional Student Scholarship winner by the National Hispanic Health Foundation, which chooses 15 to 20 scholarship winners each year from a pool of applicants studying medicine, nursing,



Dr. O. Mortensen



Dr. A. Mortensen

Ole Mortensen, PhD, associate professor in the Department of Pharmacology & Physiology, received an R56 grant from the National Institute of Mental Health for "Allosteric Modulation of Dopamine Transport: Functional and Biochemical Studies." He also published "Transport Rate of EAAT2 Is Regulated by Amino Acid Located at the Interface Between the Scaffolding and Substrate Transport Domains." Additional authors include **Michael Duffield, MS Drug Discovery & Development '15**; **Avkash Patel, MD '20**; **Dora Schnur, PhD**, affiliate faculty member; and **Andréia Mortensen, PhD**, assistant professor, Department of Pharmacology & Physiology. The paper was published in *Neurochemistry International*, October 2020.

Micaela O'Reilly, Neuroscience PhD student; **Eugene Mironets, PhD Neuroscience '19**; **Tatiana M. Shapiro**, Interdisciplinary Health Sciences student; **Kallon Crowther**, Drexel summer undergraduate research fellow; **Eileen Collyer, PhD**, postdoctoral research fellow, Neurobiology & Anatomy; John Bethea, PhD, Drexel College of Arts and Sciences; and **Veronica J. Tom, PhD**, professor, Neurobiology & Anatomy, co-authored "Pharmacological Inhibition of Soluble Tumor Necrosis Factor-Alpha (sTNF) 2 Weeks After High Thoracic Spinal Cord Injury Does Not Affect Sympathetic Hyperreflexia" in the *Journal of Neurotrauma*. The article was published online on January 4, 2021.

Shapiro; Tom; **Di Wu, PhD**, research associate; **Ying Jin, PhD**, research assistant professor; and **Peter W. Baas, PhD**, professor, all in the Department of Neurobiology & Anatomy; and **Abhishek Hinduja**, third-year MD student, published "Chronic Neuronal Activation Increases Dynamic Microtubules to Enhance Functional Axon Regeneration After Dorsal Root Crush Injury" in *Nature Communications*, November 2020.



Spastic Paraplegia."

Liang Oscar Qiang, MD, PhD, research assistant professor, Department of Neurobiology & Anatomy, was awarded a five-year \$1.89 million grant from NIH's National Institute of Neurological Disorders and Stroke for "Elucidating the Etiology of SPAST-based Hereditary



Robert Sataloff, MD, DMA, professor and academic chair, Department of Otolaryngology – Head and Neck Surgery, was the guest speaker for the 78th Annual Herbert S. Birkett Memorial Lecture, hosted by the Department of Otolaryngology – Head and Neck Surgery

at McGill University in Canada, on November 19, 2020. He presented “Endoscopic Voice Surgery: Current Concepts.”



Priscila Sato, PhD, assistant professor, Department of Pharmacology & Physiology, was invited to participate in an early career panel discussion on transitioning from postdoctoral to faculty roles, titled “From Lab Rat to Fat Cat” for the American Heart Association’s Scientific Sessions

conference on November 13, 2020.



Robert J. Schwartzman, MD, emeritus professor of neurology, published “Optimizing the Treatment of CRPS With Ketamine” with colleagues from the International Foundation for RSD/CRPS, the University of the Sciences and the University of Florida. The paper appeared

in the July 2020 issue of the *Clinical Journal of Pain*.



Rohan Sehgal, second-year MD student, received a 2020 Carolyn L. Kuckein Student Research Fellowship from the Alpha Omega Alpha Honor Medical Society. Sehgal is participating in a National Institute on Aging study looking for patterns in changes to individuals’

biology as they age.



Dr. Shevtsova



Dr. Rybak

Natalia Shevtsova, PhD, research assistant professor, **Ilya Rybak, PhD**, professor, **Kimberly Dougherty, PhD**, associate professor, all in the Department of Neurobiology & Anatomy, and **Ngoc Ha,**

PhD Neuroscience '20, published “Neural Interactions in Developing Rhythmogenic Spinal Networks: Insights From Computational Modeling” in *Frontiers in Neural Circuits* on December 3, 2020.



Dr. Dougherty

Rybak, **Simon Danner, PhD**, assistant professor of neurobiology and anatomy, and colleagues from Georgia State University and Université de Sherbrooke, authored “On the Organization of the Locomotor CPG: Insights From Split-Belt Locomotion and Mathematical Modeling,” which was published in *Frontiers in Neuroscience* on October 16, 2020.



Dr. Spector



Ms. Overholser

Nancy Spector, MD, vice dean for faculty, professor of pediatrics, and executive director, ELAM program, and **Barbara Overholser, MA**, communications and relationship manager, ELAM

program, published “Building a New Framework for Equity: Pediatric Hospital Medicine Must Lead the Way” in the *Journal of Hospital Medicine*, January 2021. Spector and a colleague coauthored “Leading by Design: Lessons for the Future From 25 Years of the Executive Leadership in Academic Medicine (ELAM) Program for Women,” which appeared in the October 2020 issue of *Academic Medicine*. Spector was also selected to receive the AAMC 2020 Group on Women in Medicine and Science Leadership Award for an Individual.



Daniel Taylor, DO, associate professor, Department of Pediatrics, wrote an Eyes on the Street article for *WHYY*, “Eviction Is Bad for Our Health. Pa. Must Act to Protect Families.” The piece ran on September 3, 2020. Taylor has authored expert opinion pieces for the *Philadelphia Inquirer*,

including “How COVID-19 Is Changing the Way This Philly Pediatrician Practices Medicine” on September 17, 2020; “Like Sean Conley, I’m a Proud Doctor of Osteopathic Medicine From Philly. Here’s Why.” On October 7, 2020; and “Why I Tell My Patients I Will Get the COVID-19 Vaccine,” on December 8, 2020. He also published a Medical Mystery, “A Nose Bleed Signaled an Uncommon Disorder,” on December 4, 2020.



Veronica Tom, PhD, professor of neurobiology and anatomy, received the Provost’s Award for Outstanding Mid-Career Scholarly Achievement. The award recognized her leadership, dedication and contributions in neuronal cytoskeleton and neurodegenerative disease research.



Nielufar Varjavand, MD, professor of medicine and director, Physician Refresher/Reentry Course, moderated a breakout room on “Building Linguistic and Cultural Competence in Healthcare Settings: An Interdisciplinary Approach by Spanish, Social Work, and Nursing Faculty” at the virtual Second Medical Spanish Summit, hosted by the National Association of Medical Spanish on October 10, 2020. She also facilitated a Q&A for a webinar, “Quality and Professionalism in the Digital Era: Impact on Physician Assessment and Remediation,” on October 15, 2020. The webinar was presented by the Coalition for Physician Enhancement, of which Varjavand is a board member.



Mark Woodland, MS, MD, interim academic chair of the Department of Obstetrics & Gynecology, was named chair of the Pennsylvania State Board of Medicine on October 27, 2020.

In Memoriam



Christof Daetwyler, MD, a former associate professor in the Department of Family, Community & Preventive Medicine, and a driving force in digital and online medical education at Drexel, died on December 11, 2020, at the age of 56.

Daetwyler attended art school in Zurich, Switzerland, before enrolling in the University of Zurich for his MD. During his medical training, he was inspired to improve clinical education through the use of digital media. He worked at the Dartmouth Media Lab before coming to Drexel, where he was instrumental in the creation of DocCom, an online resource for teaching medical interviewing. This was the first of many education modules Daetwyler created. He also taught communication and reasoning to medical students.

Daetwyler left the College of Medicine in 2019 to move to Pirenopolis, Brazil, where he continued his work in digital media education as co-founder of EnhancedLearn.net. He was successful in marketing programs developed at Drexel to a number of universities. Among these programs was WebEncounter, which offers well-paying part-time work as standardized patients to stay-at-home parents and disabled veterans. The Gift of Life Institute also uses these programs to train organ donation counselors.

Daetwyler is survived by his wife, Maga; son, Ernesto; brother, Mark; and father, Jurg. He was honored by the Drexel community at a Zoom memorial service on December 17.



Bernard Eskin, MD, a professor of obstetrics and gynecology, passed away on December 29, at the age of 92. He attended Albany Medical College, and then completed an internship at Einstein Medical Center Northern Division. He

was the first man to obtain a residency position in obstetrics and gynecology at Woman's Medical College of Pennsylvania, remaining with the institution and its successors for 63 years.

He was dedicated to the compassionate care of his patients, and he was an active breast health and breast cancer researcher. His more recent research addressed the care of women as they age; he wrote the first textbook, widely used to this day, on menopause.

In addition to his role at Drexel, Eskin cared for patients in private practice for decades, making home visits, delivering babies at Philadelphia hospitals and working with Planned Parenthood. He was also an avid musician and music lover; he played in a doctors' orchestra in Philadelphia for 30 years, as well as the Main Line Symphony Orchestra and the Lower Merion Symphony.

Eskin is survived by his wife, Lynn; three children, Gregg, JoAnne and Catherine; and seven grandchildren.

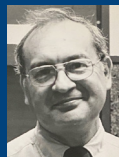


Maria Delivoria-Papadopoulos, MD, a professor of pediatrics and physiology, and pioneer in the field of neonatal-perinatal medicine, died on September 11, 2020. She was 90. Delivoria-Papadopoulos served as director the

neonatal intensive care unit at St. Christopher's Hospital for Children for many years. She earned her MD from Athens University, coming to the U.S. in 1957 for postdoctoral training in physiology at the University of Pennsylvania, where she later created and then ran the neonatal unit. Delivoria-Papadopoulos's innovations include repurposing the iron lung, used in the 1950s to treat polio patients, to support respiration for premature infants. She was the first doctor to put an infant on a respirator, and the first to demonstrate effective use of mechanical ventilation in infants with hyaline membrane disease.

She was an advisor to the National Institutes of Health, and the author of 400 scientific papers. Delivoria-Papadopoulos was also an enthusiastic and devoted mentor to numerous trainees during her career. In an obituary published in *Neonatology*, colleague Endla Anday, MD, notes, "Maria's lasting impact will not only be due to her own accomplishments, but also through the careers she has fostered and the individuals she nurtured to perpetuate her mission of providing humanistic and friendly clinical care."

Delivoria-Papadopoulos is survived by sons James and Constantine C. Patterson, and a grandson.



Earle Frederick Wheelock, MD, an emeritus professor of pathology and former Drexel trustee, died on August 4, 2020, at the age of 93. Wheelock attended the College of Physicians and Surgeons at Columbia University after serving in the

U.S. Army. He then completed a rotating internship at Billings Hospital at the University of Chicago, followed by a residency at the University of Rochester. He obtained a PhD from the Rockefeller Institute for Medical Research in New York City.

Wheelock joined the Department of Preventive Medicine at Case Western University, where his research focused on leukemia and lymphoma. This work continued at Thomas Jefferson University. He then came to Hahnemann University and served as a professor of pathology, becoming emeritus professor in 1992. He began serving as a trustee for Drexel University in 1975, and was named an emeritus trustee in 1992.

In addition to his research and academic endeavors, Wheelock volunteered at Inglis House in Philadelphia, an organization dedicated to helping people with disabilities achieve their goals and live life to the fullest. He was also a hospice volunteer. Wheelock is survived by his wife, Jean, and three children, Lisa, Cynthia and Scott, as well as four grandchildren.



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The Legacy Center Archives & Special Collections recently moved to a new virtual home. The center's wealth of historical content about the College of Medicine and its predecessor institutions is now available at drexel.edu/legacy-center, with more digital resources and improved searchability.

