The art of cellular therapy:
Dr. Mailliard's group has been developing strategies using type-1 programmed dendritic cells (DCs) as a therapeutic tool to drive latent HIV out of hiding while also inducing cytotoxic T cell responses to target highly conserved regions of HIV. This is a scanning electron microscopy image of highlighting the surface structure of a DC that was produced by his group with the help of Dr. Simon Watkin's lab at the Center of Biologic Imaging, which was used as the cover of the Lancet Journal EBioMedicine earlier this year.
Meet our Interim Chair: Jessica Burke, PhD

My role as Interim Chair started in April and over the last eight months I’ve had a wonderful time learning more about the incredible work happening in this department - HIV/AIDS, tuberculosis, influenza, Zika, Dengue, Yellow Fever, Rift Valley Fever, tick-borne disease, COVID-19 and so much more.

I’m not a microbiologist nor an infectious disease researcher in the traditional sense, but I have spent over 20 years addressing HIV among women – specifically the intersecting issues of HIV, mental health, intimate partner violence and substance use. While I wear many hats, including Interim Vice Dean and Associate Dean for Academic Affairs, my faculty appointment is as a Professor in Behavioral and Community Health Science. I’m passionate about using community engaged, creative and systems-oriented methods to address social and environmental determinants of health. More importantly, I have leadership experience and really enjoy the administrative side of my faculty position. My job as Interim Chair of IDM is to help the department to run smoothly until a new Chair can step into the role and my goal is to do so using the same engagement approaches that I employ in my research.

Over the summer faculty, staff, post-docs and students humored my request for them to use a Jamboard to provide valuable feedback and input into the development of the new IDM Chair position description. A Jamboard is a digital interactive whiteboard developed by Google and is a fun and easy way to allow multiple individuals to contribute ideas. I’m pleased to share that the IDM Chair search committee has been active and that the position announcement is now posted publicly. Co-chaired by Dr. David Finegold (Professor, Human Genetics) and Dr. Lance Davidson from Pitt’s School of Engineering, the search committee is charged by Dean Maureen Lichtveld to identify a Chair who will lead the department into a new era of discovery encompassing pandemic science, climate and health, One Health, and global health. Additional information about the position is available via the application portal using requisition #21006261 at www.join.pitt.edu.

This transition is an exciting time for the department and the school. Our new Dean is committed to supporting the department and to hiring a new IDM Chair that will contribute directly to a reimagined IDM department focus, bringing a dynamic vision of the importance of global public health in the 21st century. The review of Chair applications will begin immediately and continue until the position is filled. Once the top candidates are identified there will several opportunities for faculty, staff, post-docs and students to learn more about them and to provide feedback to the search committee. The desired start date is as early as January 2022, but my guess is that the process may take bit longer. In the meantime, I remain dedicated to supporting you and the department. Please don’t hesitate to contact me directly if you have questions or concerns.
Jessica Burke, PhD  
Interim Chair, IDM  
Associate Dean for Academic Affairs, Office of the Dean  
Professor and Associate Chair, Behavioral and Community Health Sciences  

Jessie Burke wears many hats at Pitt Public Health, one being the interim chair for the Department of Infectious Diseases and Microbiology. Her passion for scholarship and public health is only matched by her appetite for her homemade chili (which she got pretty good at making courtesy of COVID-19).

Q: What are some career highlights you would want new students to know about?  
A: Three overarching aims shape my scholarship: 1) utilizing innovative quantitative and qualitative methods to explore systems and the mechanisms linking context influences and health; 2) engaging communities in the process of research and its translation; and 3) developing tailored interventions to address contextual influences. The 2014 book *Methods for Community Public Health Research: Integrated and Engaged Approaches* (Springer Publishing Company) that I developed and co-edited provides additional details about this agenda and is a career highlight.

Q: What school/department accomplishment or milestone are you most proud of?  
A: One of Pitt Public Health’s original four departments, IDM has for more than three decades been largely defined by outstanding research and public health initiatives against HIV. More recently, the department’s focus has diversified to include other important infectious diseases including Tuberculosis, Influenza, Zika, Dengue, Yellow Fever, Rift Valley Fever, Lyme and COVID-19. Public Health continues to evolve and expand, notably so during COVID19 pandemic, and the department is perfectly positioned to prevent future pandemics by conducting relevant research and training the next generation of infectious disease public health professionals.

Q: What's your favorite mantra/saying/motto/quote?  
A: Whatever you can do or dream you can do, begin it. Boldness has genius, power and magic in it. - Goethe, German poet.

Cynthia M McMillen, PhD, is joining IDM as a Research Assistant Professor (RAP). Dr. McMillen received her BS in biology from West Virginia University (WVU) and proceeded to pursue her PhD in Immunology and Microbial Pathogenesis in the Interdisciplinary Biomedical Sciences Graduate Program at WVU. Here she worked in the Infectious Diseases Transmission Program at CDC/NIOSH, where she studied the effects of environmental factors on aerosol transmission of influenza viruses and developed an anti-influenza therapy based on RNA interference. She spent four years as post-doctoral scholar in the laboratory of Dr. Amy Hartman and will continue her RAP position under Dr. Hartman’s guidance.

Dr. McMillen’s current research focuses on understanding the mechanism vertical transmission of Rift Valley fever virus (RVFV). RVFV is a mosquito-transmitted virus that causes severe disease in ruminant livestock; humans can also contract RVF. Although ruminant livestock and humans share many of the same disease manifestations (hepatitis, encephalitis, ocular disease) of RVF, livestock have an extremely high rate of miscarriages whereas a direct association between RVFV infection and miscarriages has not been described in humans. Dr. McMillen developed the first model of congenital RVF in rats to serve as an intermediate model to study the cellular and molecular mechanism(s) of vertical transmission of humans and ruminants. This model produces still-borne pups with signs of hemorrhaging, necrosis and fetal hydrops, all characteristics of congenital RVF observed in livestock. This model will further serve to understand the host’s immune response to infection and to screen vaccine strains for teratogenic effects or disease protection against RVFV and other related bunyaviruses.
Overall, Dr. McMillen’s research efforts focus on the One Health Approach (OHA) toward understanding infectious diseases. OHA is the understanding that human health is often dictated by the health of animals and the surrounding environment. Having a sound understanding of environmental cues and the transmissibility between arbovectors or other animals to humans is essential for developing interventions that prevent human infections.

Dr. McMillen’s office is located at the Center for Vaccine Research on the 9th floor of BST-3, room 9022. Her office number is (412)-648-2052 and email address is cmm287@pitt.edu.

Velpandi Ayyavoo, PhD

Studying neurodegenerative diseases is complex and quite fascinating. Understanding how HIV-1 affects the brain and results in the development of HAND is the major focus of Ayyavoo’s laboratory. However, it is rather difficult due to the inability to obtain neuronal cells or tissues (neurons, astrocytes) from patients and culture them. One of the approaches is the use of 3D Brain organoids (hBORG) that is very relevant to the physiological conditions and cell lineages observed in the brain. To develop such an organoid model, we used three cell types (microglia, neurons, and astrocytes) that are known to play a critical role in HIV CNS infection and pathology. These cells will be derived from neuronal progenitor cells (NPCs) by various differentiation methodologies that will mimic the adult brain (see figure below showing primary Neurons and Astrocytes developed from NPCs). Using these organoids, Dr. Ayyavoo’s laboratory has shown that hBORG model displays both neuronal and glial characteristics, where cells self-organize in a complex network. Incorporation of HIV-infected microglia into hBORGs (MG-hBORGs) resulted in inflammatory response and induced damage to neurons and astrocytes, major hallmark features seen in the CNS of HIV-1 infected individuals. These studies provide a valid brain-representative in vitro model with improved physiological relevance to understand HIV-induced neuropathologies in people living with HIV (PLWH). Ref: Sci Rep. 2020; 10: 15209.

Figure depicting the intricate structure of differentiated neurons and astrocytes seen in sections (panel B) that are formed inside the brain organoids (panel A).

Dr. Ha’s current R21 NIH funded study focuses on **HIV prevalence and risk among young migrant women workers in the industrial zones in Vietnam**. Over the last three decades, the industrial zones (IZs) in low and middle-income countries have rapidly expanded as global corporations search for the lowest unit cost in production of garments and other products for high-income country markets. In 1986 Vietnam adopted a liberalized economic model that resulted in foreign investment, generating rapid industrialization of the country’s major cities. As a result, hundreds of thousands of rural women migrate to the larger and smaller cities of Vietnam, to work in IZs. However, little is known about their adaptation to living away from their families, and their exposure to sexual and other health risks including HIV. Despite a decrease in overall HIV prevalence in Vietnam (0.3%), HIV remains a concern with an estimated 5200 new HIV infections and 5000 AIDS-related deaths in 2020. Currently, most cases are concentrated among injecting drug users, men who have sex with men and female commercial sex workers, no research exists yet on HIV prevalence among female migrant workers in Vietnam’s IZs. My study will provide empirical results that can be the basis for identifying contributory factors to HIV as well as identifying women migrant workers at risk of HIV, STIs and unintended pregnancy that can be used to develop effective interventions and advocate for improving access to HIV and sexual reproductive services among young migrant women worker to keep them safe while they do essential work in support of their future, their families and the country.

**Dr. Toan has recently become a US Citizen**

– photo take at the Oath Ceremony on October 14, 2021

Becoming citizen of the United States of America is a special milestone in my life. I have realized two dreams. The first one is to study and earn a doctoral degree in in the U.S. in 2004 and the second one is to become a U.S. citizen in 2021. I feel proud, honored and grateful on this long but beautiful journey. I am very honored and proud because I am now a citizen of America, a country that is a beacon of democracy and freedom, and a country that accepts of anyone who comes here with dreams and offers the opportunity to realize their American dreams and make their life better and fuller. I am grateful for American colleagues and friends who offered me the generosity, kindness, love and support during this journey. I am excited to do my rights and responsibilities and play my active role to strengthen American democracy and to make sure that the American dream is alive to everyone. Thank you to all Americans for welcoming me into this great country that is also my country now.

- **Toan Ha, PhD**
Mackey Friedman, PhD, MPH

Dr. Friedman was awarded an R01 from the NHLBI
Project Period: 09/21/2021 – 08/31/2026

“Stigma and the non-communicable disease syndemic in aging HIV positive and HIV negative MSM”

ABSTRACT

The non-communicable diseases diabetes, hypertension, and dyslipidemia are highly prevalent among people living with HIV (PWH), especially among multiply marginalized populations such as racial/ethnic minorities. We will study how intersecting stigmas contribute both directly and indirectly to the incidence, prevalence, and control of this comorbidity cluster in a diverse cohort of HIV positive and HIV negative sexual minority men. Our findings will provide valuable data for health providers, public health researchers, and policymakers to more effectively intervene across the complex pathways between marginalized social position, stigma, psychosocial health, and non-communicable disease outcomes.

Robbie Mailliard, PhD

“Developing Dendritic Cell-based HIV ‘Kick and Kill’ Immunotherapy Strategies”

Since arriving in our department in 2009, Dr. Mailliard has been utilizing his background in cancer immunotherapy toward the development of new immunotherapeutic approaches to chronic HIV infection. Dr. Mailliard is co-developer and primary author of the first report describing the clinically applicable type-1 polarized dendritic cell (αDC1 or MDC1) vaccine platform. This DC-based cellular vaccine strategy has been explored successfully in numerous clinical trials to treat different forms of cancer, and he is currently using this approach to develop an all-in-one therapy designed to both ‘kick’ latent HIV out of hiding and to effectively ‘kill’ those infected cells harboring the virus. While the idea of utilizing dendritic cells (DCs) as an HIV immunotherapy is not new, novelty of Dr. Mailliard’s strategy is based on a few basic concepts. First, the DCs used by his group have special properties, including their unique responsiveness to ‘helper’ signals provided by CD4+ helper T cells, the cell type infected by HIV. When the MDC1 interact with helper T cells, they become hyper activated, produce high amounts of IL-12, and acquire a superior capacity to transfer their cargo to other DCs and to induce cytotoxic T cell (CTL) responses. Second, his group implements the use of CMV antigen in their vaccine strategy in addition to HIV antigen, with the hypothesis that a large portion of the HIV infected CD4+ T cells will have antigen specificity this common member of the herpes virus family. By specifically activating these particular cells, it is their hope that they will wake up the latent virus they may contain, so that these cells can be effectively recognized and targeted by the CTL. And finally, his vaccine strategy is focused on inducing CTL that will target the regions of HIV that are most critical to for the capacity of the virus to function and reproduce, where mutations would be detrimental to the fitness of the virus.
Progress made on these DC-based studies, which collectively include the published work of his former IDM PhD students Dr. Jan Kristoff (IDM 2019), Dr. Colleen Zaccard (IDM 2016), former IDM Post-doctoral Fellow Dr. Mariana Palma (IDM 2017), former IDM Research Assistant Professor Dr. Tatiana Garcia-Bates (2019), and current IDM PhD student Renee Anderko has resulted in his lab obtaining NIH R21 (AI131763) and R01 (AI152655) funding, and a grant from CRDF GLOBAL, Indo-U.S. Joint Program on HIV/AIDS Research (#65333). Dr. Mailliard’s ongoing ‘Kick and Kill’ studies continue in close collaboration with Drs Charles Rinaldo, Nic Sluis-Cremer, Alok Joglekar, and Moses Bility, with a clinical trial currently in development under the direction of Dr. Alberto Duarte in São Paolo Brazil.

References

Using Technology to Provide Clinician Education and Improve HIV Care: The MidAtlantic AIDS Education and Training Center (Part F: AIDS Education and Training Centers)

The MidAtlantic AIDS Education and Training Center (MAAETC), a HRSA RWHAP Part F–funded recipient, is located at the University of Pittsburgh, with regional partner AETCs in Delaware, the District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia. Through live webinars, on-demand clinical consultations, virtual didactic and interactive trainings, preceptorships, and coaching, MAAETC provides clinical education and training to health care providers on HIV transmission, prevention, treatment, and care. This critical education is available to RWHAP providers—including physicians, physician assistants, nurses, dentists, pharmacists, and social service workers—and non-RWHAP clinicians who work in hospitals, clinics, and community-based settings across the mid-Atlantic region. In addition, MAAETC also is playing a vital role in educating the next generation of health care providers about HIV clinical care and the psychosocial, culturally responsive, health equity, and inclusion issues surrounding HIV by training faculty in health professional schools.

Engaging in High-Priority Activities to End the HIV Epidemic
MAAETC currently is engaged in several high-priority activities specifically geared toward ending the HIV epidemic. One of these activities involves capacity building to help clinicians and other providers effectively deliver the latest HIV medications to their patients. Dr. Linda Rose Frank, MAAETC Director at the University of Pittsburgh School of Public Health, explained that MAAETC focuses on “making sure that [health care providers] have the skills and the knowledge to offer HIV testing, initiate rapid start of antiretroviral therapy [ART], and … identify people who are candidates for pre-exposure prophylaxis [PrEP].” MAAETC also runs an Ending the HIV Epidemic in the U.S. workgroup in collaboration with regional partners. According to Ingrid Godfrey, Distance Learning Specialist at MAAETC, “We really work closely with our regional partners to develop new trainings, new communities of practice, and really share ideas. It’s been great to increase that collaboration, even during the pandemic,
through virtual meetings.” In addition, MAAETC conducts a webinar series focused on ending the HIV epidemic and has reorganized its online content according to each of the four pillars—Diagnose, Treat, Prevent, and Respond—in the federal *Ending the HIV Epidemic in the U.S.* initiative.

Another priority effort is the delivery of regularly scheduled webinars with input from the U.S. Public Health Service Region 3 Mid Atlantic Training Centers for Health and Human Services (MATCHHS) on intersecting epidemics, such as HIV, hepatitis, STIs, and substance use disorders. The webinar series involves partnerships with organizations outside of AETCs, such as the STD/HIV Prevention and Training Center at Johns Hopkins University, the Central East Addiction Technology Transfer Center, the Mental Health Technology Training Center, the Prevention Technology Transfer Center, and the Mid-Atlantic Regional Public Health Training Center.

**Learner Education and Practice Portal**

Over the last decade, MAAETC has developed and implemented LEAPP, a major innovative effort used by MAAETC, regional partners, and other AETCs to monitor, support, and improve the quality of their HIV education and support services. The LEAPP platform initially was developed as a tool for accessing MAAETC data on the number and types of providers trained and the impact of trainings for the purposes of evaluation, follow-up, and funding applications. “I think that the important thing about LEAPP is that it is built specifically for the AETC,” said Susan Winters, Data Manager for MAAETC, “so we are able to capture the data exactly how we need to and report it exactly how we need to.”

Since its inception, however, LEAPP has continued to evolve and expand. Winters explained, “We keep adding new features—things that we think will be beneficial to our trainees and to us to run our programs.” For example, MAAETC staff quickly realized that, in addition to data collection, an online platform like LEAPP could be used to provide an online community of practice for providers receiving MAAETC training and education. As a result, MAAETC currently uses LEAPP to convene communities of practice and facilitate interaction among health care providers at practice transformation clinics, partner organizations, and other agencies and programs. Frank explained that these communities of practice extend beyond information sharing because “Information doesn’t necessarily change practice. … We talk about particular issues that they’re having that need to be addressed so that people get not just information, but technical assistance and consultation about real problems that they’re having right now.”

MAAETC also works closely with its regional partners to set benchmarks for meeting their goals, which is important for the success of their activities. According to Winters, “We do a deeper dive into what all that means and how we’re going to do it, and so we all work together to come up with those benchmarks.” MAAETC has an overall work plan in which partners benchmark activities and tasks they have in common. According to Frank, “[Regional partners] can go onto LEAPP and look at their own data to see where they are in meeting their goals, as well as [other] regional partners’ [goals]. So, that goes back to the issue of quality management—not just quality management for the training but meeting our goals for our cooperative agreement.”

**Demonstrating Resilience During the COVID-19 Pandemic**

As the COVID-19 pandemic unfolded, MAAETC recognized the need for providers to rapidly learn how to manage COVID-19 and HIV simultaneously. In response to this need and with FY 2020 CARES Act funding, MAAETC quickly developed and implemented a robust training initiative on COVID-19 and HIV and now conducts a webinar series on this topic. Frank estimated that MAAETC has conducted at least a dozen webinars on COVID-19 and HIV since May 2020.

The content of the webinar series largely has been guided by feedback obtained through a needs assessment specifically focused on issues related to COVID-19 and HIV care. “We’ve been doing an ongoing needs assessment of our trainees on what they want to know,” explained Frank. The needs assessment also revealed that providers needed strategies for improving the resilience of their staff during the pandemic. In response to this finding, MAAETC began offering webinars on HIV and COVID-19 that addressed such questions as, “How do you
support and [teach] self-care for those health care providers that are in the field doing this work?” explained Frank. Topics of this webinar series also have included basic pathogenesis of COVID-19, health care worker self-care and stress management, and COVID-19 vaccine basics.

In addition, MAAETC has conducted virtual ad hoc technical assistance sessions with groups and individuals throughout the pandemic, often connecting those they assist with federal training centers outside AETC program (e.g., STI and public health training centers and addiction technology transfer centers). “I think one of the things the AETC does is it says, ‘You are so important. You don’t have to come to us; we’re going to come to you,’” said Frank, “and so, what we’ve done in the past year is to pivot, to come to them through distance-based technology, which I think works very well,” adding that much of the MAAETC work “will never quite be the same after COVID-19, because this distance base has changed everything, and it’s facilitated a lot of things that didn’t happen before.”

FY 2020 CARES Act funding has been an important factor in ensuring the resilience of the MAAETC efforts during the COVID-19 pandemic. In addition to supporting the COVID-19 and HIV webinars, FY 2020 CARES Act funds have been used to develop materials, offer virtual technical assistance and consultation on patients, deliver virtual didactic training, and strengthen and structure clinical services for people with COVID-19 and HIV.

### Key Successes and Lessons Learned

Despite the barriers posed by the COVID-19 pandemic, MAAETC succeeded in conducting more than 1,200 events involving more than 19,500 participants in 2020. Dr. Linda Rose Frank noted, “We’ve been looking at our data on the FY 2020 CARES Act funding, and we’ve seen the number of health care providers that come to our webinar series—not just on COVID-19 but the other ones—increased dramatically.” The number of participants in MAAETC events nearly doubled from 5,498 during the second half of 2019 (July 1–December 31) to 10,487 during the same period in 2020.

The LEAPP platform has played an important role in facilitating participation in MAAETC activities by supporting online interaction of workgroups and outreach to audiences during the pandemic. LEAPP also can be credited, in part, with MAAETC’s resilience during the pandemic because it made so many more resources virtually available and shareable. Ingrid Godfrey noted that LEAPP allowed communities of practice to interact regularly to discuss challenges and successes in carrying out their work during the pandemic. “We’ve had a few new [communities of practice] pop up since spring. … We have at least 25 communities of practice going on right now; some of them meet quarterly and some meet monthly, and they’ve definitely increased over the past year.” Susan Winters added that LEAPP provided access to forms, procedures, templates, and other resources necessary to perform AETC work, which was critical to the continued functioning of MAAETC during the pandemic.

LEAPP has facilitated another MAAETC success—continuous quality improvement of education and training services—because quality improvement is dependent upon a strong system of data collection, management, and analysis. “As a clinician, I always think about quality management. LEAPP becomes a way of doing quality management with our project, and it informs what we do, it informs where we’re going, it informs us to take corrective action for things that may not be going as well as they should be and really to improve our operation,” said Frank.

Some of the benefits of LEAPP include functionality that makes data entry faster and more accurate, a portal that links to the AETC central office and regional sites, tools for tracking user uptake, and modifiability that allows the system to be expanded and changed as needs evolve. These capabilities have resulted in the New England AETC’s also adopting LEAPP.

In addition to LEAPP, a key success for MAAETC has been its partnerships. MAAETC has several regional partners, including the Health Federation of Philadelphia at Drexel University, Howard University, Johns Hopkins University, the University of Maryland, Virginia Commonwealth University, West Virginia University, ChristianaCare, and Inova Health System. “We’ve got so many talented people in our MidAtlantic AETC,” Frank noted, emphasizing the importance of the partnerships. “[Regional partners] bring to the table their own set of skills and assets.” Frank explained that one of the advantages of having the regional AETC partners is that they bring the unique resources of their institutions. “You can’t put a price tag on that. We can call up an expert on hepatitis in the next hour and get the needed information.” A key partner outside of Region 3 is the National Clinician Consultation Center at the University of California, San Francisco, which offers many warmlines, call-in interfaces for clinicians that provide information on numerous HIV-related topics; medication-assisted therapy for people with substance use disorders; and a perinatal transmission prevention program.

According to Frank and Godfrey, another valuable accomplishment of MAAETC was the development of pocket guides on a variety of topics for health care professionals. The most recent guides focus on HIV screening recommendations for transgender women and men and on routine HIV testing across states in the region, including testing for adolescents, women, and those with substance use disorders.

MAAETC also learned several important lessons from the process of developing and implementing LEAPP and from its efforts to adapt to the COVID-19 pandemic. The improved data management capabilities that LEAPP brought to MAAETC highlighted the importance of data for continual improvement of education and training services. “You know, now we talk a lot about precision public health, and that means using the data that we have to guide what we do,” explained Frank. “So, getting direct input from providers, using our data, conducting evaluations, and engaging in a serious look at this information we collect—not just collecting it, but analyzing it.”

A key lesson from the COVID-19 pandemic was, ironically, the importance of in-person outreach and interaction. Frank noted, “We’re doing more telehealth, such as consultations and technical assistance via the Internet, but there’s nothing like going and sitting down with a health care team in the field to know what they’re dealing with on an everyday basis and trying to figure out how we can actually help them.” Godfrey concluded that, “Perhaps the most important lesson is listening to and collaborating with partners and the audiences we serve as we are constantly listening, getting feedback, and improving our programming and reach.”
IDM Announces 2021/22 Bob Yee Public Health Scholarship Recipients

Instituted in 2004 to recognize academic excellence among incoming Master of Public Health and Master of Science students, the IDM Bob Yee Public Health Scholarship has again been awarded to three new master’s level students. The scholarship is based on academic merit which includes undergraduate grades and Graduate Record Examination scores. The student’s letters of recommendation are also reviewed during the selection process. This year’s recipients are:

Rebecca Boan (MS)

- **Undergrad:** Northwestern Arizona University
- **Major:** Biology
- **Hometown:** Phoenix, AZ
- **Hobbies:** archery, crocheting, working with animals

Samhita Ravi (MPH-PEL)

- **Undergrad:** University of Pittsburgh
- **Major:** Microbiology
- **Hometown:** South Brunswick, NJ
- **Interests:** basketball, running, going on hikes

Diana Bellino (MPH-MIC)

- **Undergrad:** University of Illinois at Chicago
- **Major:** Public Health
- **Hometown:** Hanover Park, IL
- **Interests:** cooking, painting/crafting, anything outside

Support for this scholarship is provided by the Bob Yee Fund in the department. Donations to this fund can be made by personal check to the University of Pittsburgh, subscript “The Bob Yee Fund”, and sent to: University of Pittsburgh, Graduate School of Public Health, Attn: Ms. Judy Malenka, 2127 Public Health, 130 DeSoto Street, Pittsburgh, PA 15261. Contact Ms. Malenka with questions at: 412-624-1637 or email: jmalenka@pitt.edu
Monica Tomaszewski, PhD, 2008 IDM Graduate.
Since Monica graduated from IDM, she's mostly spent time fixing things. She went to ThermoFisher to work in the Cellular Imaging and Analysis division, where she spent time supporting and designing instrumentation for drug discovery (high content imagers and cytometers). She probably spent more time in computer and engineering labs than biology labs, and for some reason management thought it was a good idea to let her play with lasers. This time resulted in several patents, some world-wide travel, publications, becoming ASCP certified in cytometry and a MS in Engineering Management.

When Thermo closed the site in Pittsburgh, Monica decided to work on the other side of drug discovery and joined a local lab (Sharp Edge Labs) that looks for drugs to remedy genetic diseases. Monica spends time identifying amenable diseases & targets, designing and running screening campaigns, and dealing with chemists.

During the quarantine, Monica designed new labs and coordinated a company move. She also completed certifications in Data Analysis and Analytics from both Columbia and The London School of Economics & Political Science. She was also recently heard on NPR's Morning Edition and podcast "The Indicator" talking about the impact of consumable shortages on scientific research.

In her minimal spare time, Monica still reads 3 books a week, is working on becoming fluent in German, and likes to see live music with her partner John. She lives in Dormont with her Siamese cats, Carwyn and Cicely.

Shauna Clark, PhD, 2008 IDM Graduate
After almost 10 years of teaching postbacs and med students about health disparities and helping to diversify trainees at NIH, Shauna has recently accepted a promotion. She is now the inaugural Scientific Diversity Advisor to the Director of the NCI Cancer Center Research. This basically means that she is in charge of diversifying faculty at NCI and helping to ensure that they maintain an inclusive intramural culture aligned with NIH's mission.

Shauna and her husband have just purchased a new home and are currently in the process of moving (which she hates). Shauna says, “Now our favorite girl Pepper has a huge backyard to chase squirrels and whatever else she feels like.”

Jill Henning, PhD, 2008 IDM Graduate
Jill has been teaching at Pitt-Johnstown since 2009. She is an associate professor of biology and the undergraduate research coordinator for the Johnstown campus. Jill will be applying for full professor this Fall. Most recently she’s been working to educate the public on COVID-19 by starting a non-profit, In This Together Cambria, with other concerned residents. She is still publishing with Dr. Frank Jenkins, continuing the work she began with him as a doctoral student in his lab. She involves her students in research on Lyme disease and was recently asked to serve on the Pa Lyme disease board.

Along with her son Jackson, who is 10 y.o., are enjoying hiking and camping in the Laurel Highlands.
**Heather Hensler, PhD, 2008 IDM Graduate**

started working at Moderna as a field medical director back in December.

Heather also got married last summer and she now lives in Madison, WI with her husband, son and 2 cats.

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**Hui (Debra) Cen (IDM ’91)** is a biologist, biotech entrepreneur, Rotarian and social entrepreneur. In 1986, she came to Pitt’s Graduate School of Public Health from China to pursue her doctorate in infectious diseases and microbiology. After receiving her PhD, she continued biomedical research at the National Institutes of Health, the University of California, San Francisco and Chiron. In 1998, Cen became a biotech entrepreneur and co-founded several biomedical research reagent companies, including SABiosciences, which was acquired by Qiagen.

In 2013, Cen expanded into social entrepreneurship, co-founding the non-profit WizChinese, which connects Chinese immigrant communities and facilitates integration and giving back to the community. She also started Inkynd, a philanthropic online marketplace that connects donors, buyers, causes and non-profits.

Cen’s latest initiative is a program to match successful Chinese immigrant volunteers and mentors with educational and financial literacy programs serving underprivileged communities.

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**First Year’s and Continuing IDM Students met up for a Pittsburgh Pirate Game this past Summer – A good time was had by all.**
In May 2021, **Claire McCreavy** graduated from IDM with an MPH in Infectious Disease Management, Intervention, and Community Practice and a Certificate in Evaluation of Public Health Programs. During her time in IDM, she served as a Student Representative for the MPH Committee and a research assistant for the Pittsburgh Vaccination Research Group. Claire’s MPH practicum was originally planned to take place in Uganda, but the COVID-19 pandemic provided her remote opportunities with Pitt’s Models of Infectious Disease Agent Study and Shots Heard Round the World. In addition to her studies and research, she was a Pittsburgh Schweitzer Fellow for 2020-2021.

Currently, she is ORISE Fellow at the CDC in the Office of Laboratory Science and Safety doing health communications work. Her Master’s thesis, “Readability, Suitability, and Content Evaluation of Initial, Online Masking Guidance from U.S. States during the COVID-19 Pandemic” will be published shortly in the *American Journal of Health Education*. Claire comments, “I am so thankful for IDM, my advisors, and friends for all the support and mentorship throughout graduate school!”

**Rachel Poad** was a member of the Jenkins lab located at the Hillman Cancer center. Her research is focused on human herpesvirus 8 and its relationship with Kaposi’s Sarcoma. She is also the Student Ambassador of IDM and has enjoyed talking with perspective and current students.

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**Dean’s Day Competition**

**April 5-7, 2021**

**IDM Departmental Awards**

**Masters Category:** Claire McCreavy ’21

**Doctoral Category:** Alex McPherson ’24
And the Award Goes To ……

Virtual IDM Annual Research Day
March 12, 2021

PhD Presentations

First Place (tie): Abigail Gerberick
"Impact of B Cell-Mediated Trans Infection of Naïve CD4+ T Cells on the HIV-1 Reservoir"

First Place (tie): Nicole Grant
“Investigating Dynamics in Granuloma Cellular Composition and Function in Tuberculosis”

Second Place: Priyanka Talukdar
“Type III Interferons are Expressed in TB Granulomas & Promote Inflammatory Phenotypes in Macrophages that Differ from Type I Interferons”

Third Place: Renee Anderko
“NK Cell Memory Hinders Help in DC-Mediated Cellular Immunity”
And the Award Goes To ……

**MS Presentations**

First Place: **Emerson Boggs**  
“Cellular Localization of Host Factors Involved in HIV-1 Uncoating”

Second Place: **Alyssa Jespersen**  
“Antimicrobial Peptides Negatively Affect Growth of Mycobacterium Tuberculosis and Mycobacterium Bovis”

Third Place: **Amy Kinzler**  
“Human Adenovirus in Children in the New Vaccine Surveillance Network (NVSN)”

**MPH Presentations**

First Place: **Marina Levochkina**  
“Temporal Dynamics of Neutrophil-to-Lymphocyte Ratios & Infections after Traumatic Brain Injury”

Second Place: **Sharlay Butler**  
“The Color of COVID: Racial and Ethnic Disparities in Mortality Due to COVID19 in the UPMC Health System”

Third Place: **Shekinah Hudson**  
“Effect of Risk-Factors Comorbidities, and Personal Characteristics on Severity and Prognosis”
PhD

Shivkumar Biradar, “Elucidating the Roles of αβ and γδ T Cells in HIV Infection”
Advisor: Dr. Robbie Mailliard

Roberta Dos Reis, “Understanding HIV-1-Neuropathogenesis Using 3D Brain Organoids: Role of Host and Viral Factors in Neuronal Dysregulation”
Advisor: Dr. Velpandi Ayyavoo

Henry Ma, “Radiofrequency Telemetry and Immunologic Correlates as Predictors of Acute Inhalational Alphavirus Infection in a Nonhuman Primate Model”
Advisor: Dr. Doug Reed

Samantha Sanford, “Mechanisms of Telomerase Inhibition by Oxidized and Therapeutic dNTPs”
Advisor: Dr. Patrick Opresko

MS

Emerson Boggs, “Characterization of HIV-1 Capsid-Binding Host Proteins During Infection”
Advisor: Dr. Zandrea Ambrose

Daniel Evans, “Genomic Epidemiology of Horizontal Plasmid Transfer Among Healthcare-Associated Bacterial Pathogens in a Tertiary Hospital”
Advisor: Dr. Daria Van Tyne

Alyssa Jespersen, “Engineered Cationic Antimicrobial Peptides Differ in Their Ability to Limit in vitro Growth and Viability of Mycobacterium bovis BCG and Mycobacterium Tuberculosis”
Advisor: Dr. Josh Mattila

Amy Kinzler, “Human Adenovirus in Children with Acute Gastroenteritis in the New Vaccine Surveillance Network (NVSN)”
Advisor: Dr. John Williams

Naveen Suresh Babu, “Neuroprotective Micro RNA’s as a Potential Therapeutic for HIV-Associated Neurocognitive Disorder”
Advisor: Dr. Velpandi Ayyavoo

MPH-MIC

Sharlay Butler, “Integration of Oral HIV Pre-Exposure Prophylaxis into Ambulatory Reproductive Care for Cisgender Women: A Scoping Review and Development of an Evidence-Based Implementation Strategy”
Advisor: Dr. Linda Frank

Advisor: Dr. Sarah Krier

Claire McCreavy, “Readability, Suitability, and Content Evaluation of Initial, Online Masking Guidance from U.S. States During the COVID-19 Pandemic”
Advisor: Dr. Sarah Krier
Annette Curry, “Allegheny County Health Department: Vector Control Program Summary & Community Outreach and Education Plan”
Advisor: Leah Lamonte

Kristen Eggles, “Understanding the Impact of Alcohol Use Disorder in Russian Federation’s Tuberculosis Patients”
Advisor: Dr. Josh Mattila

Cameron Green, “A Review of Literature Measuring Years of Life Lost Due to COVID-19: The Search for Comorbidity Inclusion”
Advisor: Dr. Linda Frank

Shekinah Hudson, “The Epidemiology of COVID-19 Disease Progression at UPMC Mercy Hospital: Effects of Risk Factor Comorbidities and Person Characteristics on Severity and Prognosis”
Advisor: Dr. Mohamed Yassin

Taylor Keck, “A SARS-CoV-2 Outbreak Investigation: Two Rehabilitation units in a Pennsylvania Tertiary Care Facility”
Advisor: Dr. Mohamed Yassin

Marina Levochkina, “Neutrophil-to-Lymphocyte Ratio Associations with Nosocomial Infection and Non-Neurologic Organ Dysfunction in Moderate-to-Severe Traumatic Brain Injuries”
Advisor: Dr. Jeremy Martinson

Cristina Perrotta, “Evaluation of HIV Status as a Risk Factor for COVID-19 Infection: A Combined Cohort Study”
Advisor: Dr. Jeremy Martinson

Mariana Benitez Moreno, “CG Dinucleotide Codon Removal Improves Expression of HIV-1 Reporter Viruses in Humanized Mice”
Advisor: Dr. Zandrea Ambrose

Christina Martins, “Glycolysis Inhibition Induces Functional and Metabolic Exhaustion of CD4+ Cells in Type 1 Diabetes”
Advisor: Dr. Jon Piganelli

Jennifer Bowling, “Uncovering Correlates of Protection of Attenuated F. tularensis Vaccines”
Advisor: Dr. Douglas Reed

Nicole Grant, “Defining the Temporal and Immunological Dynamics of Adaptive T Cell Responses in Tuberculosis Granulomas”
Advisor: Dr. JoAnne Flynn
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