



Shared Resource Brings State-of-the-Art Molecular Interaction Analysis to Drexel

When Elias Haddad, PhD, and Michele Kutzler, PhD, professors of medicine at the College of Medicine, wanted to test their theory that administering an adjuvant with the COVID-19 vaccine would boost the immunization's durability, they only needed to climb a few floors from their labs to access advanced equipment that would take their study's precision from good to great. Drexel is home to the Surface Plasmon Resonance (SPR) Biosensor Shared Resource, which offers research services to investigators, using

gold-standard detection equipment to study interactions between molecules in great detail.

For Haddad and Kutzler, a close collaboration with the SPR facility was key to their project. "It was very critical for us to have this technology for the success of [our grant]," Haddad says. "This is a unique technology because it tells you the quality of the [immune] response, not only the magnitude. The technology requires unique expertise and equipment, which is available for us."

The Scientific Story

The collaboration is an example of how researchers can use state-of-the-art technology readily available on campus to bring precision and clarity to their work. "There may be SPR instruments across the city, but the positive thing about having it at Drexel is we spend time with the scientists in [the SPR facility]," Kutzler says. "They're involved in our research meetings. They go beyond the technical aspect. They help us to think about how to use that instrument and the data generated in our publications and to put together the scientific story."

SPR technology was developed in the 1990s. Early on, it was used to study interaction mechanisms between proteins and other large molecules, says Irwin Chaiken, PhD, a professor of biochemistry and molecular biology at the College of Medicine and faculty director of SPR technology services. Along with other work over the last two decades, Chaiken has used SPR technology to study interleukin-5, which is key to the development of asthma. That work paved the way for an asthma drug that is now on the market.

By the time the SPR shared resource was established at Drexel in 2020 — through a joint National Institutes of Health grant with the Sidney Kimmel Cancer Center at Jefferson Health — the technology had advanced enough to perform small molecule screening, enabling the detection of interactions between different types of small and large biomolecules with great sensitivity. The shared resource is especially useful for

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Pediatric AIDS Benefit Concert celebrates 30 years of music, service



Class of 2023 sees bright futures in residency matches



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Student-run Diversity Week brings Drexel community together

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pulse

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Celebrations of Success

As always, there is much to be proud of and thankful for as we head into summer. We are preparing to welcome the first class of MD students who will begin their medical education in our beautiful new Drexel Health Sciences Building. Transitions can be challenging, and I am grateful to everyone who helped ensure that the academic and administrative teams who have completed their phased move into the building have been able to do so efficiently and with minimal



Charles B. Cairns, MD

disruption. I would also like to extend my gratitude to Donna Russo, PhD, interim vice dean for educational affairs, senior associate dean for curriculum, and William Maul Measey Chair in Medical Education, who has shown steadfast leadership from the building's inception.

We just completed another excellent fourth year-student match! We matched all of our students who wanted residency positions into programs starting this summer. As I write this, we are in the midst of final preparations for the 2023 Commencement ceremony at the Kimmel

Center on May 12. Our MD, PhD, master's and certificate graduates of the class of 2023 have all made us proud during their time here, and I know they will continue to do so as they enter the next phase of their training or begin their careers. The next issue of *Pulse* will include complete coverage of the event.

It is also exciting to send the inaugural class of MD students at the College of Medicine at Tower Health into their third-year clinical training years this spring. Their arrival in West Reading seems like it was yesterday, but what they have accomplished during their time there is remarkable. Their outreach in the community is especially notable: They have established eye health and respiratory clinics that serve people experiencing homelessness, initiated relationships with organizations that support the area's LGBTQ+ populations and Hispanic/Latinx communities, and implemented a Narcan distribution program in the community.

Our Office of Faculty is hard at work rolling out the Faculty Affairs Dashboard, which will be an incredible asset to our faculty. Knowing how hard our educators work to support our teaching, research, clinical care and community service missions, I am grateful that we have this opportunity to make some parts of their roles more streamlined and straightforward. Nancy Spector, MD, who leads that office as senior associate dean for faculty, received an incredible honor from the American Medical Women's Association: She is the recipient of this year's Elizabeth Blackwell Medal, which is given annually to a woman who has made outstanding contributions to the cause of women in medicine. Dr. Spector has done a remarkable job of overseeing the ELAM and ELH programs as executive director, as well as leading the Lynn Yeakel Institute for Women's Health and Leadership since Lynn Yeakel's passing last year.

Our culture of investigation and innovation is stronger than ever, with research expenditures across Drexel for Fiscal Year 2022 at an all-time high. It will also soon be time to start submitting abstracts for November's Discovery Day 2023. I look forward to learning more about our trainees' research efforts at that important annual event in the fall.

As always, I am proud to lead the College of Medicine through all our transitions, our achievements and our challenges, and I thank you for being part of what makes us excellent.

Charles B. Cairns, MD

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

Diversity Efforts at Allegheny: A Resident's Perspective

I was born in Ghana and grew up there, until I was 15. Then I moved to Ireland, and then to Texas. I got my undergrad degree in pre-medicine in Texas. I moved back to Ireland for medical school, and then to Pennsylvania for my residency at Allegheny General Hospital. I've been all over, but the first move to Ireland was the biggest culture shock.

Growing up I had to help a lot of sick family members battling different ailments, which led to the demise of some. I saw that the health care system in Ghana could be much better, and that motivated me to go into medicine.

One of the things that attracted me to Allegheny was the TRIUMPHS program. TRIUMPHS stands for Today's Residents Inspiring those Underrepresented in Medicine: Pipeline for the Health Sciences.

High-school students from backgrounds that are underrepresented in medicine (URM) are paired with resident physicians who are also from underrepresented groups. The goal is to provide a relatable role model and mentor, as well as opportunities to shadow and experience health care alongside residents, nurses and other health professionals. We liken the program to "having a doctor in the family" who can help navigate the numerous barriers and pitfalls when pursuing such a career.

We recruit students for the program with the help of Edwina Kinchington, PhD, a teacher leader at SciTech, a local high school. At the beginning of the school year, we visit with the students and pitch the program. Currently, we have 16 active mentor-mentee pairs. We try to match students when they are starting 10th grade with first-year residents who have some shared interests. The mentor-mentee pair continues for the duration of high school and residency, with mentor and mentee graduating at the same time.

The students also have the opportunity to shadow in the hospital and watch surgeries being performed. These activities may seem minor, but they make a big difference when you're considering applying to pre-medical programs. We also provide each student with a personalized jacket with their name and TRIUMPHS embroidered on it, and a pair of scrubs. You can almost see a switch in the students when they put these on and the prospect of a career in medicine becomes real. The program, conceived by our residency program director, Tas Kapetanos, MD, in 2020, has already seen two graduates accepted to pre-med and early assurance programs.

As a minority growing up without any doctors in my family, I experienced the struggle of not knowing how to navigate the system. To get into medical

school, the process really starts way back in high school. As was true for me, underrepresented students often don't have family members who are doctors, or other people to guide them. Having someone to look toward for guidance and inspiration makes a big difference. I am passionate about TRIUMPHS because I feel that it truly helps students, and if we want our field to represent the patients we serve, we have to start early. I hope that other residency programs will see our success and start similar efforts.

Recently, I spent a month in Guyana for a global health rotation. I was able to work in a medicine ward, cardiac ICU, tuberculosis ward, a malaria clinic and an HIV clinic. Working as a doctor in a resource-limited environment has opened my eyes and forced me to reconsider much about the way we practice in the U.S. It was great to be able to share our knowledge and also learn from the doctors there. I'm glad that our residency program, under the leadership of Tom Robertson, MD, offers this opportunity.

• *continued on page 5*



**Richard Amoateng, MD, Third-Year Internal
Medicine Resident, Allegheny General Hospital**

SPR Shared Resource

• *continued from the cover*

research including structure-based design of therapeutics, drug discovery, vaccine development and testing, and mechanisms of protein formation in pathogenesis and treatment.

"If you look at the sky with the Hubble telescope, you'll see galaxies in the far universe," Chaiken says. "Look at the most recent version of the telescope, and you'll see even more distantly resolved details of the universe. That's how it is with SPR versus other technologies. There are other technologies that can do antibody mapping, for instance, but they tend to be lower resolution in terms of the potency and characteristics of binding."

Battling a Pandemic

When the COVID-19 pandemic struck, College of Medicine investigators came to the SPR shared resource facility to test different approaches to combating the virus, says Gabriela Canziani, PhD, who is well-known as an SPR specialist in the field of molecular interactions and who manages the SPR shared resource in Chaiken's lab. These included projects related to screening compounds to control viral multiplication and developing therapeutics to inactivate the virus before infection. "We were one of the few allowed to work in the lab during the shutdown," Canziani says.

As vaccine experts working in HIV, Haddad and Kutzler say they were ideally positioned to pivot to COVID-19 vaccine research when the pandemic hit. Seven years ago, Haddad discovered that administering adenosine deaminase-1 (ADA-1), a known molecule in humans and mice that can cause immunodeficiency when it mutates, could help maintain a strong immune response with a trial HIV vaccine. Haddad and Kutzler were confident that the ADA-1 adjuvant would have the same durability-boosting effect when administered with the COVID-19 vaccine.

To test their hypothesis, the researchers injected mice with a DNA COVID-19 vaccine with and without the ADA-1 adjuvant. The SPR technology measured the amount of the antibody that was stimulated in both cases, and found that mice who received the ADA-1 adjuvant with the vaccine had increased amounts and affinities of antibodies made by the vaccine. SPR technology had allowed Haddad and Kutzler to determine not only that ADA-1 had an immune-boosting impact, but exactly what that impact was.

SPR technology also determines the kinetics of a molecular interaction, Chaiken says, meaning the different speeds with which biomolecules bind and break apart. In the COVID-19 study by Haddad and Kutzler, the kinetics refer to how quickly the monoclonal antibody binds, and subsequently dissociates, from the antigen, according to Canziani. "I remember plotting only the dissociation rates

for a quick comparison of the two types of vaccination," she says, referring to vaccination with and without ADA-1. "There was a significant increase of spike-specific antibody abundance in the studies that included ADA-1, when compared to those without ADA-1. In addition, the induced antibodies remained on target longer [in co-vaccination with ADA-1]."

Haddad and Kutzler say they will continue to use SPR technology in follow-up studies. They have since partnered with other researchers to generate and test an mRNA COVID-19 vaccine that incorporates the ADA-1 adjuvant. They are also working to test the ADA-1 adjuvant in non-human primates, both to study the safety of the adjuvant (though it has been used previously in humans to treat children with immune deficiencies) and to assess the immune response in an animal more closely related to humans than mice.

The long-term aim: to develop a new COVID-19 vaccine that incorporates ADA-1 to create a safe and long-lasting immune response in humans. "We are thinking about this goal in the long run," Haddad says. "The concept is there. The proof of concept is there. Now the question is can you reproduce this in higher animals and can your adjuvant be administered in humans? If not, what is the alternative?"

Vaccination Versus Infection: Gauging Immune Response

Haddad and Kutzler also collaborated with the SPR facility and scientists on another COVID-19 vaccine project, this one using human samples from early in the pandemic to compare the immune response of people who were only infected with the virus,

only vaccinated against the virus, or both infected and vaccinated. "We wanted to see if people get a booster, do they have a better response?" Haddad says. "Do they need to get a booster? If people get infected, do they really have to be vaccinated? These are the questions we wanted to answer."

The researchers used SPR technology to examine qualitative differences in the various immune responses. They found that the affinity of the antibody — its ability to bind strongly — was improved in people who were both vaccinated and infected. "That's an important finding because it tells you that even if you're infected, a vaccine will help to establish better immunity," Haddad says. "At the same time, if you are vaccinated and get infected, that also will bolster your immunity."

The SPR facility continues to be involved with other COVID-related work, such as screenings, and participates in other collaborations, including an ongoing project on hepatitis B. Drexel researchers and students working on drug discovery, vaccines and other aspects of biological mechanisms can access the SPR technology and scientists. "The main reason why the shared resource exists is to be able to support projects broadly," Chaiken says. "We know the technology can be helpful for people."

— By Christina Hernandez Sherwood



Gabriela Canziani (seated) goes over SPR results with students in the lab. The instrument, an S200 Biosensor, is in the background on the left.

Faculty Launch: Helping Mid-career Faculty Advance as Leaders

Very few medical schools offer a faculty leadership development program specifically designed to help mid-career faculty advance in their careers. Drexel University College of Medicine is one of those few. Now in its second year of operation, Drexel's Faculty Launch Program is an innovative training program that provides mid-career faculty with opportunities in leadership training, career planning and mentorship, while establishing a robust interdisciplinary faculty network. Each participant defines specific career goals and develops action plans for advancement.

The Faculty Launch Program focuses on developing these core competencies of leadership:

- Leadership skills
- Organizational strategy and alignment
- Building effective teams
- Self-assessment
- Finance and budget
- Change management
- Project planning and implementation
- Mentoring and faculty development
- Negotiation and conflict management
- Communication

A key feature of the Faculty Launch Program is the Faculty Leadership Impact Project (FLIP) that each participant designs, plans and implements. The FLIP expands the fellow's leadership skills and institutional visibility through a departmental/institutional initiative that aligns with the fellow's experience and expertise and meets a goal or need at the College of Medicine. The objective of the FLIP is to help participants integrate new leadership skills from the didactic curriculum to their projects and expand their experience as leaders to implement key stages of the proposed projects.

Participants work individually and collaborate with their department chair and other key stakeholders on the FLIP during the

year-long program.

During four sessions, participants also work in Dragon Learning Circles, which are groups of four or five peers from various missions and tracks, along with a senior faculty facilitator.

In addition, participants benefit from executive coaches who help them grow and develop their leadership skills with individual coaching sessions throughout the year.

Developed by Nancy D. Spector, MD, senior vice dean for faculty, and Michele A. Kutzler, PhD, associate dean for faculty, the Faculty Launch Program has 15 faculty members participating this year and plans to double that number next year.

Three current Faculty Launch fellows recently shared their positive experiences so far.

• *continued on next page*



Participants in the 2023 Faculty Launch Program: (back row) Vanessa Pirrone, PhD, Eduardo Espiridion, MD, Ogechukwu Menkiti, MD, Renee Kottenham, MD, Amy Althoff, MD, Todd Strohlic, PhD, VMD, Janet Fitzpatrick, MD, and Seema Baranwal, MD; (front row) Nandini Madan, MD, Zhabiz Kazeminezhad, MD, Jessica Barson, PhD, Margaret Gilfillan, MD, Enitan Adegite, MD, and Adrienne Willard, MD (not pictured: Maxwell Cooper, MD)

Destination Excellence

• *continued from page 3*

While in Guyana, I participated in a virtual "second-look" event for prospective URM residents, where they meet current URM residents and leaders at AHN. The event gives applicants a chance to ask questions about things that are important when considering where to spend the next three or more years of their lives, many of which don't come out in a typical residency interview. This year, I and one of my co-residents, Amina Hamza, DO, called in to the meeting from our global health rotation. We were proud to show current applicants that not only can

you survive as a resident at Allegheny, but you can also have an impact on communities near and far.

Being a resident at Allegheny and part of TRIUMPHS these past three years has been extremely impactful for me. Not only are diversity and inclusive recruitment a priority here, but there is also an investment in my success, and a genuine concern for the pipeline of applicants coming after me.

I am also proud to have opportunities to go into communities of color around Pittsburgh to provide care. I have participated in health fairs where we offer health information and basic screenings, and I was involved in COVID-19 education and vaccine drives. AHN is doing so many different activities to reach underserved communities in Pittsburgh.

Faculty Launch

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Jessica Barson, PhD

Associate Professor, Neurobiology and Anatomy; Course Director, Graduate Neuroscience I; Chair, PhD Admissions Committee; Co-director, Center for Systems and Behavioral Neuroscience, Drexel University College of Medicine

I'm up for tenure this year and, in the next three to five years, my goals are to be promoted to professor and to gain greater standing in the neuroscience community. To accomplish this, I aim to obtain more research funding, take on new student mentees, publish more and higher-impact papers, engage in more speaking opportunities at universities and conferences, establish myself as an editor for scientific journals and take on more leadership positions at Drexel. This will allow me to become a well-rounded senior researcher with influence on the direction of the University and the scientific field.

Participation in the Faculty Launch Program will allow me to proceed thoughtfully into these next responsibilities, and specifically, to step into new leadership roles at Drexel.

My interactions with my Dragon Learning Circle have helped me understand and appreciate the challenges faced by my mid-career peers in other departments. Having their perspective is very important because it's easy to get lost in your own departmental bubble. They have given me some really good advice about how to implement my FLIP that I would not have come up with on my own. The program has also added to my own mentoring circle, so I now have peers who can be resources for me and I for them.

As I move up the tenure track, I like being able to make important decisions about where the University goes, which ultimately impacts my day-to-day function. Faculty Launch is really helping me feel that I can be an effector of change by giving me leadership skills, experience and increased visibility in the University. I'm grateful to my sponsor, Itzhak Fischer, PhD, professor and chair, Department of Neurobiology & Anatomy, for his support.

FLIP: Establish a mentoring circle for woman-identifying and nonbinary graduate students in the Graduate School of Biomedical Sciences and Professional Studies (GSBSPS) at Drexel

My mission is to fill an unmet need in the GSBSPS by championing the interests of this cohort in science, technology, engineering and mathematics (STEM), striving to ensure that they can achieve their full potential. This mentoring circle will have a strong focus on graduate student- and Drexel-specific issues, including how to navigate advisor-advisee dynamics, scientific meetings and in-lab (student-to-student) dynamics. Using a mentoring circle format will allow for greater involvement of the GSBSPS community and could help with student retention and success in this cohort.



Ogechukwu Menkiti, MD

Associate Professor of Pediatrics, Drexel University College of Medicine; Medical Director, Neonatal Intensive Care Unit, St. Christopher's Hospital for Children

The Faculty Launch Program is a tremendous asset for mid-career faculty members. When I heard about the program, I had no doubt it would provide the necessary jolt to my career and much-needed assistance with networking, effectively sharing my achievements and optimizing visibility while opening the door for future collaborations.

Participating with like-minded peers in our Dragon Learning Circle has been a wonderful experience. Key components of the program centered on building an effective team, identifying and leveraging team members' strengths, undergoing a 360-degree evaluation, and finally, partaking in a simulated high-stakes board presentation. I found the self-evaluation as well as the anonymous evaluation and feedback from team members (peers and/or supervisors) to be potent tools for improvement and successful change. Identifying my strengths and areas of improvement are key ingredients for success, and the added benefits of review with an executive coach will guarantee success.

It was beneficial to review as a group the key aspects of an ideal professional development plan with realistic goals for the next three to five years. My primary focus remains my academic promotion to professor of pediatrics, which requires increased visibility and impact in research, clinical excellence and networking. This will necessitate making appropriate proposals and presentations to key stakeholders at Drexel and St. Chris. I have avoided these high-level interactions in the past, so it is great that this program prepared and exposed us to a simulated board presentation. This was an irreplaceable experience on which I will forever lean.

Dr. Kutzler and the Office of Faculty have been outstanding, and I highly recommend this program to all mid-level faculty. I remain grateful to Renee Turchi, MD, MPH, chair of pediatrics and pediatrician in chief at St. Chris, for her support in making this experience possible.

FLIP: Establish an Extracorporeal Membrane Oxygenation (ECMO) Lab Space at St. Chris

Initiation of pediatric ECMO results in significant clinical events assumed to be related to inevitable changes in the inflammatory milieu of these patients. Our team has developed a pilot study to describe the inflammatory changes that occur following initiation of ECMO in critically ill patients. Successful description of the inflammatory process will facilitate identification of therapies to mitigate adverse effects. Our pilot study has yielded encouraging results. However, our research activities are hampered by the lack of resources and infrastructure for translational research. A dedicated research space and startup funding will facilitate research activities and productivity. It will also provide opportunities for medical students, residents and fellows to get involved in research activities or infrastructure for translational research.



Renee Kottenhahn, MD

Associate Professor of Clinical Pediatrics; Course Director, Foundations of Patient Care 1 and Clerkship Fundamentals, West Reading Campus, Drexel University College of Medicine; Attending Physician, St. Christopher's Hospital for Children

I joined St. Christopher's Hospital for Children and Drexel University College of Medicine six years ago. Over this time, I've taken on more responsibility within the medical school, and I want to understand how I can enhance my capacity to contribute to the curriculum and be a more effective leader. I also want to have a broader understanding of the College's institutional priorities, leadership infrastructure, and finance for both clinical practice and academic medicine. I thought Faculty Launch could help me with all of this, and that is proving to be true. My experiences and successes in the rollout of the Foundations of Patient Care 1 course at the West Reading Campus have been a foundational part of my professional development. A formal understanding of implementation and management strategies provided by Faculty Launch is a logical next step to build upon this experience.

As I pursue my professional goals, the networking and relationships I've formed in Faculty Launch will be invaluable. Members of my Dragon Learning Circle have expertise in student affairs, student admissions, research, advising and education, and are really generous in sharing their advice. We have a huge diversity in our backgrounds, medical specialties and our functions within the College, and this diversity is incredibly helpful to me in problem-solving my day-to-day questions involving students. It's also very valuable to understand the challenges that my peers face and how I can work with them effectively across campuses, particularly in my new role as West Reading Campus Clerkship Fundamentals course director.

Coming up next are interviews with academic chairs and senior leadership. I think this will be an extraordinary opportunity to learn from national experts who are rooted in the institution. I am grateful to Drs. Spector and Kutzler and the Office of Faculty for their work on this program and to my sponsors, Dr. Turchi and Karen Restifo, MD, JD, regional vice dean, West Reading Campus, for their support. I encourage any mid-career faculty to consider participating!

FLIP: Develop a user-friendly planning model to unify DUCOM campuses in the execution of the Clerkship Fundamentals curriculum

I plan to use my new role as course director to expand the dialogue between campuses and to capture workflows that target areas of critical alignment. This creates an opportunity to learn and implement organizational strategy and promote efficiency and standardization of curriculum execution between campuses, allowing faculty to focus on teaching rather than logistics. With this tool, routine work can be more efficient, education will be uniform and faculty will feel more satisfied in their collaborative efforts.

– By Nancy West

Faculty Development for All Career Stages

The Office of Faculty offers numerous professional development and funding opportunities for faculty of all career stages.

Faculty Day and Faculty Awards

Faculty Day is a hybrid in-person/virtual event that includes professional development opportunities for all faculty. The event also includes a celebration of the recipients of the Faculty Awards, which honor excellence in research and scholarship, education, community outreach, mentoring and leadership, and diversity and inclusion impact.

COMMon Grounds

COMMon Grounds is a virtual series on various topics presented by speakers across Drexel. Recent topics have included improving CVs, preparing for promotion, mentee-driven mentoring, work-life integration, engaging with financial professionals, and the transition from faculty to retirement, including retiree benefits.

AAMC Leadership Development Opportunities

The College of Medicine supports eligible faculty members to apply for attendance at AAMC leadership development programs. One applicant is chosen from the internal pool to formally apply to the AAMC program. These programs are for audiences including early career and mid-career women faculty, and junior and mid-career minority faculty.

Professional Enrichment and Growth Grants

Professional Enrichment and Growth (PEG) Grants support faculty who wish to engage in an activity that will help them achieve their professional goals and advance the academic missions of their departments, the College of Medicine and the University. Multiple grants up to \$10,000 are awarded on an annual basis. The application is generally due mid-summer.

Mary DeWitt Pettit, MD, Fellowship

This \$10,000 fellowship supports research or other special projects of junior female faculty members at Drexel University College of Medicine. The application deadline is usually in April each year.

New Faculty Orientation

The Office of Faculty welcomes faculty at the virtual New Faculty Orientation each August. This program provides an overview of the College of Medicine and its activities, and is a chance for faculty to interact with one another.

More information for faculty is available at drexel.edu/medicine/faculty-and-staff/office-of-faculty/.

Microgreens Project Grows Community Connections

College of Medicine students know that food plays an important role in health, and they want not only to share that knowledge with Philadelphians from underserved communities, but also to empower them to grow their own fresh food. Students are engaged in work through the Health Outreach Project (HOP) to provide community members with the tools to grow microgreens, a nutritious vegetable that is simple to cultivate from many types of seeds.

Similar in appearance to sprouts, microgreens can be eaten raw or cooked and can add different flavors to a dish, depending on the seeds used, according to *Medical News Today*.¹ Microgreens need soil, sunlight and a daily misting to grow, and may take up just a bit of windowsill space.

The no-fuss plants, which yield fresh produce in just a few weeks, are perfect for people who may not have the time, space or previous experience to garden, says Jessica Nwabeke, MD '25, a steering coordinator of the microgreens project. She and her peers have been visiting different community sites to educate people of all ages about growing microgreens and the preventive health benefits of a balanced diet. "Whenever we go into different communities and talk about something that's new, like microgreens, it's always exciting for people to learn about something that they can do right in their home," Nwabeke says.

The microgreens project sees students visiting communities where people may not have easy access to affordable healthy foods or have the cultural familiarity to cook with the fresh produce that is available. "Essentially we are aiming to increase nutrition awareness in communities that might be less nutrition-privileged," Nwabeke says. "We are just having conversations with people about the growing process and about what healthy eating looks like, and tying that into chronic disease prevention."

Adults aren't the only ones excited about the microgreens project. HOP volunteers visit schools, sending kids home with their own microgreens and with an age-appropriate understanding of healthy eating and the importance of nutrition. Rayna Marshall, MD '25, a steering coordinator of the project, says HOP's first visit to St. James School made a lasting impression: Teachers are showing a new group of students how to grow microgreens and have been giving the products out to community members.

Nwabeke has been struck by the importance of patient empowerment, and how supportive action can help doctors and patients work together to better patients' health. "Microgreens has really reminded me that so long as we can educate people and give them the tools, they feel like they can be a part of the solution in taking care of their health," she says.

According to Ben Haslund-Gourley, an MD/PhD student in the second year of his Microbiology & Immunology PhD program and founder of the microgreens project, the program also lets HOP volunteers practice important skills in patient education and cultural humility.

"I think we try to strike a delicate and respectful balance between promoting food as preventive medicine, and making sure we aren't saying, 'The foods that you may love, that are important to you culturally, are bad,'" he says. "Medical students want to educate people about things that can lower risk and promote health in positive ways, but still stay respectful and open-minded about food."

One way HOP volunteers have enhanced their conversations about healthy eating and microgreens is by sharing recipes with community members. Thanks to a collaboration between Drexel students studying with Jonathan Deutsch, PhD, and Rachel Sherman, MPH '24, of Drexel's Food Lab, every HOP microgreens kit comes with recipes that use the vegetables in guacamole, chimichurri sauce and dumplings.

Reference:

1. Health benefits of microgreens: <https://www.medicalnewstoday.com/articles/316075>

Addressing the Need for Diversity in Orthopedics

The Orthopedic Enrichment Program (OEP), a new educational opportunity made available to medical students across the Philadelphia region, held a launch event on December 3, 2022. The OEP was created to address racial, ethnic and gender disparities that exist broadly in medicine and specifically in the field of orthopedic surgery.

This initiative is the work of third-year Drexel MD student and past president of the Drexel Orthopedic Surgery Interest Group, David Okhueigbe, who founded the OEP with the dual goals of creating meaningful hands-on experiences for medical students interested in pursuing careers in orthopedic surgery and diversifying the field by increasing exposure to students who are underrepresented in medicine.



OEP faculty in the Sawbones lab at DePuy Synthes with David Okhueigbe (far right).

Twenty applicants from medical schools throughout the city, including 12 Drexel MD students, were selected to attend the OEP, sponsored by DePuy Synthes' Trauma Division. Students experienced a day of mentorship from orthopedic surgeons and staff experts at DePuy Synthes led by Brett Smith, regional sales manager. Orthopedic

Pediatric AIDS Benefit Concert Celebrates 30 Years

The popular music styles of the day may change, but the mission of the student-run Pediatric AIDS Benefit Concert — raising money for children living with HIV and AIDS — has been the same for 30 years. In that time, the event has raised more than \$650,000 for its cause.

This year's concert featured 12 acts, showcasing students' and faculty members' talents in dance, songwriting and a cappella singing, and featuring everything from classical music to the genre-defying Dennis Novack Experience cover band. As in years past, the event benefited the Dorothy Mann Center for Pediatric and Adolescent HIV at St. Christopher's Hospital for Children.

Although living with HIV is more manageable today than it was when the Pediatric AIDS Benefit Concert was founded, affected patients and families must deal with the financial impact of an ongoing chronic condition. Through donations, ticket sales and a silent auction, the concert raises funds to assist families affected by HIV with such costs as housing, utilities, food and rent, and can offset other expenses like college application fees and supplies for summer camp. The Dorothy Mann Center for Pediatric and Adolescent HIV provides comprehensive care, including social services, to children who are HIV positive and their families.



surgical faculty included Drexel's interim chair of orthopedic surgery, Martin Herman, MD, Bobby Ndu, MD, University of Pennsylvania, and Larry Miller, MD, Rowan University, along with resident physicians Jenna Feldman, DO, Rowan University, Genoveffa Morway, DO, Ohio University Heritage College of Osteopathic Medicine, and Karnesha Goins, MD, Meharry Medical College. At the morning panel discussion, "My Journey to a Career in Orthopedic Surgery," students interacted with faculty and Oray Boston, the worldwide DePuy Synthes Trauma Division president. The event included the opportunity for all participants to perform four hands-on, simulated surgical implant procedures.

"The OEP represents the continued, needed effort to expand access to groups that are tremendously underrepresented in this field," says Okhuereigbe. "This program was designed to address these big issues by expanding access in a way that hasn't been

seen before, while prioritizing the recruitment of groups that need to be seen more."

Recent data from the Accreditation Council for Graduate Medical Education suggests that orthopedic surgery is the least diverse medical specialty. This disparity is most pronounced in the Black and Latino/Hispanic communities, which comprise a mere combined 8% of orthopedic surgical residents yet represent a total 32.5% of the U.S. population. Women, while representing roughly 51% of the medical student body, comprise only 15% of orthopedic surgical residents.

The goal is to expand upon the OEP event in the upcoming year with semiannual course events, each tailored to a different subspecialty within orthopedic surgery. Additional DePuy Synthes facilities aim to adopt the program as the OEP advances in its mission to promote diversity in the field of orthopedic surgery across the country.

College of Medicine at Tower Health Welcomes New Assistant Dean Bisan Salhi

Bisan A. Salhi, MD, PhD, has joined Drexel as assistant dean for student affairs, diversity, equity and inclusion at the College of Medicine at Tower Health in West Reading. Salhi comes to Drexel from Emory University School of Medicine, where she was associate professor of emergency medicine and a society leader in the Community Learning and Social Medicine curriculum.

After obtaining a bachelor's degree and MD from the University of Michigan, Salhi completed an emergency medicine residency at Emory University, where she then remained as faculty and from which



she later received a PhD in medical anthropology.

Salhi's work at Emory was recognized with a number of institutional and national awards, including Emory's Emergency Medicine Faculty Teacher of the Year award, the George Armelagos Award for Excellence in Teaching, and the Catalyst Award from the Academy for Women in Academic Emergency Medicine.

Salhi has lectured and published on topics including racial equity and social justice, homelessness in the emergency department, the accessibility of telehealth, and gender bias in medicine. Her current research focuses on vulnerable populations in emergency departments, specifically the ways that social policy and urban environments influence patients' use of emergency care services.

In her role as assistant dean, Salhi looks forward to contributing to supporting students' development and growth in and out of the classroom.

Leadership, Teaching and Service Celebrated at Honor Society Induction

On March 22, 2023, an induction ceremony for the Alpha Omega Alpha Honor Medical Society and the Gold Humanism Honor Society was held at the Germantown Cricket Club in Philadelphia. Two alumni, 11 faculty, 14 residents and fellows, and 53 students were inducted into AOA, a society dedicated to improving care for all through the recognition of educational achievement and gifted teaching, as well as encouraging the development of leadership and promoting service to others. The GHHS inducted four faculty members, five residents and 43 students, recognizing those who



are "exemplars of compassionate patient care and who serve as role models, mentors and leaders in medicine."

Nancy D. Spector, MD, senior vice dean for faculty and executive director, Executive Leadership in Academic Medicine program, Executive Leadership in Health Care program, and Lynn Yeakel Institute for Women's Health and Leadership, gave the June F. Klinghoffer, MD Lecture. Spector shared wisdom from her own career journey, advising the student inductees to stay anchored to what

drew them to medicine and to develop a strong network of mentors and allies. "My network has sustained me throughout many bumps in my career path," Spector said. She also encouraged attendees to support younger colleagues. "Be proactive and reach back to act as their mentor, sponsor and ally."

A full list of honor society inductees is available at bit.ly/DUCOM2023AOA.

AMWA Honors Nancy Spector With Blackwell Medal

Nancy D. Spector, MD, senior vice dean for faculty, is the recipient of the American Medical Women's Association's 2023 Elizabeth Blackwell Medal. The award, named for the first woman to earn an MD degree from an American medical school, is given annually to a woman physician who has made outstanding contributions to the cause of women in medicine, created pathways for other women in medicine and made other exceptional contributions to women in medicine.

Spector was chosen as the Blackwell awardee for significant contributions in gender equity, mentorship, sponsorship and advancing women leaders to the highest levels in medicine. In



addition to her role as senior vice dean, Spector is a professor of pediatrics, and executive director of the Hedwig van Ameringen Executive Leadership in Academic Medicine and Executive Leadership in Health Care programs. She is also the Betty A. Cohen Chair in Women's Health and executive director of the Lynn Yeakel Institute for Women's Health and Leadership.

Spector accepted the award during the AMWA annual meeting in Philadelphia in March. As part of the meeting, AMWA members were invited to a reception and tour at Drexel's Legacy Center. The Legacy Center is the official repository for AMWA's archives, housing more than 100 years of records.



Seeing Their Futures: MD Class of 2023 Celebrates Match Day

On Friday, March 17, anticipation filled the Queen Lane Campus as fourth-year medical students gathered to learn where they would be spending the next three to seven years of their lives. Match Day takes place every year on the third Friday in March, when thousands of medical students across the U.S. open white envelopes to learn where they will complete their residency training.

Students' loved ones and College of Medicine

faculty and staff were in attendance to celebrate an exciting next step in the future physicians' careers. After a countdown to noon, students opened their envelopes and greeted their match news with cheers, hugs for friends and family, and even some tears of joy.

The largest proportion of the College of Medicine's class of 2023, 72 students, will train as physicians in Pennsylvania. The next most popular states for residency matches are California (32 students), and New York (30 students). The specialties that the class of 2023 are pursuing the most are internal medicine (41 students), pediatrics (25 students) and obstetrics and gynecology (22 students).



First-Year Students Discover the Interplay Between Medical and Natural Sciences

Early last November, 50 first-year medical students from both the Queen Lane and West Reading Campuses gathered at Drexel's Academy of Natural Sciences for an evening of presentations by a science historian, ornithologist and ichthyologist.

Examining Renaissance texts in Latin, bird bones and eel specimens may seem tangential to a medical student's typical course of study. And that's precisely why Daniel Schidlow, MD, director of bioethics, medical humanities and professional formation at Drexel University College of Medicine's West Reading Campus, sought to organize the event for students. Understanding the interplay between the natural and medical sciences, he argues, is integral to the development of a well-rounded physician.

"It made a lot of sense for the two institutions to partner. The event was an opportunity for students to understand the history of medicine and to connect to some of their own interests outside of the field," he says, acknowledging the close collaboration of Scott Cooper, PhD, president and CEO of the Academy, as well as Andrea Bensusan and Laura Mullin, program coordinators at the College of Medicine. "This sort of exposure ultimately contributes to the formation of a professional — more empathic, more aware, more connected to the world at large and to one another."

A short drive from the College of Medicine's Queen Lane Campus, the Academy, which was founded in 1812 and forged an affiliation with Drexel in 2011, houses a world-class collection of biological specimens. The oldest natural science research institution in the Americas, it boasts over 18 million plant and animal species. Among its founders and early leaders were medical doctors.

"At the time, physicians had long pursued the natural sciences in order to understand the use of plants and other natural resources in medicine. The two fields were deeply interrelated," explains Pedro Raposo, DPhil, executive director of library and archives at the Academy, and one of the event's three presenters. Like Schidlow, he was eager to collaborate and share with students how the Academy's holdings can enrich their perspective. "It's all part of developing a more humanistically and culturally framed understanding of medicine and medical practice," he adds.

Following a buffet dinner in Dinosaur Hall, students and a handful of College of Medicine faculty — including Steven Rosenzweig, MD, director of the Office of Community Engagement, who was also involved in organizing the event — broke into small groups and rotated through three presentations.

Gathering students around a large table, Raposo displayed two early printed books from the museum's collection, both dating back to the mid-1500s and filled with intricate wood carvings, metal engravings and woodcut illustrations. The first text, a 4,500-page compendium of animals, was written by Swiss physician and naturalist Conrad Gessner. The second, a treatise on plant materials published by Italian physician Pietro Andrea Mattioli, was considered one of the most prominent reference works for physicians well into the 18th century.

In addition to probing the connection between the natural and medical sciences, Raposo led students in a conversation that considered the relationship between science and power, and how imperial expansion and colonialism impacted the evolution of science and the dissemination of knowledge.

"The students were very enthusiastic and showed great curiosity," he recalls. "Precisely because we live in a digital age, the physical book acquires a new meaning and new appeal."

Students were also treated to presentations by Luke Musher, PhD, postdoctoral scholar in ornithology, as well as Mark Sabaj, PhD, collection manager of fishes.

West Reading student Caitlyn Curley, MD '26, was particularly taken by the vast fish specimens shared by Sabaj, and current research on the impact of microplastics found in various species. "As I make my way through my first year of medical school, I see that medicine is so much more than just the basic sciences — it intersects with all aspects of the world around us," she says. "The event helped me to have a greater understanding



of just how much we can learn about our health from studying the environment."

The event was also a chance for students to visit just one of many local educational and research institutions at their disposal. "My personal interest was also for students to understand and realize the tremendous resources they have access to at Drexel," Schidlow says. Raposo agrees, noting that the Academy is in part meant to act as a classroom to serve Drexel students and faculty.

November's event marked the second occasion that the College of Medicine has collaborated with an organization to widen the lens of student learning. The first, a visit to the Mütter Museum, at the College of Physicians of Philadelphia, took place in 2021. In the future, Schidlow hopes to plan an outing closer to the West Reading Campus.

This opportunity to unite the two campuses was another driving force in his effort to organize the event. "It is very important that even though the two campuses are 50 miles apart they do not see each other as different entities," he says. "I'm prone to symbolism, but this event was an important reminder that we are one school."

David Matson to Lead Department of Anesthesiology & Perioperative Medicine

David A. Matson, DO, has been named interim academic chair of the Department of Anesthesiology & Perioperative Medicine. Matson has been a faculty member at Drexel since 2020. He also serves as the chair of the Department of Anesthesiology and the associate designated institutional official for graduate medical education for Reading Hospital.

Matson served in the U.S. Marine Corps Reserve and then attended Temple University for his undergraduate degree in chemistry and philosophy. He earned his DO from Philadelphia College of Osteopathic Medicine in 1999, followed by a transitional internship at Mercy Catholic Medical Center and residency in anesthesiology at the Hospital of the University



of Pennsylvania. He joined Reading Hospital in 2018, after having served as chief of the Department of Anesthesiology at Einstein Medical Center Montgomery for six years.

A dedicated medical educator, Matson was the program director for Reading Hospital's anesthesiology residency from 2019 to 2022. He has received several teaching honors from Drexel University College of Medicine

including the Alpha Omega Alpha Volunteer Clinical Faculty Award and the Dean's Special Award for Excellence in Clinical Teaching in 2021, and the Golden Apple Teaching Award and Gold Humanism Award for Clinical Faculty, both in 2022.

Matson's clinical interests include airway management, obstructive sleep apnea protocols for perioperative patients, opioid-induced respiratory depression and malignant hyperthermia. He is a member of the American Society of Anesthesiologists, the Pennsylvania Society of Anesthesiologists and the Society of Obstetrical Anesthesiology and Perinatology.

Diversity Week 2023

Diversity Week took place February 13-17, 2023. The week featured a number of events that were open to medical and graduate students on the Queen Lane and West Reading Campuses, including Paint Your Flag, Afrobeats Dance Class and Around the World. More than 200 students participated in one or more Diversity

Week events. The week was organized by a team of Diversity Ambassadors led by first-year MD students Tasha Garayo, Julianna Kinsolving, Coral Caceres, Ana Maria Barrero and Dayna Johnson, and second-year MD student Michelle Ehiriodo, with support from the Office of Diversity, Equity & Inclusion.



“The Great Renegotiation”: WIMSC Summit Tackles Gender Equity in Medicine, Science and Leadership

The 2023 Leadership Summit, hosted by the Women in Medicine and Science Committee, was held virtually on February 10. The theme of the immersive, interactive event was “The Great Renegotiation.”

“This summit was organized with the idea that many of us are finding a need to restructure our lives and careers but may not currently have the toolbox to clearly define those priorities, to recognize potential opportunities or to successfully renegotiate to achieve goals,” says Jacqueline Barker, PhD, associate professor of pharmacology and physiology and co-chair of the committee.

The summit began with the presentation of the WMC/MCP Phyllis Marciano, MD, WMC '60, Woman in Medicine Award to Marla J. Gold, MD, senior vice provost of community health and chief wellness officer at Drexel.

The event also included three hourlong sessions on topics including overcoming inequities, setting goals, and negotiation skills. The sessions were presented by experts from academic institutions including Drexel, Yale University, the University of Puerto Rico, the Long School of Medicine and the University of North Carolina, as well as the College of Physicians of Philadelphia, the National Institutes of Health, and Metta Solutions, a professional coaching, consulting and training firm.

“There has been a growing recognition that our priorities and goals for our careers and our time have shifted. This event was intended to begin to provide us all with the tools necessary to appropriately advocate for the things that we need to be successful in both our personal and work lives,” says Vanessa Pirrone, PhD, associate professor of microbiology and immunology, and associate dean of admissions, who co-chairs the committee.

About 200 participants from all career stages and more than 40 institutions attended the event. The summit was recorded and can be viewed at bit.ly/WIMSCsummit.



Seena Ajit, PhD, associate professor of pharmacology and physiology, gave an invited talk, "The Role of Small Extracellular Vesicles in Pain," at the Pain Interest Group meeting hosted by the Department of Anesthesiology at the University of Minnesota Medical School

on January 18, 2023. Ajit was one of the authors of "Preclinical Target Validation for Non-addictive Therapeutics Development for Pain," which was published in *Expert Opinion on Therapeutic Targets* in September 2022.



Jessica R. Barson, PhD, associate professor, Department of Neurobiology & Anatomy, co-chaired a symposium, "Neurobiology of Binge Eating and Food 'Addiction': A Translational Perspective," and delivered a platform presentation, "Sex Differences in Binge-Like Eating in

Mice: Role of Pituitary Adenylate Cyclase-Activating Polypeptide (PACAP) in the Paraventricular Thalamus," at the Winter Conference on Brain Research in Snowbird, Utah, on January 24, 2023.



Irollo



Meucci

Renato Brandimarti, PhD, visiting research associate, **Elena Irollo, PhD**, research assistant professor, and **Olimpia Meucci, MD, PhD**, professor and chair, all in the Department of

Pharmacology & Physiology, published "The US9-Derived Protein gPTB9TM Modulates APP Processing Without Targeting Secretase Activities" in *Molecular Neurobiology* online December 28, 2022.

Maria Cavallo, a Pharmacology & Physiology PhD student, was selected to receive a Travel Award from the Society for Melanoma Research. The award supported Cavallo's attendance at the Annual Congress of the Society for Melanoma Research in November 2022.



Channer



Matt

Breana Channer, an MD/PhD student in the Pharmacology & Physiology program, **Stephanie Matt, PhD**, postdoctoral fellow, Department of Pharmacology & Physiology,

Emily Nickoloff-Bybel, PhD pharmacology and physiology '22, **Yash Agarwal**, an MD/PhD student in the Pharmacology & Physiology program, **Jason Wickman**, Pharmacology & Physiology PhD student, **Peter J. Gaskill, PhD**, associate professor, Department of Pharmacology & Physiology, and a colleague at Children's Hospital of Philadelphia published "Dopamine, Immunity, and Disease" in the December 8, 2022, issue of *Pharmacological Reviews*. Matt, Gaskill, **Ogan Kumova, PhD microbiology and immunology**



Gaskill

'20, **Abhishek Rao**, Microbiology & Immunology PhD student, **Hannah Johnson, BS cell/cellular and molecular biology '21**, **Judy Pascasio, MD**, assistant professor, Department of Pediatrics, and **Alison J. Carey, MD**, associate professor, Departments of Pediatrics and Microbiology & Immunology, were among the authors of "Severity of Neonatal Influenza Infection Is Driven by Type I Interferon and Oxidative Stress Imbalance." The paper appeared in the June 2022 issue of the journal *Mucosal Immunology*.



Pascasio



Carey



Eckel



Baas

Bridie D. Eckel, a PhD candidate in the Neuroscience program, her mentor, **Peter Baas, PhD**, professor, Department of Neurobiology & Anatomy, and colleagues at Central

Washington University published "Microtubule Polarity Flaws as a Treatable Driver of Neurodegeneration" in the January 2023 issue of *Brain Research Bulletin*.



Julia Farnan, Pharmacology & Physiology PhD student, received first prize among graduate students for her poster presentation at the Mid-Atlantic Pharmacology Society annual meeting.



Simon Giszter, PhD, professor of neurobiology and anatomy, and colleagues from Alvernia University and University of Louisville were the authors of "Modular Organization of Locomotor Networks in People With Severe Spinal Cord Injury," which appeared in *Frontiers in Neuroscience* on December 7, 2022.



Guzik



Loll



Padrick



Beld

Kimberly C. Grasty, MS biology '11, research associate, Department of Biochemistry & Molecular Biology, **Claudia Guzik, MD '23**, **Elizabeth J. D'Lauro, PhD biochemistry of health and disease '20**, **Shae B. Padrick, PhD**, assistant professor of biochemistry and molecular biology, **Joris Beld, PhD**, assistant professor of microbiology and immunology, and **Patrick J. Loll, PhD**, professor of biochemistry and molecular biology, authored "Structure of VanS from Vancomycin-Resistant Enterococci: A Sensor Kinase With Weak ATP Binding," which was published in the March 2023 issue of the *Journal of Biological Chemistry*.

and immunology, and **Patrick J. Loll, PhD**, professor of biochemistry and molecular biology, authored "Structure of VanS from Vancomycin-Resistant Enterococci: A Sensor Kinase With Weak ATP Binding," which was published in the March 2023 issue of the *Journal of Biological Chemistry*.



Joshua Jackson, PhD, assistant professor of pharmacology and physiology, received his third grant from the W.W. Smith Charitable Trust. The funds will support his project “Astrocytic Mitochondria Control Neurovascular Coupling.”



Pooja Jain, PhD, professor of microbiology and immunology, was invited to present “Discovery of a New Target for ATLL, Mechanistic Studies and Pharmacological Intervention” at the Sidney Kimmel Cancer Center’s Hematologic Malignancies Working Group at Thomas Jefferson

University on September 27, 2022. She also presented “Mechanistic and Therapeutic of Retroviral and Neuroinflammatory Diseases” at Hunter College on October 21, 2022, as well as “MEF-2C Drives T-cell Proliferation From the Antisense Promoter of HTLV-1 via b-zip Protein, Menin and JunD Leading to ATLL,” an invited talk at the 7th International Conference on Cancer Research and Drug Development in Baltimore, Maryland, on October 26.

Jain and **Ajinkya Pattekar, MS immunology ’16**, were among the authors of “TLR9 Signaling Activation via Direct Ligation and Its Functional Consequences in CD4+ T Cells,” which appeared in the *Scandinavian Journal of Immunology* August 25, 2022. Jain, **Edward Lin, MD ’24**,



Lin

Grace Sandel, MS interdisciplinary health sciences ’23, and a colleague at The Ohio State University were the authors of “Novel Perspectives on Antisense Transcription in HIV-1, HTLV-1, and HTLV-2,” which was published in *Frontiers in Microbiology* December 23, 2022.

Daniel Joseph Gómez, research associate, Tania H. Mulherkar, MD ’24, Sandel and Jain presented “Co-infection and Cancer: Host-Pathogen Interaction Between Dendritic Cells and HIV-1, HTLV-1, and Other Oncogenic Viruses” at the 12th American Association for Cancer Research-Japanese Cancer Association Joint Conference: Breakthroughs in Cancer Research – Translating Knowledge Into Practice, which was held December 10-14, 2022, in Maui, Hawaii. The group also presented an abstract of the same name at the 31st Annual Philadelphia Infection and Immunity Forum on December 12, 2022.



Mulherkar

Zachary Klase, PhD, associate professor, Department of Pharmacology & Physiology, gave an invited talk, “The Effect of Benzodiazepines on HIV Epigenetics in the CNS and Beyond,” at the American Association for the Advancement of Science annual meeting.



J. Yasha Kresh, PhD, professor emeritus of medicine and surgery, was an invited participant at the 9th International Workshop on Cardiac Mechano-Electric Coupling and Arrhythmias held in Freiburg, Germany, September 21-24, 2022. His presentation was “Intrinsic Cardiac Nervous System (ICNS): Mechanosensing and Local Circuit Feedback in Cardiac Neuromodulation.”

Calendar

June

- 1 **Drexel Graduate Student Day**
4-6 p.m.
Bossone Research Enterprise Center
3126 Market Street, Philadelphia, PA 19104
- 2 **Faculty Professional Development Day**
Including the presentation of the 2023 Faculty Awards
12-5 p.m.
In-person: Health Sciences Building
60 North 36th Street, Philadelphia, PA 19104
Online: via Zoom
Contact: Caitlin Curcio, cak332@drexel.edu
- 12 **ScholarSip Featuring Nathalie S. May, MD**
“Climate Change and Sustainability”
4-5 p.m.
Online event
Contact: Stacy Stanislaw, sv22@drexel.edu
- 12 **2023 Doctoral Student Celebration**
5-7:30 p.m.
World Café Live
3025 Walnut Street, Philadelphia, PA 19104
Contact: graduatecollege@drexel.edu
- 19 **Juneteenth**
- 21 **Employee Olympics**
2-5 p.m.
Drexel Recreation Center
3301 Market Street, Philadelphia, PA 19104
Contact: zaa28@drexel.edu

July

- 4 **Independence Day**

September

- 4 **Labor Day**

Full calendar: All College of Medicine events are available at drexel.edu/medicine/news-events/events.

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.



Taylor A. McCorkle, MS, a PhD candidate in the Neuroscience program, delivered a talk on December 8, 2022, as part of IBNS (Is) Staying Connected, a virtual global seminar series held by the International Behavioral Neuroscience Society for early-career researchers.

McCorkle's talk was "Sex-Dependent Mechanisms Underlying Cognitive Deficits Following Repeated Concussion in Adolescence."



Miller

Vandana Miller, MD, associate professor, Department of Microbiology & Immunology, was awarded a pilot grant funded by the College of Medicine as part of the College's support of the Comprehensive NeuroHIV Center and the Comprehensive NeuroHIV Center Developmental Research and Mentorship Core in the Lewis Katz School of Medicine at Temple University. The funded proposal, "Proof of Concept Studies of a Non-thermal Plasma-Based Immunotherapy for HIV-1 Infection," will be conducted in collaboration with **Fred Krebs, PhD**,



Krebs

associate professor, Department of Microbiology & Immunology, and **Jacqueline Barker, PhD**, associate professor, Department of Pharmacology & Physiology.

Hager Mohamed, PhD, microbiology and immunology '21, and Miller are among the authors of a paper, "Pancreatic Cancer Cells Undergo Immunogenic Cell Death Upon Exposure to Gas Plasma-Oxidized Ringers Lactate," published in the January 2023 issue of the Plasma Oncology Collection of the journal *Cancers*.

Mohamed, **Rachel Berman, PhD molecular and cell biology and genetics '21**, **Jennifer Connors,**



Haddad



Nonnemacher

PhD microbiology and immunology '22, Elias K. El Haddad, PhD, professor of medicine, and Department of Microbiology & Immunology faculty members Miller, Krebs,



Dampier



Wigdahl

Michael Nonnemacher, PhD, associate professor, **Will Dampier, PhD**, associate professor, and **Brian Wigdahl, PhD**, professor and chair, published

"Immunomodulatory Effects of Non-thermal Plasma in a Model for Latent HIV-1 Infection: Implications for an HIV-1-Specific Immunotherapy" in the journal *Biomedicine* on January 3, 2023, as part of a special issue, "Nonthermal Plasma-Based Immunotherapy."

Eagles Grant Aims to End Gun Violence

Drexel's Healing Hurt People program was one of nine recipients of a grant from the Eagles Social Justice Fund. The fund is created through personal donations from Eagles team members. Healing Hurt People, a hospital-based and community-linked violence intervention program, is part of Drexel's Center for Nonviolence and Social Justice, and its faculty director is **Annette B. Gadegbeku, MD**, associate professor of family, community and preventive medicine and associate dean, Office of Community Health & Health Equity.



Nothem



Wickman

Mitch Nothem, PhD pharmacology and physiology '20,

postdoctoral scholar, Department of Pharmacology & Physiology, **Jason**



Giacometti



Barker

Wickman, Pharmacology & Physiology PhD student, **Laura Giacometti, PhD**, postdoctoral scholar, Department of Pharmacology & Physiology, and

Jacqueline Barker, PhD,



Buck

associate professor of pharmacology and physiology, authored "Effects of Ethanol on Mechanical Allodynia and Dynamic Weight Bearing in Male and Female Mice With Spared Nerve Injury," which appeared in *Alcohol: Clinical and Experimental Research* in February

2023. Giacometti, Barker and **Lauren Buck, MS**, Barker Lab manager, published "Estrous Cycle and Hormone Regulation of Stress-Induced Reinstatement of Reward Seeking in Female Mice" in the December 2022 issue of *Addiction Neuroscience*.

Dana Peterson, PhD, professor, Department of Neurobiology & Anatomy, was awarded an American Association of Anatomy Innovations Grant for the proposal "The Anato-Bee: A Scholastic Competition in the Anatomical Sciences for High School Students."



in June 2023.

Breanne Pirino, MS, a PhD student in the Neuroscience program, was awarded the 2023 Robert E. Davies Student Travel Award from the Philadelphia Chapter of the Association for Women in Science to attend the Research Society on Alcohol Conference in Bellevue, Washington,



Tell your colleagues what you're doing. Email CoM_Pulse@drexel.edu.



Deepa Reddy, Pharmacology & Physiology PhD student, was selected as a finalist for the American Association for the Advancement of Science e-poster competition in the Brain and Behavior category. She participated in the final round of the competition in Washington, D.C., in March 2023. Reddy also earned second prize among graduate students for her poster presentation at the Mid-Atlantic Pharmacology Society annual meeting.



Reeb

Katelyn Reeb and **Neha Mohan**, Pharmacology & Physiology PhD students, received Dean's Graduate Student Travel Awards for the fall 2022 award cycle. Reeb also earned a research fellowship from the PhRMA Foundation. The fellowship provides up to two years of stipend funding to PhD candidates in the pharmaceutical sciences.



Mauricio Reginato, PhD, professor and interim chair, Department of Biochemistry & Molecular Biology, has been awarded a 2023 Pennsylvania Breast Cancer Coalition grant of \$100,000 for the project "Role of ACSS2 in Breast Cancer Brain Metastasis Survival."



Romano



Mortensen

Gabriele Romano, PhD, assistant professor of pharmacology and physiology, **Lindsay Barger**, Microbiology & Immunology PhD student, and **Olivia El Naggari**, Molecular & Cell Biology & Genetics PhD student, were among the authors of "Microparticle-Delivered Cxcl9 Prolongs Braf Inhibitor Efficacy in Melanoma," which was published in the February 2023 issue of *Cancer Immunological Research*. Romano was also invited to participate in the NIH study section "Mechanisms of Cancer Therapeutics A."



Qiang



Cairns

Romano, **Andréia Mortensen, PhD**, assistant professor of pharmacology and physiology, and **Liang Oscar Qiang, MD, PhD**, assistant professor of neurobiology and anatomy, attended the Eureka Institute for Translational Medicine's 13th Annual International Certificate Program in Translational Medicine in Siracusa, Italy, in October 2022. **Dean Charles B. Cairns, MD**, is a member of the program's faculty.



Antonio Sanz-Clemente, PhD, associate professor, Department of Pharmacology & Physiology, was nominated to serve as vice president of the Philadelphia Chapter of the Society for Neuroscience.

Christian Sell, PhD, associate professor, Department of Biochemistry & Molecular Biology, received a five-year NIH National Institute of Aging R01 grant for \$2,075,000 to support his project "Novel Longevity Enhancing Pathways Regulated by mTOR."

Atif Siddiqui, MD, a second-year master's student in the Drug Discovery & Development program, was awarded the highly competitive Rutgers-Bristol Myers Squibb Physician Pharmaceutical Fellowship, which will begin in July 2023.



primitive motor elements or modules.

Trevor Smith, a PhD candidate in the Neuroscience program, was recently awarded an F31 fellowship from the National Institute on Neurological Disorders and Stroke. His research focuses on how the spinal cord facilitates movement through combinations of



Temmermand



Barrett

Rhea Temmermand, a Pharmacology & Physiology PhD student, **James Barrett, PhD**, emeritus professor of neurology, and **Andréia Mortensen, PhD**, assistant professor of pharmacology and physiology, authored "Glutamatergic Systems in Neuropathic Pain and Emerging Non-opioid Therapies" in the November 2022 issue of *Pharmacological Research*.

Society for Neuroscience Annual Meeting

Several Pharmacology & Physiology PhD students presented posters at the Society for Neuroscience 2022 annual meeting in San Diego, California.

Christina Besada: Bidirectional ERK1/2 Modulation in Dopaminergic Neurons Regulates DAT Trafficking and Function

Clara Xu: Allosteric Dopamine Transporter Modulator Inhibits Cocaine-Induced Behaviors

Katelyn Reeb: Positive Allosteric Modulation of Glutamate Transporter EAAT2 as a Novel Therapeutic Approach for Neurological Disorders

Simran Gill: Differential Regulation of Glutamate Transporters Following Ischemia

Rhea Temmermand: Development of Glutamate Transporter Modulators as a Novel, Non-opioid Treatment for Neuropathic Pain

Chunta Ho: Effect of the Chemokine CXCL12 on Dendritic Spine Maturation, Turnover and Clustering



Veronica Tom, PhD, professor, Department of Neurobiology & Anatomy, gave an invited seminar, "Who's the Boss?: Reflexes and Dysautonomia After Spinal Cord Injury," at the University of Pennsylvania Neuroscience Public Lecture on December 8, 2022. Tom also gave an invited seminar, "Targeting a Silent Killer: Dysautonomia After Spinal Cord Injury," at the International Spinal Research Trust Annual Network Meeting in London, England, on September 10, 2022.



Toth



Fatatis

Allison Toth, MD '25, Alessandro Fatatis, MD, PhD, professor of pharmacology and physiology, **Anthony DiNatale, MD, PhD** pharmacology and physiology '21, **Asurayya Worrede, PhD** pharmacology and physiology '19, and **Michael Marchioli, BS biology/biological sciences '22**, were among the authors of "IL-1 Expression Driven by Androgen Receptor Absence or Inactivation Promotes Prostate Cancer Bone Metastasis," published in *Cancer Research Communications* in December 2022.



Mark B. Woodland, MS, MD, professor and interim academic chair, Department of Obstetrics & Gynecology, was a featured speaker as part of the second annual Betsey, Lucy, and Anarcha Days of Recognition Memorial Lecture, "Supporting Colleagues of Color: Practical Tips for Combating Racism and Burnout," hosted by the American College of Obstetricians and Gynecologists on March 1, 2023.

In Memoriam

Laura Lynch, longtime program director for the Executive Leadership in Academic Medicine (ELAM) program, died on February 3, 2023, at the age of 54. Lynch also earned her bachelor's degree in communications from Drexel University. In her role as program director for ELAM, she provided support and guidance for fellows at all stages: during the application process, throughout the program and in their transition to program alumnae and beyond. She held incredible insight and historical knowledge about ELAM. Lynch is predeceased by her parents, John and Sarah Mullen O'Fee. She is survived by her husband, William; two daughters, Sarah and Meghan; and three siblings, Diane Powers, and Mark and John O'Fee, and their partners, in addition to numerous nieces and nephews. Donations in her memory can be made to the ELAM Legacy Fund at giving.drexel.edu/LauraLynch. Please indicate that your gift is in her memory.

Recent Thesis Defenses

We congratulate the following master's and PhD students from the Graduate School of Biomedical Sciences and Professional Studies on the successful defense of their theses.



Matthew Bell
Microbiology & Immunology PhD Program

Title: Identifying Immune Correlates of Protection Against *Clostridioides difficile* Infection and the Development of an Optimized *C. difficile* Toxin DNA

Vaccine for the Elderly

Advisor: Michele Kutzler, PhD



Kathleen Bryant
Neuroscience PhD Program

Title: A History of Low-Dose Ethanol Alters Behavioral Strategy Selection and Ventral Hippocampus Function

Advisor: Jacqueline Barker, PhD



Douglas Krauth
Microbiology & Immunology Master's Program

Title: SARS-CoV-2 Small Open Reading Frames: Accessories and Accomplices – Literature Review

Advisor: Sonia Navas-Martin, PhD



Ian Lamb
Microbiology & Immunology PhD Program

Title: Investigating the *Plasmodium falciparum* Mitochondrial Proteome for Functional Analysis of Conserved Essential Proteins

Advisor: Akhil Vaidya, PhD



Nancy Mack
Neuroscience PhD Program

Title: Sex-Specific Regulation and Neural Representations of Social Behavior in a Corticothalamic Circuit

Advisor: Wen-Jun Gao, MD, PhD



Kyle Samson
Neuroscience PhD Program (MD/PhD Student)

Title: The Effects of Dual Hypocretin/Orexin Receptor Blockade on Oxycodone Seeking and Dopamine Neurotransmission in the Nucleus Accumbens

Advisor: Rodrigo España, PhD



Kayla M. Socarras
Microbiology & Immunology PhD Program

Title: Construction of a Borreliaceae Pangenome for Diagnostics and Therapeutics

Advisor: Garth D. Ehrlich, PhD

Get to Know...

What is your official title at Drexel?

Director, Application Development

Have you ever wished you could make up a more accurate title for yourself? If so, what would it be?

It would be too long, but I would like to be known as someone you can come to with a problem.

Explain what you do in under 100 words.

I lead a team responsible for application development (web, system services, etc.), REDCap, SharePoint and Dynamics CRM. Some solutions we developed support continuing medical education and fellowship programs (e.g., ELAM). We don't support the clinical applications, such as the electronic medical record, so don't call me, but we provide programming support to the clinical applications team. REDCap, our primary research software, is available for use throughout the University, and we are part of an interdepartmental team that supports SharePoint University-wide.

Who do you interact with most on a daily basis?

Staff, either my team or people from the other departments that we provide a service. For the most part, communication has improved with Teams messaging and calls with screen sharing. Teams and Skype were already around, but the pandemic got everyone to become conversant in it. That's a good thing; it's better structured than conference calls and using email for back-and-forth messaging.

What is your typical day like?

The day starts with checking emails, a management call on Teams, and checking jobs scheduled to run throughout the day. These usually involve securely importing data from other systems into REDCap or Sharepoint. Right now, our interesting jobs include importing student COVID testing appointments from an outside vendor and test results from the Drexel Medicine Diagnostics Lab. After the "sanity check," it's either working with staff, architecting a solution or troubleshooting a problem.

How do you see your work fitting into the big picture of the missions of the College?

The role of IT is to support everyone's needs by delivering solutions that allow them to focus on what they do best. We serve the academic, clinical and research missions of the College of Medicine.

What are your favorite and least favorite tasks?

I'll never enjoy the task of letting anyone go, regardless of the circumstances. Luckily, those times are rare. I enjoy the technical task that lets me "get in the zone." Before I know it, time has passed and I come out of it with a sense of accomplishment.

What is your educational and previous work background? How did those prepare you for what you do now?

I'm a graduate of Drexel from a program called Computer Systems Management. My primary career is software engineering and I've been in management

for two other employers. I've always stayed current with technologies as I've seen too many good people get stuck with administratively managing technical personnel to the point that they removed themselves from problem-solving. Having developed real-time applications early in my career gave me the skills to develop optimal code and I carry that with every task.

When you were working on-site, did you bring your own lunch or eat out?

Both. When it was being five days on-site, I'd brown-bag it three days a week and buy

something the other two. I do miss some of the lunches in Center City and Chinatown. When I come on-site nowadays, I buy it as it gives me a chance to step out for some air.

What's one unusual or unexpected item in your home work space or your office?

I have a ceramic Dr. Who Tardis mug. I keep change in it. It has a square opening, which is a poor shape for drinking anything, even more so after the second Irish coffee.



Walt Niemczura
Director,
Application Development





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SAVE THE DATE THURSDAY, NOVEMBER 2



Discovery Day 2023

