Greetings!

As 2020 ends, this newsletter shares with you almost 2 years of updates and information from all aspects of our department. These vary from the many outstanding accomplishments of our graduate students, postdoctoral fellows and faculty members, including breakthrough discoveries on several infectious diseases, to critically important public health initiatives in the HIV/AIDS and COVID-19 pandemics. We also introduce you to our three new IDM faculty members.

The COVID-19 pandemic has shown the public how important infectious diseases are to their lives. You will see in this newsletter how IDM has met the challenge of this extraordinary public health crisis. I am proud that we have added a new chapter to our department’s 70-year history of combating public health threats caused by poliovirus, dengue virus, influenza virus, HIV, and now, SARS-CoV-2.

As I write this, the United States has reached over 280,000 deaths due to COVID-19 pandemic. To refocus this public health tragedy with hope for the future, I am reminded of how Dr. Jonas Salk’s “Pittsburgh vaccine” stopped the annual wave of poliovirus epidemics in the 1950s. Prior to that vaccine, in 1952 there were over 50,000 cases of poliovirus infection in the United States, of which approximately 3,000 people died and 21,000 were paralyzed. President Harry Truman’s words in 1946 fit well with today’s COVID-19 pandemic: "The fight against infantile paralysis cannot be a local war. It must be nationwide. It must be total war in every city, town and village throughout the land. For only with a united front can we ever hope to win any war." With the additional success of the oral Sabin vaccine in the 1960s, the poliovirus epidemic was controlled - there have not been any poliovirus cases originating in the United States since 1979.

Our best wishes go out to you and your loved ones for 2021. Please stay safe.

Sincerely,

Charles R. Rinaldo, PhD
IDM COVID-19 News

As we celebrate Thanksgiving this year, we are deep in the throes of the COVID-19 pandemic. Indeed, our department’s mission positions us at the epicenter of basic and public health research on the pandemic. I am sending this note to highlight the important research that our IDM faculty, postdoctoral fellows, graduate students, and laboratory and clinical staff are doing to combat the pandemic.

This research establishes the foundation of the scientific approach of our department in understanding and combating SARS-CoV-2 infection. It includes our approach to understanding person-to-person virus transmission and modes to prevent this, deciphering the numerous, complex pathogenic effects of the virus, and most importantly development, acceptance and effectiveness of vaccines for preventing the infection and ultimately controlling the pandemic.

These studies are led by several IDM faculty and include many of our IDM graduate students, postdoctoral fellows and staff as detailed below.

MidAtlantic AIDS Education and Training Center Receives $400,000 in CARES Act Funding to support efforts to prevent or minimize the impact of the COVID pandemic on persons with HIV

Dr. Linda Rose Frank (Prof, IDM) and principal investigator of the MidAtlantic AIDS Education & Training Center (MAAETC) has been funded $400,000 for 2020-2021 by HRSA, HIV/AIDS Bureau from the CARES Act to prevent, prepare for, and respond to coronavirus disease 2019 (COVID-19) and the consequences of the pandemic on persons living with HIV.

The $400,000 is part of the $90 million awarded by the Department of Health and Human Services on April 15, 2020 for COVID-19 response through the fiscal year 2020 Coronavirus Aid, Relief and Economic Security (CARES) Act. This funding is particularly important to health care providers serving persons with HIV as they are immunocompromised and may put them at increased risk for COVID 19. Strategies are needed to increase HIV and COVID-19 testing, prevention, and treatment.

The MAAETC has increased its capacity to offer weekly distance-based training and offer technical assistance to quickly and efficiently reach health care providers throughout Region 3 of the US Public Health Services along with its regional partners at universities in Pennsylvania, West Virginia, the District of Columbia, Maryland, Virginia and Delaware with new prevention and treatment strategies as they are developed on the COVID 19 pandemic and the intersection with the HIV epidemic. For information, please see www.maaetc.org or call 412-624-1895 for list of training programs and to schedule technical assistance.
Dr. Amy Hartman is developing a non-human primate model for COVID-19

Since the beginning of the pandemic, the Center for Vaccine Research has been working on the characterization of primary isolates of SARS-CoV-2 (published in Klimstra et al. JGV 2020) and development of several animal models for COVID-19, including ACE-2 transgenic mice and hamsters, ferrets, and African Green monkeys. Dr. Amy Hartman (Assistant Prof, IDM), whose lab is based in the CVR, has been focused on African Green monkeys, and we published the first detailed pathogenesis study of AGMs after aerosol and mucosal exposure to a primary isolate (published in Hartman et al. PLOS Pathogens, 2020). While the animals developed mild clinical disease, they found that infectious virus was shed from both the respiratory and gastrointestinal tract for weeks after infection. They also found that lung lesions were detectable using human clinical grade PET-CT imaging, thus facilitating the use of PET/CT in evaluation of vaccines and therapeutics. They are currently evaluating several formulations of a measles-vectored SARS2 vaccine (one made by Merck, the other out of the Serum Institute of India) in the African green monkey model.

Recent published works:


Dr. Toan Ha is studying the social and behavioral effects of the COVID-19 pandemic

Dr. Toan Ha (Asst Prof, IDM) has two new research projects on COVID-19. The first study was funded by the University of Connecticut’s Institute for Collaboration on Health, Intervention, and Policy (InCHIP). The aims of this study were: 1) Assess the knowledge, attitudes and behaviors related to COVID-19 among the various subpopulations in Connecticut during the early phase of COVID-19 pandemic; 2) Identify gaps in health communication and
services responses to COVID-19 and provide information for the multi-level organizations to advocate for needs and structure services for various subpopulations in Connecticut during and after the shutdown. The participating subpopulations included Hispanics, African Americans, Southeast Asians, people with developmental disabilities, LBGTQ, persons living with HIV, seniors in public housing, opiate and intravenous drug users and members of the Muslim community. The second study addresses health professionals’ exposures to COVID-19. The specific aims of this study were to assess healthcare professionals’ experiences in COVID-19 exposures and identify effective public health strategies and interventions to protect healthcare professionals from COVID-19 risk exposures and similar pandemics in the future.

**Study title: Knowledge, attitudes and behaviors related to COVID-19 among Connecticut residents during the early phase of COVID-19 pandemic.** PI: Toan Ha¹ & Stacey Brown²; Co-Is: Stephen Schensul² and Judy Lewis² (¹University of Pittsburgh Graduate School of Public Health; ²UConn School of Medicine)

**Study title: Health Professionals’ Risk Exposures and Concerns to COVID-19**
PI: Hellen Wu¹; Co-Is: Toan Ha², Narinder Maheshwari¹, Eric M. Mortensen¹; Varalakshmi Niranjan¹
¹UConn Health; ²University of Pittsburgh Graduate School of Public Health

**Recent published works and preprints:**
3. Toan Ha, Gualberto Ruano, Judy Lewis. Comparison of epidemiological characteristics of COVID-19 patients in Vietnam. meDxiv 2020.06.03.20121467.https://doi.org/10.1101/2020.06.03.20121467 (Preprint)

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**Drs. Simon Barratt-Boyes and Yue Chen are using a unique and novel human lung model for studies of SARS-CoV-2 pathogenesis**

**Dr. Simon Barratt-Boyes (Prof, IDM)** and lab are studying the effect of SARS-CoV-2 infection on human lung by working with precision cut human lung slices from non-transplantable lung specimens. Our goal is to define the pathways of cell death and tissue damage to inform therapies that will prevent severe disease. This work is funded by an NIH supplemental grant.

In collaboration with Dr. Sally Wenzel in EOH, Drs. Barratt-Boyes and Yue Chen (Assoc. Prof, IDM) are studying the effect of SARS-CoV-2 infection on human bronchial airway epithelial cells in patients with asthma. The ultimate goal of this study is to development of targeted therapeutics to diminish the local and systemic responses to SARS-CoV-2 in asthma. The work in the Barratt-Boyes lab is being led by postdoctoral fellows Priscila Castanha, PhD and Benjamin Treat, PhD, and Gwenddolen Kettenburg, MS (IDM, 2020). This study is funded through a Developmental Grant from the CTSI at the University of Pittsburgh. Ms. Arlene Bullotta, IDM Research Technologist, assists Dr. Chen.
Dr. Ernesto Marques is developing unique serologic assays to study antibodies involved in SARS-CoV-2 clinical outcomes

Dr. Ernesto Marques (Assoc. Professor, IDM) is applying his experience in T-cell based vaccine development to the development of serological diagnostic tools and on clinical epidemiological studies of COVID-19. With funding from Pitt CTSI, he is developing novel assays for detecting and analyzing immunoglobulins directed against the virus and their effect on clinical outcomes. This project studies the impact of antibodies and complement activation due to common cold coronaviruses – NL63, 229E, HKU1 and OC43 - on acute clinical outcomes of SARS-CoV-2 infection. In order to conduct this project, he has developed serological assays to detect IgG, IgA, and IgG3 against SARS-CoV-2 RBD, S1 and N proteins as well as assays to detect antibodies against CCC.

Dr. Marques also leads a CoVPN 5002 Community Prevalence of SARS-CoV-2 (COMPASS) Study funded by the NIH to assess the prevalence and incidence using time-location sampling of SARS-CoV-2 infection in disadvantaged, hard to reach communities in Pittsburgh. The determination of the seroprevalence in Allegheny County will help identify populations at greater risk and prioritization of COVID-19 vaccine implementation.

Related publication
Coronavirus Disease 2019: Understanding Immunopathogenesis Is the “Holy Grail” to Explain Why Children Have Less Severe Acute Disease. VS Lanziotti, DC de Souza, ETA Marques. Pediatric Critical Care Medicine 21 (11), 1022

Dr. Sarah Krier and Dr. Mack Friedman are investigating how the COVID-19 pandemic is affecting the lives of people living with HIV

Dr. Krier (Asst. Prof, IDM) and Dr. Friedman (Asst. Prof, IDM) are analyzing the beliefs and attitudes of several thousand HIV-infected and uninfected men and women enrolled in the NIH-sponsored MACS-WIHS Combined Cohort Study (MWCCS), with 13 sites across the United States: https://statepi.jhsph.edu/mwccs/

Recent MWCCS COVID-19 publication:
Dr. Charles Rinaldo (Prof. and Chair, IDM) and Dr. Jeremy Martinson (Asst. Prof, IDM) are leading a new study on vaccine acceptance and effectiveness in men and women with HIV

Drs. Rinaldo and Martinson are currently establishing a comprehensive study on vaccine acceptance and effectiveness of the new, forthcoming vaccines for preventing COVID-19 in men and women with HIV infection as part of their NIH-sponsored MWCCS grant. Together with IDM faculty members Drs. Mack Friedman, Sarah Krier, Ernesto Marques, Robbie Mailliard, Paolo Piazza, Giovanna Rappocciolo and Yue Chen, and secondary IDM faculty members Drs. Bernard Macatangay and Nicolas Sluis-Cremer, this large study will begin before the availability of new, commercial COVID-19 vaccines to the public. The research includes extensive studies of immunoglobulins, B cells and T cells directed against the virus, and circulating inflammatory cells and proteins, and is being assisted by IDM laboratory technologists Ms. Arlene Bullotta and Ms. Kathy Kulka, Pitt MWCCS Project Director Ms. Alissa Eugeni, and Grants Manager Ms. Gloria Lee.

Dr. Peter Salk, president of the Jonas Salk Legacy Foundation and professor of IDM, advises on how modern vaccines for COVID-19 can learn from the Salk poliovirus vaccine experience

Dr. Peter Salk, President of the Jonas Salk Legacy Foundation and Professor of IDM, spoke at a recent Pitt symposium on "Rolling out a Vaccine for COVID-19: Present Prospects and Lessons from the Past." He is optimistic about a COVID-19 vaccine, being careful to note how we must do the necessary clinical work and not rush it out to the public. The full video of this event is available at: https://www.pittwire.pitt.edu/news/experts-discuss-vaccine-covid-19
Helping the cause: $1,225,641 NIH-NIAID grant awarded for the “Clinical evaluation of SARS-CoV-2 subunit vaccine in a Phase I human clinical study” through Dr. Charles Rinaldo’s NIH NIAID AIDS Clinical Trials Group grant

Earlier this year, research led by Dr. Andrea Gambotto (Associate Professor of Surgery, Pitt School of Medicine and UPMC) and Dr. Lou Falo (Professor and Chair, Department of Dermatology, Pitt School of Medicine and UPMC), showed initial tests in mice of a potential COVID-19 vaccine.¹ The vaccine, termed PittCoVacc (Pittsburgh Coronavirus Vaccine) is delivered by a unique, sugar-based, tiny patch with microscopic needles to penetrate skin and deliver the virus protein-based vaccine. The vaccine induced potent antigen-specific antibody responses against SARS-CoV-2 in mice that were evident beginning 2 weeks after immunization. This vaccine research team includes IDM doctoral student Muhammad (Sohaib) Khan. Major support for the further development of this vaccine leading to human trials has come from supplemental funds to the NIH AIDS Clinical Trials Group grant led by Dr. Charles Rinaldo (PI). He is assisted by Grants Manager Ms. Gloria Lee.


NEW IDM FACULTY

David Lyle Givens, PhD, has been confirmed as a new IDM faculty member. Dr. Givens is an Instructor in IDM, where he will be an important addition to our Education/Prevention program in advising and teaching our MPH students.

Dr. Givens received his PhD from the University of Pittsburgh in 2018 in the Cooperative Doctoral Program in Religion, and also holds an MA in Religious Studies from Pitt (2010), a BA in Religious Studies from the University of Central Florida (2008), and a BA in Philosophy, Humanities, and Psychology from the University of Central Florida (2008).

Dr. Givens work and research is grounded in the Medical Humanities field, particularly in areas that intersect with HIV. His current work promotes equitable public health planning and communications with marginalized communities as well as qualitative work furthering stigma reduction, community resiliency, and historic and contemporary health equity. In his role specializing in Public Health Practice, Dr. Givens brings a decade of experience in HIV Planning and community engagement to his work in IDM. He serves as Co-PI and Project
Director for the HIV Prevention and Care Project (HPCP), where he and the HPCP team have and will continue
to lead statewide HIV planning and facilitation efforts for and with the Pennsylvania Dept. of Health.

Dr. Givens other academic interests also include complementary medicine, particularly MBSR, and community
experiences and perceptions of medicine and wellness. Dr. Givens currently serves as the Co-Director of the
Center for Mindfulness and Consciousness Studies housed in IDM, and he also supports the Medical
Humanities AoC in Pitt’s Center for Bioethics.

Dr. Givens’ office is in the combined Pitt MACS/MWCCS and HPCP Suite 400 in the Keystone Building at
3520 5th Avenue. His phone number is 412-383-1512, E-mail: dlg43@pitt.edu

We welcome Dr. Givens to our faculty. We look forward to his active contributions to IDM’s goals for the
department’s students, research, and public health practice.

Toan H. Ha, MD, DrPH, is joining IDM as an Assistant Professor, tenure track. Dr.
Ha will be an important addition to our Education/Prevention program in advising
and teaching our MPH and doctoral students. Dr. Ha’s office is in our second floor
suite in the Public Health Building, room 2118. His office number is 412-383-4576
and e-mail address is: toan.ha@pitt.edu

Dr. Ha received his MD from Tay Nguyen University in 1997. He then went on to
receive an MIH from the University of Copenhagen in 2000, and was a Program
Officer of Maternal and Child Health/HIV for UNICEF Viet Nam from 2001-2004. In
2008, he received a DrPH from the University of Texas, Houston. Continuing his
professional odyssey, from 2008 to 2010 Dr. Ha was a Postdoctoral Fellow in Social
and Behavioral Aspects of HIV/AIDS at Virginia Commonwealth University. After a
second postdoctoral fellowship on alcohol use and ART adherence from 2015-2018
at the University of Connecticut School of Medicine, in 2018, Dr. Ha was promoted to an Assistant Professor in
the Department of Public Health Science.

Dr. Ha’s current studies include an investigation of HIV risk among
young woman industrial workers in Viet Nam, supported by an NIH
R21 grant. His long-term goal is to develop theory-based and
culturally appropriate interventions for reducing the risk and burden
of HIV/AIDS high-risk populations. He joins Drs. Krier and Friedman
on a CDC-supported project on HIV prevention in the
Commonwealth of Pennsylvania, and the MidAtlantic AETC project
team as a public health physician and supported by core MAAETC
and COVID funding.

We welcome Dr. Ha to our department. We look forward to his active contribution to expanding our local and
global public health initiatives.

Danielle Tufts, PhD, joins our department as an Assistant Professor in the
biosciences program. She comes to IDM with a BS from UC Davis in conservation
biology, an MS from the Univ Texas, Tyler, in molecular biology, and a PhD from the
Univ Nebraska, Lincoln, in evolutionary biology. She recently completed a postdoctoral
fellowship on tick-borne diseases in the laboratory of Dr. Maria Diuk-Wasser at
Columbia University. Dr. Tuft’s office is in our second floor suite in the Public Health
Building, room 2119. Her office number is 412-383-4676 and e-mail address is:
DMT80@pitt.edu.
Zoonotic diseases that breach the human-environment interface are among our most serious global public health challenges. This has never been clearer than it is now in the midst of a pandemic caused by a novel bat coronavirus. IDM has been a leader in researching zoonotic diseases since the 1950s/60s with the discovery of California encephalitis virus and dengue viruses 3 and 4, to current work on avian influenza and mosquito-borne viruses that cause dengue, Zika, and Rift Valley fever.

Ticks are blood-feeding arthropods that have long and complex life histories with multiple opportunities to acquire and amplify pathogenic arboviruses, protozoans, and bacterial pathogens that can be transmitted to humans. This problem is compounded by their propensity to co-transmit multiple pathogens while feeding. In fact, people in the United States who contract Lyme disease are often co-infected with the protozoan that causes babesiosis and the bacterial pathogen that causes anaplasmosis.

The geographic range of *Ixodes scapularis*, the tick that transmits the Lyme disease spirochete and several other pathogens, has increased significantly in the last two decades. Accordingly, the incidence of diseases transmitted by this tick have increased. Indeed, Lyme disease is the most common vector borne disease in the United States. This trend may be related to climate change, the evolving relationship between humans and the environment, and changes in the population structure and geographic localization of animals that host ticks. A better understanding of how these factors promote human-tick interaction may identify sensitive points in transmission cycles that can be targeted to limit the incidence of tick-borne disease in our communities.

Dr. Danielle Tufts’ work in IDM will fill gaps in our understanding for how ticks interact with their environment and how those interactions affect human populations. Her proposed research in IDM has three primary themes including investigating the ecological and molecular interactions between ticks, tick-borne pathogens, and hosts, identifying how co-infections facilitate pathogen transmission and survival in the host, and advancing new approaches for vector control. Her lab will use a variety of field and lab-based techniques to explore these areas and she has ongoing collaborations with leaders in tick-borne disease research to accomplish these goals. Her work in these critical areas with basic and applied applications will help put us at the front edge of research in these topics.

**The 2020 AAI Careers in Immunology Fellowship Awarded to the IDM team of Renee R. Anderko and Dr. Robbie B. Mailliard**

The American Association of Immunologists recently announced the 2020 recipients of the prestigious Careers in Immunology Fellowship award. We are delighted to report that the IDM team of Renee R. Anderko (PhD candidate) and Dr. Robbie B. Mailliard (Asst. Prof., Principal Investigator and mentor) are recipients of this year’s award for their proposal entitled *NK cell memory in chronic HIV infection*. Ms. Anderko is in her third year of doctoral studies since graduating from Penn State University as valedictorian of her undergraduate program. Renee is the first recipient of this award in our department’s history. This award supports the career development of young scientists by providing eligible PIs with one year of salary support for a trainee in their labs. Consideration
for this award is based on the merit of the PI’s proposed project, potential of the trainee, the quality of the training environment, and financial need. This award is highly competitive, as the AAI is in its 105th year as the largest professional society of immunologists in the world, with over 7600 members. Their first study supported in part by this award was recently published in the *The Journal of Immunology*¹, a top journal in the field. Congratulations to Renee and Dr. Mailliard for this great achievement.


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*IDM PhD Graduates: Anna Noller, 04’, Urvi Parikh, 05’, Mimi Ghosh, 05’*

Anna Noller received her PhD in December 2004 after five years of study with Dr. Lee Harrison. First, she went to the CDC and worked in the Coordinating Office of Terrorism Preparedness and Emergency Response. From there she went to Virginia to work for the Office of the Chief Medical Examiner as the statewide forensic epidemiologist for 8 years. She tracked deaths due to diseases of public health importance, directed a BSL-3 III autopsy lab, and helped plan responses to mass fatality events. However, for the last six years, Dr. Noller has worked for a health insurance company where she determines the efficacy of their clinical programs.

Dr. Noller states, “that while my current and previous positions have strayed away from research, the skills I have learned while at Pitt have served me well. Thinking critically, being open to others’ opinions, and learning to attack problems from new angles have all helped me be successful outside of the lab.”

In her personal life, she has been married for 13+ years having dragged her husband away from his hometown of Pittsburgh. They have two boys ages 9 and 12. And they do their best to have at least 2 dogs in the house.
In June, 2020, Dr. Charles Rinaldo (Chair, IDM) and IDM primary faculty members discussed the social upheaval that was occurring across the United States that was sparked by the police killing of Mr. George Floyd in Minneapolis. They agreed that IDM should take immediate steps to address racial inequities in our department. To do this, IDM faculty members, graduate students and staff formed the IDM Plan for Action Against Racial Disparities (IDM PAARD). This was the first such committee to address racial disparities in our department’s 70-year history.

The PAARD committee consists of IDM faculty – Drs. Moses Bility (Chair), Dr. Jeremy Martinson (Co-Chair), Dr. Larry Kingsley, Dr. David Givens, and Dr. Rinaldo. Representatives for the postdoctoral fellows: Dr. Daniel Jacobson López and Priscilla Castanha; graduate students: Priyanka Talukdar, Renee Anderko, Karsen Shoger, and Muhammad Khan; staff: Alissa Eugeni, Kaitlin Bodnar, and Harley Roth.

The following PAARD statement and plan on combating racism were announced in July, 2020. The department is now moving to act on these principles.

May 28 2020 protest in Pittsburgh, Pennsylvania, against the killing of George Floyd (WIKIPEDIA)
IDM Statement and Plan for Combating Racism and its Public Health Impacts

The founding ideals of our nation are equality, liberty, and justice for all. However, our nation has actively denied these fundamental rights and freedoms to communities of color. Legacies of systemic racism and discrimination undermine the fabric of our nation and our value system. The recent killings of George Floyd, Breonna Taylor, and Ahmaud Arbery, and the past killing of Antwon Rose by East Pittsburgh Police, have awakened our nation to the hypocrisy of our ideals and have galvanized the nation, including our IDM students, postdocs, staff, and faculty, into action. Racism is a public health crisis, and as a department within the University of Pittsburgh Graduate School of Public Health, we are committed to the core public health values of equity, social justice, and anti-racism. While IDM has a history of addressing health disparities in marginalized groups, mainly through HIV research and advancing the HIV care continuum in communities, we recognize this is short of addressing numerous other health disparities marginalized communities experience. Drawing on these past and ongoing endeavors, IDM will intensify its efforts in addressing health disparities in infectious diseases that disproportionately affect communities of color. We will support students, trainees, staff, and faculty of color and create an inclusive environment in which all members are respected and valued. We will incorporate this charge into the three domains of our department’s mission, namely, to advance training/education, research, and service.

Training/Education: We will actively recruit students and postdocs from historically underrepresented groups to diversify the public health enterprise and serve as advocates and vanguards in addressing the health disparities in infectious diseases affecting communities of color. We will expand our recruitment efforts to historically Black colleges and universities (HBCUs) and other minority-serving institutions (MSIs), and we will foster relationships with local and national minority student organizations. We will reduce unnecessary barriers (i.e., graduate record exam) and facilitate financial support (i.e., training grants) for students from historically underrepresented groups through federal funding mechanisms. We will support minority students, facilitate collegial interactions among students, and create a sense of community in the student body through IDM’s Inclusion and Diversity Committee representative. Importantly, we will strengthen the mentoring and retention of underrepresented students and postdocs, and we will equip these scholars with the tools and resources needed for success. We will incorporate training on cross-cultural competency and implicit bias against racial/ethnic minorities and other marginalized groups, as well as the impact of these biases on health, in our courses, seminars, and faculty/staff meetings. We will work to incorporate literature and research from scholars of color into our core curriculum to
ensure that their contributions to public health are recognized. Overarching these principles, we will serve as advocates in creating a just and inclusive educational, working, and living environment, where students, postdocs, staff, and faculty from any marginalized community feel welcome and respected in the Graduate School of Public Health, the University of Pittsburgh, and the City of Pittsburgh.

Research: We will expand our research to include new initiatives on investigating comorbidities that disproportionately affect people of color and the impact of these conditions on COVID-19 and other infectious diseases. We will integrate established federal and non-federal funding avenues to financially support historically underrepresented students in their research on infectious diseases, including but not limited to diseases that disproportionately affect minority and marginalized communities.

Service: We will adopt an integrative approach for addressing health disparities by strengthening our community engagement with local minority and marginalized communities through our ongoing work with HIV/AIDS prevention and care. We will expand our efforts to include new partnerships and student service in community health centers related to the COVID-19 pandemic and other infectious diseases in communities of color in Pittsburgh.

Finally, to look beyond our principal focus on infectious diseases, the department will strive to be a more forceful advocate in conversations and reparative actions in the Graduate School of Public Health and the University. IDM faculty, students, postdocs, and staff will be encouraged and supported to participate in broader university governance to advocate for additional systemic change that supports marginalized students, postdocs, faculty, and staff, as well as university actions and outreach fostering external community developments.

The students, staff, postdoctoral associates, and faculty members of the IDM Plan for Action Against Racial Disparities (IDM PAARD) Committee developed and approved this statement on 20 July 2020.

IDM PAARD Committee Members:
Faculty – Drs. Charles Rinaldo, Moses Bilty, Larry Kingsley, David Givens, Jeremy Martinson
Staff – Alissa Eugeni, Kaitlin Bodnar, Harley Roth
Postdocs – Drs. Daniel Jacobson López, Priscila Castanha
Students – Priyanka Talukdar, Renee Anderko, Karsen Shoger, Muhammad Khan
IDM Announces 2019/20 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:

**Rachael Poad (MS)**
- **Undergrad:** Wake Forest University
- **Major:** Biology
- **Hometown:** Lafayette Hill, PA
- **Interests:** Irish dance, traveling, hiking

**Kristen Eggles (MPH-PEL)**
- **Undergrad:** West Carolina University
- **Major:** Biology
- **Hometown:** Fort Hill, SC
- **Interests:** yoga, finding new coffee

**Claire McCreavy (MPH-MIC)**
- **Undergrad:** West Chester University of PA
- **Major:** Public Health/Health Promotion
- **Hometown:** Lafayette Hill, PA
- **Interests:** Irish dance, traveling, hiking

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, subscipt “The Bob Yee Fund”, and sent to: University of Pittsburgh, Graduate School of Public Health, Attn: Mr. Michael Tokosh, 2123 Public Health, 130 DeSoto Street, Pittsburgh, PA 15261. Contact Mr. Tokosh with questions at: 412-624-0676 or email: mtokosh@pitt.edu
Please join us in applauding the following for their service and commitment to the Department of Infectious Diseases and Microbiology

5 Years
Luis Archila, Prevention Specialist, HIV Prevention and Care Project
Brian Adams, Research Specialist, HIV Prevention and Care Project
Debra (DJ) Stemmler, Fiscal Manager, HIV Prevention and Care Project

IDM Staff Recognition
June 13, 2019

IDM Departmental Awards

Roberta Reis, PhD Program
Lindsay Summers, MPH-MIC Program

Dr. Velpandi Ayyavoo pictured with Roberta Reis & Lindsay Summers

Pictured (back row): Charles Rinaldo, PhD, Chair of IDM, Nancy Health, Luis Archila, Brian Adams, Dr. Don Burke, (then) Dean of Pitt Public Health, (front row): DJ Stemmler
Natalie Suder Egnor is a Supervising Health Scientist with Cardno ChemRisk in the Pittsburgh, PA office. She completed her undergraduate studies at the Pennsylvania State University, and obtained both a Master's of Public Health in Infectious Diseases and Microbiology and a Doctor of Public Health in Epidemiology from Pitt Public Health.

Egnor's master's thesis in IDM with her advisor Dr. Charles Rinaldo examined the association between herpesvirus coinfection and non-Hodgkin's lymphoma among men living with HIV. Her doctoral dissertation work utilized exploratory factor analysis to evaluate the association between inflammatory markers and psychosocial stress with characteristics of atherosclerotic plaque. During her time at the University of Pittsburgh, Dr. Egnor also obtained certificates in Global Health and Public Health Program Evaluation.

At Cardno ChemRisk, Egnor has used epidemiological principles to evaluate complex relationships between occupational and environmental exposures to chloroprene, man-made vitreous fibers, metals, talc, tobacco products, and various malignant and non-malignant health outcomes. She also has experience evaluating the effects of health policies and public health programs on health outcomes and disparities.

Additionally, Egnor supports several clients in their response to and management of COVID-19-associated risks by helping clients identify strategies to protect worker health and strengthen business resilience.

Speaking of her time at Pitt Public Health, Egnor says, "I utilize all aspects of my Pitt Public Health training in my current position. As a consultant, I often work on multidisciplinary teams to solve clients' unique problems related to human health risk management. I am grateful for the diversity of coursework, training, and other applied opportunities afforded to me as a Pitt Public Health student, because I feel like those opportunities have allowed me to make meaningful contributions to the teams on which I work and to better support clients' efforts to protect worker/public health."

Her favorite part of the job? "I really love knowing that the solutions and strategic guidance we offer to clients are being immediately utilized and/or implemented to support their efforts to protect and promote health. I get particularly excited about opportunities where I can help clients operate in a way that is more sustainable and that promotes health and equity among their employees and the communities in which they operate."

Nicholas V. Resciniti received his master of public health degree with a concentration in Infectious Disease Management, Intervention, and Community Practice from IDM in Pitt Public Health in 2017. His essay advisor was Dr. Larry Kingsley. The project evaluated diagnostic criteria for HIV-associated neurocognitive disorder in the Multicenter AIDS Cohort Study. He currently is pursuing a PhD in Epidemiology from the University of South Carolina, with his dissertation focusing on microbiome disruption and the longitudinal association with cognitive impairment and dementia. His research focus is related to understanding the biological underpinnings between physical and mental health of older adults. Resciniti is also the Lead Data Analysis for the Data Analytics Branch for the South Carolina Department of Health and Environmental Control. His recent focus has been on understanding how COVID-19 is impacting South Carolina residents and potential ways to mitigate the spread throughout the state. Resciniti provided evidence that masks slowed the spread of COVID-19 in South Carolina, which lead to the initiation of additional mask ordinances.
Resciniti on his time at Pitt Public Health: "Through my experiences at Pitt Public Health, I have learned to be an independent researcher and public health expert at the intersection of infectious disease and gerontology epidemiology. Pitt Public Health laid the foundation of my current knowledge and skills to develop my dissertation topic and current role at a state public health agency. While in my masters, I focused on how microbes and infectious diseases specifically impacts older adults. For my dissertation at the University of South Carolina, I am studying how microbiome disruption longitudinally impacts cognitive function and dementia. My position as lead data analyst focuses on understanding how COVID-19 impacts South Carolina residences. My master's in Management, Intervention, and Control of Infectious Diseases prepared me to analyze data to understand how to best manage and control the disease to provide guidance on potential interventions. Through this knowledge, I was able to conduct an analysis that mask ordinances help to slow and control the spread of COVID-19, which lead to the initiation of more mask ordinances in South Carolina."

His favorite part of his work: "The ability to translate my knowledge into practice and discovering knowledge no one has before are the favorite parts of my job. The thrill of research never wears off. Taking an idea from a thought, building it and backing it through previous research, conducting the analysis to provide evidence, and sharing the findings through a manuscript is what drives my passion and career."

Alexander Sundermann is a clinical research coordinator and a DrPH student in epidemiology at Pitt Public Health. Alex received his MPH in IDM from Pitt Public Health in 2014. His thesis advisor was Dr. Linda Rose Frank. The thesis developed a protocol for reduction in central line-associated blood stream infections. The thesis was a retrospective analysis that showed the importance of daily documentation of central lines associated with blood stream infections, in order to remove unnecessary central lines that may lead to these infections.

As a doctoral student and clinical research coordinator, Sundermann works in the Microbial Genomic Epidemiology Laboratory (MiGEL). He and the MiGEL team are working with experts at the University of Pittsburgh Medical Center (UPMC) and Carnegie Mellon University to build an Enhanced Detection System for Healthcare Associated Transmission (EDS-HAT).

Sundermann brings his years of experience working in infection prevention to the MiGEL team to investigate, trace, and analyze outbreaks detected by EDS-HAT. MiGEL’s tool combines genomic sequencing and machine learning of the electronic health record data to detect infectious disease outbreaks and their transmission routes faster compared to traditional epidemiological methods. EDS-HAT, shown in numerous publications, has detected new outbreaks and novel routes of transmission illustrating the promising economic and epidemiological impact on infection prevention.

Prior to joining MiGEL, Alex worked in infection prevention at UPMC Presbyterian hospital where he implemented quality improvement measures and educated staff to reduce healthcare-associated infections. He led initiatives such as improving the hospital’s water disinfection system, expediting the first responder infectious disease exposure notification system, and the adoption of new technology to reduce infections. Notably, he and his colleagues investigated and traced the source of an outbreak of invasive mold infections to healthcare laundry. The team published a national, multi-center study that brought attention to the hygienic quality of healthcare linens with additional publications underway.

Of his time at Pitt Public Health, Sundermann says, "Pitt Public Health not only prepared me for a career in infection prevention, but aligned my career path through the practicum program. As an MPH student, I completed my practicum at UPMC Presbyterian infection prevention where I later worked full-time after graduation. From there, I connected with Dr. Lee Harrison and the MiGEL team where I joined as a part-time DrPH student and now clinical research coordinator."

His favorite part of his job? "I am thankful to work with a passionate, supporting, and multidisciplinary team at MiGEL. Our team is on the leading edge of infection prevention research and aiming to change the paradigm of healthcare outbreak investigation."
Simon Barratt-Boyes, BVSc, PhD is leading a group of Pitt faculty engaged in AIDS research who received a 1 million dollar T32 training grant renewal from the NIH for five years. This grant is now in its 15th year. This year the grant will train two new predoctoral researchers, and two have been reappointed for an additional year in the study of HIV/AIDS. The PART Program is based on concepts of interdisciplinary courses and collaborative basic research that provide the foundation for understanding HIV/AIDS and controlling the epidemic.

Congratulations to the following trainees:

**Appointed Fellowship 2018/2019**

**Emerson Boggs** (IDM Program)  
Research: “Characterizing the Role of Nesprins in HI-1 Nuclear Entry”  
Mentor: Zandrea Ambrose, PhD

**Alyssa Jespersen** (IDM Program)  
Research: “SIV Alters M. tuberculosis Granuloma Cell Profiles and Cellular Expression”  
Mentor: Joshua Mattila, PhD

**Renee Anderko** (IDM Program)  
Research: “Phenotypic and Functional Characterization of NK Cells in HIV-1 Infection”  
Mentor: Robbie Mailliard, PhD

**Adam Kleinman** (MVM Program)  
Research: “Monitoring the Effects of Cytoreduction on the Size and Diversity of the SIV Latent Reservoir in Rhesus Macaques on Antiretroviral Therapy with Cyclophosphamide”  
Mentor: Christian Apetrei, MD, PhD

**Abigail Gerberick** (IDM Program)  
Research: “Antigen-presenting Cell Mediated Trans Infection and the HIV Reservoir”  
Mentor: Giovanna Rappocciolo, PhD

**Appointed Fellowship 2019/2020**

**Darian Yang** (MBSB Program)  
Research: “Joint Computational and NMR Characterization of Early HIV-1 Capsid Assembly at the Atomic Level”  
Mentor: Angela Gronenborn, PhD

**Kevin Joseph** (IDM Program)  
Research: “Characterization of the Integrated HIV-1 Proviral Landscape in Maintaining Persistent HIV-1 Infection”  
Mentor: John Mellors, MD

**Daniel Lane** (IDM Program)  
Research: “HIV and TB: Type I Interferon Modulation by HIV Promotes TB Infection”  
Mentor: Joshua Mattila, PhD

**Dylan Tuttle** (IDM Program)  
Research: “Impact of NK Cell Memory on Adaptive Immune Responses to SARS-CoV-2 in People with HIV-1”  
Mentors: Robbie Mailliard, PhD and Ernesto Marques, MD, PhD

**Reappointed 3rd yr. Fellowship 2019/2020**

**Abigail Gerberick** (IDM Program)  
Research: “Antigen-presenting Cell Mediated Trans Infection and the HIV Reservoir”  
Mentor: Giovanna Rappocciolo, PhD
And the Award Goes To ……

IDM Annual Research Day
September 26, 2019

PhD Presentations

First Place: Kevin Joseph

"Efficient High-Throughput Single-Genome Sequencing of Variable and Near-Full Length HIV-1 Integrated Proviruses"

Second Place: Abigail Gerberick

"Antigen-Presenting Cell Mediated Trans Infection of naïve T Cells in HIV Reservoir Maintenance"

Third Place: Henry Ma

"Increased Intracranial Pressure and Electroencepha-lographic Abnormalities in Cynomolgus Macaques Infected with Venezuelan Equine Encephalitis Virus"

MS Presentations

First Place: Victoria Gould

"Immunometabolism of Lung and Lymph Node Granulomas in Non-Human Primates with Tuberculosis"

Second Place: Daniel Evans

"Comprehensive Analysis of Horizontal Gene Transfer Among Multidrug-Resistant Bacterial Pathogens in a Single Hospital"

Third Place: Subramanian Thothathri

"Generation and Characterization of Immune Polarized Exosomes Derived from Dendritic Cells"
And the Award Goes To ……

**MPH-MIC Presentations**

First Place: **Inngide Osirus**

“A Critical Needs Assessment of HIV Position Haitians Living in Dominican Republic”

Second Place: **Briana Edison**

“Sexual Health Communication and Sexual Violence Prevention Among College Students”

Third Place: **Rajeev Salunke**

“Are We ‘Prep’ Ared to Prevent HIV?”

**MPH-PEL Presentations**

First Place: **Rachel Jaffe**

“Increasing Standard Precautions Compliance to Improve Healthcare Worker Safety and Reduce Healthcare-Associated Infections”

Second Place: **Abigail Rubio**

“In vitro Susceptibility Profile Analysis of Emerging Drug Resistance in Extensively-Drug Resistant Pseudomonas Aeruginosa”

Third Place: **Dzigbordi Kamasa-Quashie**

"Seroprevalence of Spotted Fever Group Rickettsial Antibodies in Humans in Uganda Using Enzyme-Linked Immunosorbent Assay"
Nicole Grant, IDM PhD Student, and her husband Steve welcomed a baby girl, Eloise Gale on February 27, 2020. 

*Congratulations to the Grant Family!*

Moses Bility, PhD, Assistant Professor of IDM, and his wife Yuyun Liang, welcomed a baby girl, Athena Liang-Bility on March 4, 2020. 

*Congratulations to the Liang & Bility Family!*

Chelsea Yonash, IDM Student Services Coordinator, and her husband Zach welcomed a baby boy, Hudson Zachary, on March 11, 2020. 

*Congratulations to the Yonash Family!*

Kevin Joseph, IDM PhD Student, and his wife Courtney welcomed a baby boy, Vincent Edward, on May 19, 2020. 

*Congratulations to the Joseph Family!*  

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24
PhD

Jan Kristoff, “Programming Dendritic cells for the ‘Kick and Kill’ of Latent HIV-1”
Advisor: Dr. Robbie Mailliard

MPH-MIC

Lindsay Summers, “Evaluating and Implementing Public Health Workforce Development Initiatives to Improve Competencies of Infectious Disease Staff at a Local Health Department”
Advisor: Dr. Sarah Krier

Kamal Althobaiti, “Examining HIV Prevalence and Cultural Implications on HIV Awareness in the Kingdom of Saudi Arabia”
Advisor: Dr. Linda Frank

Nefertiti Wade, “U.S. Military STI Screening: Policy Analysis & Screening Implications”
Advisor: Dr. Linda Frank

MPH-PEL

Kendal Fike, “Oral Microbiome in HIV-infected on ART and HIV Uninfected Men”
Advisor: Dr. Yue Chen

Advisor: Dr. Clifton Callaway

Georgie Scott, “Evaluation of Pennsylvania’s Mosquito-Borne Disease Control Program and Future Directions”
Advisor: Dr. Mackey Friedman

Justin Dutta, “Follistatin-Like Protein 1 (FSTL1) Deficiency Confers Protection Against Klebsiella pneumoniae Pulmonary Infection”
Advisor: Dr. Joshua Mattila

Ashlyn Lancaster, “A Guide to Surgical Site Infections in Acute Care Hospitals”
Advisor: Dr. Jeremy Martinson
PhD

Jacob Richards, “Adaptation of Mycobacterium Tuberculosis to Biofilm Growth is Genetically Linked to Drug Tolerance”
Advisor: Dr. Anil Ojha

MS

Roberta Mettus, “Identification of Colistin-Resistance mechanisms in pmrC-, pmrA-, and pmrB-deficient Acinetobacter baumannii”
Advisor: Dr. Yohei Doi

Karsen Shoger, “Tissue Specific Cish Expression Supports Alveolar Macrophage Homeostatic Function”
Advisor: Dr. Rachel Gottschalk

Lindsay Summers, Li Lin, Saniya Sabnis, Ingrid Godfrey, Patrick Kapfhammer, Kendal Fike, Georgie Scott, Justin Dutta, Kelsey Messerschmidt, Jan Kristoff, Kamal Althobaiti
MPH-MIC

Marianna Ortiz, “Interventions to Prevent Sexually Transmitted Infections in University Settings in the United States: A Literature Review”
Advisor: Dr. Sarah Krier

Andrew Whaley, “Carbapenem Resistance: A Retrospective Review of the Literature and Clinical Data”
Advisor: Dr. Ricardo Arbulu

Elizabeth Owens, “Challenges in the Control of Yellow Fever Outbreaks in Brazil Since 2016: A Literature Review”
Advisor: Dr. Sarah Krier

MPH-PEL

Advisor: Dr. Leah Lamonte

Quinn Solomon, “An Epidemiological Analysis of MDRO Acquisition in Critically Ill Burn Patients in Western Pennsylvania”
Advisor: Dr. Jeremy Martinson

Rachel Jaffe, “Social Media’s Effect on Vaccination Rates”
Advisor: Dr. Jeremy Martinson

Congratulations to IDM’s April 2020 Graduates

MS

Emily Olsen, “Roles of Antibody in Vaccine-Elicited Protection Against Virulent Francisella tularensis Aerosolized Infection”
Advisor: Dr. Doug Reed

Zachary Koenig, “Type III Interferon Control of Rift Valley Fever Virus at Epithelial Cell Barriers”
Advisor: Dr. Amy Hartman

Jason Yeung, “Zika Virus Infection Modulates Expression of Regulatory Complement Factors in SH-SY5Y Cells”
Advisor: Dr. Ernesto Marques

Katrina Stephenson, “Identification of Circulating Biomarkers of HIV Disease Progression”
Advisor: Dr. Giovanna Rappocciolo

Advisor: Dr. Paul Kinchington

Subramanian Thothathri, “Transfer of DC Instruction to T Cells via Extracellular Vesicles”
Advisor: Dr. Robbie Mailliard
MPH-MIC

Sean Saul, “What is the Relationship between the Ordering of a Respiratory Viral Penal and the Presence of Acute Respiratory Illness and Influenza-like Illness Symptoms Reported in the Electronic Medical Record”
Advisor:  Dr. Linda Frank

Laura Dytrt, "Barriers to Reaching the United Nations Joint Programme on HIV/AIDS "90-90-90: Treatment for All" Targets in the Caribbean"
Advisor:  Dr. Linda Frank

Rajeev Salunke, "PrEP Usage Demographics Among Participants Who Were Surveyed Using Convenience Sampling at Two LGBTQ Focused Events in Pittsburgh"
Advisor:  Dr. Mackey Friedman

MPH-PEL

Abagail Rubio, "In Vitro Susceptibility of Multidrug-Resistant Pseudomonas Aeruginosa Following Treatment-Emergent Resistance to Ceftolozane-Tazobactam"
Advisor:  Dr. Jeremy Martinson

Brian Kimball, "Rabies Virus: Understanding and Responding to the Public Health Problem"
Advisor:  Dr. Jeremy Martinson

Dzigbordi Kamasa-Quashie, “Relationship Between Single Nucleotide Polymorphisms and Severe Dengue in a Brazilian Population”
Advisor:  Dr. Jeremy Martinson

Katherine Lyden, “The Ongoing Ebola Epidemic in the Democratic Republic of the Congo: Contributing Factors that Have Influenced Disease Control”
Advisor:  Dr. Jeremy Martinson

Megan Kerbag, “Video Directly Observed Therapy for Active Tuberculosis - A Policy Review”
Advisor:  Dr. Jeremy Martinson

Samira Amirova, "Regulation of Neuroinflammatory Factors by Neuroprotective MicroRNAs on HIV-1 Infected Microglia"
Advisor:  Dr. Velpandi Ayyavoo

Sarah Sullivan, “Effect of Asbestos Fibers and the Association with Pneumonia Mortality”
Advisor:  Dr. Jeremy Martinson

Congratulations to IDM’s June 2020 Graduates

PhD

Henry Ma, “Radiofrequency Telemetry and Immunologic Correlates as Predictors of Acute Inhalational Alphavirus Infection in a Nonhuman Primate Model”
Advisor:  Dr. Doug Reed
Gwen Kettenburg, “Developing a Model of H5N1 Influenza Pathogenesis in Precision-Cut Human Lung Slices”  
Advisor: Dr. Simon Barratt-Boyes

Victoria Gould, “Glycolytic Metabolism of Macrophages Differs by Spatial Location and Subset in Tuberculous Granulomas”  
Advisor: Dr. Josh Mattila

Megan Arden, “Strategies for Engaging Community Health Workers to Reduce Malaria Mortality in Children under Five in Rural Togo”  
Advisor: Dr. Linda Frank

Inngide Osirus, “Care Provider Perceptions of HIV Positive Haitian Migrants Needs Living in the Dominican Republic”  
Advisor: Dr. Mackey Friedman

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

Lauren Fogelman, “Assessing the Impact of Seasonal Factors on HIV Care in the Homeless Population of Pittsburgh”  
Advisor: Dr. Sara Krier
This year’s special, historic convocation event was given for the first, and likely only time, as a “virtual” ceremony. Dr. Charles Rinaldo, Chairman of IDM, addressed this year’s Class of 2020 graduates via Zoom. Here is a modified version of the presentation.

I believe that we should look at this as a unique and profound event as an opportunity – not an unfortunate aberration in our life. In fact, I believe that this event will last as a special, historic moment that you, your family, and your friends will look back on with awe and amazement years from now. I believe historians will view this as we do the 1918 flu pandemic – how we survived the COVID pandemic of year 2020, and in the face of that, are celebrating your great success and achievement.

You are making history today. Walk tall with pride with your new, hard-earned diplomas - knowing that fate has placed you as the next wave of infectious disease experts in the center of an historic virus pandemic! What a challenge and opportunity nature has given you. Your brief time in our unique department has prepared you to become the new leaders in the public health of infectious diseases – leaders in the continuing fight against this pandemic, and leaders preparing for the next pandemic.

Congratulations again, and thank you.