# NEWS FROM THE DEPARTMENT OF MEDICINE MAILERS

# **MESSAGE FROM THE CHAIR**

JANUARY 2022



appy new year to all of Lyou, and here's wishing excellent health everyone and happiness for 2022. As we start the new year, we are facing new challenges around the COVID-19 pandemic as well as fatigue and frustration as we move into yet another winter facing uncertainty and restrictions. Despite challenges, we have prevailed, and collectively we have done amazing things that we should all be proud of. We have been tested and, at every turn,

shown that our commitment to outstanding patient care, research, and education is not moveable and resolute.

Thus, it is fitting that we start the new year focusing on the Division of Infectious Diseases and International Health. This Division is a leader in its field and world-renowned for its clinical care, education, and research. They have a great tradition of excellence, and under the leadership of Dr. Eric Houpt, they continue to shine. Most recently, faculty members have assumed key leadership positions around the COVID-19 response, including Drs. Costi Sifri, Amy Mathers, Bill Petri, Patrick Jackson, Taison Bell, Chris Arnold, and many others. We owe all of them a great debt of gratitude. As you read through this edition of Medicine Matters, I think you will get a great sense of the depth and breadth, and excellence in the Division.

Lastly, a key member of the Division and Department, Dr. Jerry Donowitz, will retire this month. Dr. Donowitz has been a great friend, mentor, and role model for so many in the Department of Medicine, and his contributions have been incredibly impactful over so many years. He is beloved and will be greatly missed. We wish him the very best. Please take a moment to drop him a note of thanks.

With best wishes,

Mitchell H. Rosner, MD, MACP Henry B. Mulholland Professor of Medicine Chair, Department of Medicine



UVA Health DEPARTMENT OF MEDICINE MISSION We are dedicated to preventing disease and treating illness, educating and inspiring future leaders in the field of internal medicine, and supporting innovative biomedical research. **VALUES** We strive for a sense of community, connection, and synergy among all faculty, staff, and trainees. PLEDGE We will conform to the highest ethical standards, uphold the values of our partner organizations, and give back to our community through public service.













# **DOM UPDATES & NOTES**

# **DOM Financial Update**

# Department of Medicine Summary of Consolidated Financials

**FY21** as of November 21, 2021

	Budget	Actual	\$ Variance
	YTD	YTD	YTD
Work RVUs	437,871	435,976	( <mark>1,895</mark> )
Clinical Receipts (NPSR)	28,443,048	29,265,978	822,930
Total Revenues	82,145,841	86,084,180	3,938,338
Total Expenditures	79,718,370	82,718,978	(3,000,608)
Net Income	2,427,471	3,365,202	937,730

### **Summary Explanation of Variance:**

For the fiscal year through November, 2021 DOM posted a consolidated net gain of \$3.4M and a favorable variance to YTD net income budget of \$938K Clinical receipts outperformed budget by \$823K due to higher charge volumes.

Total expenditures underpeformed budget driven by timing and unbudgeted grant expenditures on new and existing awards.

Total revenues include \$2.7M Endowment revenue recorded for December through June.

# HAPPY NEW YEAR! UVA DEPARTMENT OF MEDICINE



# I Can't Do This Again

A podcast in which critical care and infectious disease physician Taison Bell, MD discusses the toll that the COVID-19 pandemic has had on the mental health of himself and so many other healthcare workers.

# THANK YOU!

TO ALL THOSE WHO HAVE BEEN VOLUNTEERING AT UVA COMMUNITY COVID-19 TESTING SITES



# MINDFULLNESS FOR HEALTHCARE EMPLOYEES

Mindfulness for Healthcare Employees
Free Winter 2022 Course
Live online via Zoom
Mondays, January 10 – February 28, 2022
6:30pm – 8:30pm
Retreat: Saturday, February 12, 2022
9:00am-1:00pm

# **DOM UPDATES & NOTES**



Alden Doyle, MD



William Petri, MD



David Callender, MD



Jessica Dreicer, MD



Joshua Eby, MD



Glenn Moulder, MD



Samuel Oliver, MD



Anna Smith, MD



Yosra Alkababl MD



Amy Mathers MD



Lindsay Somerville, MD



Alan Dalkin, MD



Richard Santen, MD

# **Awards and Achievements**

Congratulations to **Dr. Alden Doyle** in the Division of Nephrology on his recent national appointments: Chair, *UNOS Multiorgan Transplant Committee* (appointed last month) and Chair, UNOS Operations and Safety Committee (beginning July 1, 2022). Thank you for your leadership in improving outcomes in transplantation.

Congratulations to Infectious Disease's **Dr. Bill Petri** on receiving the <u>Maxwell Finland Award</u>, which honors scientists who have made outstanding contributions to the understanding of Infectious Diseases and public health, from the National Foundation for Infectious Diseases.

Congratulations to **Dr. David Callender, Dr. Jessica Dreicer, Dr. Joshua Eby, Dr. Glenn Moulder, Dr. Samuel Oliver,** and **Dr. Anna Smith** on their selection for membership in the <u>UVA Academy for The Excellence in Education</u>. The induction ceremony will be announced soon.

Congratulations to Infectious Diseases fellow **Dr. Yosra Alkabab** on her latest paper, "<u>Differentiating transient from persistent diabetic range hyperglycemia in a cohort of people completing tuberculosis treatment in Dhaka, Bangladesh" which was published in PLOS ONE.</u>

Congratulations to Infectious Disease's **Dr. Amy Mathers and colleagues** on the publication of "IDSA Guidance on the Treatment of Antimicrobial-Resistant Gram-Negative Infections" (2.0)

Congratulations to **Dr. Lindsay Somerville** in the Division of Pulmonary and Critical Care on the publication in Chest Journal (@journal\_CHEST) of <u>"Real-World Outcomes in Cystic Fibrosis Telemedicine Clinical Care in a Time of a Global Pandemic."</u>

Congratulations to **Dr. Alan Dalkin** in the Division of Endocrinology & Metabolism, one of three clinical leaders newly appointed as *Associate Chief Medical Officer (ACMO)* for *Ambulatory Services* beginning January. 24, 2022. The new ACMOs will ensure an exceptional patient experience and work to improve operations, create our future direction, and serve as liaisons to ambulatory leaders and clinical teams. Dr. Dalkin also serves as vice chairman for the Department of Medicine.

Congratulations to **Dr. Richard Santen** in the Division of Endocrinology & Metabolism, who *Expertscape* has recognized - an organization that analyzes publications and ranks experts and institutions according to their demonstrated expertise in specific medical fields - as a World Expert in the field of Menopause. Along with UVA's Dr. JoAnn Pinkerton (also recognized) Drs. Pinkerton and Santen rank in the top 0.1% of scholars writing about Menopause over the past ten years.

# DOM UPDATES & NOTES

# **Welcome To The World**



Congratulations to Persey Bediako and his wife Rita who welcomed son Varel Boahene Bediako on December 6, 2021.



FRIDAYS AT NOON via Zoom Click for details and schedule.



Pictured left to right standing: Leslie Stewart (GI Fellowship Coordinator) Joy Hilton (Director of Education) Tammy Schlag (Residency Program Support- ambulatory/quality curriculum) Kara Watts (Pulmonary/Critical Care Coordinator and Residency Program support- ambulatory) Ginny Atwell (Infectious Diseases Fellowship Coordinator) Karen Ward (Undergraduate Medical Education Administrator) Cheryl Etelvari (Cardiovascular Medicine Fellowship Coordinator) Brittany Davis (Nephrology Fellowship Coordinator) Erin Arnold (Residency Program Coordinator) Javanov Barksdale (Endocrinology and Rheumatology Fellowship Coordinator) Lisa Mackey (Hematology/Oncology Fellowship Coordinator)

Seated: Terry Bennett (GME Compliance Manager) Monte Parsons (Allergy/Immunology Fellowship Coordinator)

Not pictured: Tony Brinkman (Residency Program Coordinator/Geriatrics and Palliative Care Fellowship Coordinator/UME Coordinator)







# Message from Infectious Diseases & International Health Division Chief, Eric Houpt, MD



Eric R. Houpt, MD

If 2020 was the first year of the pandemic, 2021 was the year of promise, and 2022 will be the year of perseverance. On the plus side, we're still standing because of the tremendous gains that the medical and scientific community has produced, such as vaccines, drug regimens, public health measures, and an enormous amount of hard work and grit. On the other hand, there remains considerable resistance to these measures in society, taking us to a world of endemic COVID and bringing burnout and disengagement.

Despite this half-empty half-full new normal, the Division of Infectious Diseases and International Health has a lot to be proud of. Nearly every faculty member has been involved in COVID in some way — be it leading local and regional efforts of infection control, COVID testing, clinical research of new therapies and vaccines, implementation of practice guidelines, laboratory research on pathogenesis, global COVID, surveillance, discussions of health equity, and more.

And it's not just COVID. The Division's clinical workload continues to increase, providing inpatient consults for the most complex

patients in the hospital and the most immunocompromised. Our clinic is being reorganized (Dr. Christopher Arnold and others), and we provide superb care in our Ryan White clinic (Dr. Rebecca Dillingham and others). Our research runs from basic and clinical research to trials to epidemiology, implementation science, and policy, and our funding exceeded \$17M in 2021, topping the past several years.

For 2022 we have some well-deserved retirements (Dr. Gerald Donowitz) and are excited about our new hires (Dr. Jie Sun, Dr. Tarina Parpia). Many more details on the Division follow below. So with a clear-eyed attitude of perseverance, we wish for a Happy New Year in 2022.

~ Eric R. Houpt, MD

# **INFECTIOUS DISEASES SEMINARS & LECTURES**

ID Case Conference
ID Didactic and Fellows Research Conferences
HIV Lectures
HIV Case Conferences
ID and Global Biothreats Seminar Series
ID and Global Biothreats Research-in-Progress
ID Clinical Journal Club
Translational ID and Global Biothreats Journal Club
Transplant Lecture Series
Microbiology Seminars
Beirne B. Carter Center for Immunology Seminars

# **Division of Infectious Diseases and International Health Research Update**

We are pleased to announce that Jie Sun, PhD, will join the Division of Infectious Diseases and International Health as a Professor in January 2022. In addition to his primary appointment in Infectious Diseases, he will have a secondary appointment in Microbiology and Immunology Cancer Biology and be an integral member of the Carter Immunology Center. Dr. Sun did his graduate work at the University of Pennsylvania in the laboratory of Ed Pearce, who is well-known to the ID Division for his work on helminth immunology, and then did his post-doctoral training at UVA under the guidance of Dr. Tom Braciale. We recruited him back to UVA from Mayo Clinic in Rochester, Minnesota.

Dr. Sun conducts both basic and clinical research in cellular lung immunity and immunopathology, notably in the context of viral infections such as influenza, respiratory syncytial virus, and SARS-CoV2. He also has interests in the impact of aging, tissue repair, and chronic sequelae following respiratory infections. Dr. Sun's laboratory has recently discovered key cell types and pathways that promote chronic lung inflammation and fibrosis after severe viral pneumonia (Science Immunology 2020, 2021 and Immunity 2021). Dr. Sun is a highly collaborative scientist, and we look forward to his expertise and insights that will cross many disciplines.

Under the guidance of Dr. Bill Petri, our NIH T32 Infectious Diseases Training Grant received a perfect score! This training grant, which has been continuously funded for 45 years, supports our Infectious Disease fellows' research training and uniquely graduate student training. This allows for collaborative training opportunities between these two groups of trainees. Dr. Alison Criss, Microbiology, Immunology, and Cancer Biology, has taken on the role of Co-PI, and Dr. Scott Heysell, has also assumed a leadership role as Associate Director.

During this pandemic year, many of our faculty expanded their research activities to include COVID-19 research (see publications below). A few of these efforts are highlighted. Early on, Dr. Amy Mathers met this challenge head-on by creating one of the first in-house PCR testing kits in the state and then went on to develop wastewater testing for the University of Virginia, which enabled students to return to grounds. For these efforts, Dr. Mathers received the University of Virginia Licensing & Ventures Group's Edlich-Henderson Innovator of the Year. Dr. Eric Houpt led a state-wide seroprevalence study for SARS CoV-2 and identified associated risk factors. Dr. Patrick Jackson led clinical trials at UVA Health System to test the efficacy of remdesivir for hospitalized adults with Covid-19. Dr. Bill Petri has tackled COVID-19 by gathering together impressive collaborative teams that include multiple institutions both here and abroad and industrial partners. His efforts involve identifying IL-13 as a driver of COVID-19 severity, which has led to a clinical trial of dupilumab, which targets the IL4 receptor alpha and results in inhibiting both IL-4 and IL-13 signaling. The Division's COVID-19 activities also extend internationally. Dr. Mami Taniuchi received an award for COVID-19 surveillance in environmental samples in Bangladesh. Dr. Margaret Kosek was awarded a CARES Supplement on her CDC U01 on acute febrile illness to study transmission dynamics of COVID-19 in Peru.



# **Division of Infectious Diseases and International Health Related Publications**

Moreau GB, Burgess SL, Sturek JM, Donlan AN, Petri WA, Mann BJ. <u>Evaluation of K18-hACE2 Mice as a Model of SARS-CoV-2 Infection</u>. Am J Trop Med Hyg. 2020 Sep;103(3):1215-1219.

Meyer JS, Robinson G, **Moonah S**, Levin D, McGahren E, Herring K, Poulter M, Waggoner-Fountain L, Shirley DA. <u>Acute appendicitis in four children with SARS-CoV-2 infection</u>. J Pediatr Surg Case Rep. 2021 Jan;64:101734.

Wiencek JR, Head CL, Sifri CD, Parsons AS. <u>Clinical Ordering Practices of the SARS-CoV-2 Antibody Test at a Large Academic Medical Center</u>. Open Forum Infect Dis. 2020 Oct 9;7(10):ofaa406.

Donlan AN, Sutherland TE, Marie C, Preissner S, Bradley BT, Carpenter RM, Sturek JM, Ma JZ, Moreau GB, Donowitz JR, Buck GA, Serrano MG, Burgess SL, Abhyankar MM, Mura C, Bourne PE, Preissner R, Young MK, Lyons GR, Loomba JJ, Ratcliffe SJ, Poulter MD, Mathers AJ, Day AJ, Mann BJ, Allen JE, Petri WA Jr. IIL-13 is a driver of COVID-19 severity. JCI Insight. 2021 Aug 9;6(15):e150107.

Damluji AA, Wei S, Bruce SA, Haymond A, Petricoin EF, Liotta L, Maxwell GL, Moore BC, Bell R, Garofalo S, **Houpt ER**, Trump D, deFilippi CR. <u>Seropositivity of COVID-19 among asymptomatic healthcare workers:</u> <u>A multi-site prospective cohort study from Northern Virginia, United States.</u> Lancet Reg Health Am. 2021 Oct;2:100030.

Migliori GB, Thong PM, Alffenaar JW, Denholm J, Tadolini M, Alyaquobi F, Blanc FX, Buonsenso D, Cho JG, Codecasa LR, Danila E, Duarte R, García-García JM, Gualano G, Rendon A, Silva DR, Souleymane MB, Tham SM, Thomas TA, Tiberi S, Udwadia ZF, Goletti D, Centis R, D'Ambrosio L, Sotgiu G, Ong CWM; Global Tuberculosis Network. *Gauging the impact of the COVID-19 pandemic on tuberculosis services: a global study*. Eur Respir J. 2021 Nov 11;58(5):2101786.

Abhyankar MM, Mann BJ, Sturek JM, Brovero S, Moreau GB, Sengar A, Richardson CM, Agah S, Pomés A, Kasson PM, Tomai MA, Fox CB, Petri WA Jr. <u>Development of COVID-19 vaccine using a dual Toll-like receptor ligand liposome adjuvant</u>. NPJ Vaccines. 2021 Nov 18;6(1):137.

Mathers AJ. The practical challenges of making clinical use of the quantitative value for SARS-CoV-2 viral load across several dynamics. Clin Infect Dis. 2020 Jul 10:ciaa958.

Callahan V, Hawks S, Crawford MA, Lehman CW, Morrison HA, Ivester HM, Akhrymuk I, Boghdeh N, Flor R, Finkielstein CV, Allen IC, Weger-Lucarelli J, Duggal N, Hughes MA, Kehn-Hall K. <u>The Pro-Inflammatory Chemokines CXCL9, CXCL10 and CXCL11 Are Upregulated Following SARS-CoV-2 Infection in an AKT-Dependent Manner. Viruses. 2021 Jun 3;13(6):1062.</u>

Qin CX, Moore LW, Anjan S, Rahamimov R, Sifri CD, Ali NM, Morales MK, Tsapepas DS, Basic-Jukic N, Miller RA, van Duin D, Santella RN, Wadei HM, Shah PD, Gage N, Malinis M, Aslam S, Todesco E, Werbel WA, Avery RK, Segev DL. <u>Risk of Breakthrough SARS-CoV-2 Infections in Adult Transplant Recipients</u>. Transplantation. 2021 Nov 1;105(11):e265-e266.

Khazanchi R, Powers SD, Rogawski McQuade ET, McManus KA. *Inequities in the Geographic Accessibility of COVID-19 Biomedical Therapeutic Trials in the United States*. J Gen Intern Med. 2021 Nov;36(11):3650-3653.

Fang FC, Benson CA, Del Rio C, Edwards KM, Fowler VG, Fredricks DN, Limaye AP, Murray BE, Naggie S, Pappas PG, Patel R, Paterson DL, Pegues DA, Petri WA, Schooley RT. <u>COVID-19-Lessons Learned and Questions Remaining</u>. Clin Infect Dis. 2021 Jun 15;72(12):2225-2240.

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# **Division of Infectious Diseases and International Health Related Publications**

Migliori GB, Visca D, van den Boom M, Tiberi S, Silva DR, Centis R, D'Ambrosio L, **Thomas T**, Pontali E, Saderi L, Schaaf HS, Sotgiu G; contributing members of the Global Tuberculosis Network. <u>Tuberculosis</u>, <u>COVID-19 and hospital admission: Consensus on pros and cons based on a review of the evidence</u>. Pulmonology. 2021 May-Jun;27(3):248-256.

Sasson JM, Campo JJ, Carpenter RM, Young MK, Randall AZ, Trappl-Kimmons K, Oberai A, Hung C, Edgar J, Teng AA, Pablo JV, Liang X, Yee A, Petri WA Jr, Camerini D. <u>Diverse Humoral Immune Responses in Younger and Older Adult COVID-19 Patients</u>. mBio. 2021 Jun 29;12(3):e0122921.

Rogawski McQuade ET, Guertin KA, Becker L, Operario D, Gratz J, Guan D, Khan F, White J, McMurry TL, Shah B, Garofalo S, Southerland M, Bear K, Brush J, Allen C, Frayser A, Vokes R, Pershad R, Peake L, deFilippi C, Barackman K, Bearman G, Bidanset A, Farrell F, Trump D, Houpt ER. <u>Assessment of Seroprevalence of SARS-CoV-2 and Risk Factors Associated With COVID-19 Infection Among Outpatients in Virginia</u>. JAMA Netw Open. 2021 Feb 1;4(2):e2035234.

Colosi LM, Barry KE, Kotay SM, Porter MD, Poulter MD, Ratliff C, Simmons W, Steinberg LI, Wilson DD, Morse R, Zmick P, Mathers AJ. <u>Development of Wastewater Pooled Surveillance of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) from Congregate Living Settings</u>. Appl Environ Microbiol. 2021 Jun 11;87(13):e0043321.

VanderWerf M, Bernard J, Barta DT, Berg J, Collins T, Dowdy M, Feiler K, Moore DL, Sifri C, Spargo G, Taylor CW, Towle CB, Wibberly KH. <u>Pandemic Telemedicine Technology Response Plan and Technology Assessment Phase 2: Pandemic Action Plan Key Issues and Technology Solutions for Health Care Delivery Organizations in a Pandemic. Telemed J E Health. 2021 Jul 15.</u>

Kalil AC, Patterson TF, Mehta AK, Tomashek KM, Wolfe CR, Ghazaryan V, Marconi VC, Ruiz-Palacios GM, Hsieh L, Kline S, Tapson V, Iovine NM, Jain MK, Sweeney DA, El Sahly HM, Branche AR, Regalado Pineda J, Lye DC, Sandkovsky U, Luetkemeyer AF, Cohen SH, Finberg RW, Jackson PEH, Taiwo B, Paules CI, Arguinchona H, Erdmann N, Ahuja N, Frank M, Oh MD, Kim ES, Tan SY, Mularski RA, Nielsen H, Ponce PO, Taylor BS, Larson L, Rouphael NG, Saklawi Y, Cantos VD, Ko ER, Engemann JJ, Amin AN, Watanabe M, Billings J, Elie MC, Davey RT, Burgess TH, Ferreira J, Green M, Makowski M, Cardoso A, de Bono S, Bonnett T, Proschan M, Deye GA, Dempsey W, Nayak SU, Dodd LE, Beigel JH; ACTT-2 Study Group Members. <u>Baricitinib plus Remdesivir for Hospitalized Adults with Covid-19</u>. N Engl J Med. 2021 Mar 4;384(9):795-807. doi: 10.1056/NEJMoa2031994.

Kalil AC, Mehta AK, Patterson TF, Erdmann N, Gomez CA, Jain MK, Wolfe CR, Ruiz-Palacios GM, Kline S, Regalado Pineda J, Luetkemeyer AF, Harkins MS, Jackson PEH, Iovine NM, Tapson VF, Oh MD, Whitaker JA, Mularski RA, Paules CI, Ince D, Takasaki J, Sweeney DA, Sandkovsky U, Wyles DL, Hohmann E, Grimes KA, Grossberg R, Laguio-Vila M, Lambert AA, Lopez de Castilla D, Kim E, Larson L, Wan CR, Traenkner JJ, Ponce PO, Patterson JE, Goepfert PA, Sofarelli TA, Mocherla S, Ko ER, Ponce de Leon A, Doernberg SB, Atmar RL, Maves RC, Dangond F, Ferreira J, Green M, Makowski M, Bonnett T, Beresnev T, Ghazaryan V, Dempsey W, Nayak SU, Dodd L, Tomashek KM, Beigel JH; ACTT-3 study group members. <u>Efficacy of interferon beta-1a plus remdesivir compared with remdesivir alone in hospitalised adults with COVID-19: a double-bind, randomised, placebo-controlled, phase 3 trial.</u> Lancet Respir Med. 2021 Oct 18:S2213-2600(21)00384-2.

Shirley DA, Moonah S. <u>COVID-19 and Corticosteroids: Unfamiliar but Potentially Fatal Infections That Can Arise following Short-Course Steroid Treatment</u>. Am J Trop Med Hyg. 2021 Jan 6;104(3):790-3.

# **Division of Infectious Diseases and International Health Research Update**

In addition to COVID-19-related research, the Division has an active and diverse research portfolio. Our early-stage investigators are thriving, receiving funding and publishing data. Dr. Greg Madden's research interests include hospital epidemiology, diagnostic stewardship, and translating advances in basic sciences and immunology to improve the management of healthcare-associated infections, particularly Clostridioides difficile infection. He was recently awarded a K23 proposal entitled "Immune profiling to stratify C. difficile infection outcomes." Dr. Kate McManus is an emerging national leader in studying healthcare delivery models that improve outcomes for people with HIV. Dr. McManus expanded her work to assess the impact of the Affordable Care Act (ACA) in multiple states and received a contract with NASTAD to update and conduct the 2021 National Ryan White HIV/AIDS Program Part B and AIDS Drug Assistance Program Survey. Dr. Stacey Burgess has an R01 to study how gut microbiome communication with the bone marrow regulates intestinal inflammation, exploring how mucosal immunology and the fundamental process of hematopoiesis by commensal bacteria can be altered influence the systemic immune response and secondary challenge with pathogens via innate immunity. Dr. Chelsea Marie received an R01 to examine the role of host Protein Kinase  ${
m C}$  in cryptosporidiosis.  ${
m Dr.}$  Marie has also expanded her research to identify other genetic factors that influence susceptibility to enteric pathogens and immune markers for C. difficile infections. Dr. Matt Crawford investigates mechanisms of antimicrobial action and microbial strategies of resistance. Over the past year, working with Dr. Molly Hughes, their collaborative group has focused on optimizing a lead-series of chemokine-derived peptides that directly kill multidrug-resistant bacterial pathogens, setting the stage for evaluating therapeutic efficacy in pre-clinical models of infection.

# **Selected Publications from 2021**

McCowin SE, Moreau GB, Haque R, Noble JA, McDevitt SL, Donowitz JR, Alam MM, Kirkpatrick BD, **Petri WA, Marie C**. <u>HLA class I and II associations with common enteric pathogens in the first year of life</u>. EBioMedicine. 2021 Apr 25;67:103346.

Sheridan K, Lane M, Kim T, Eby J. Infectious Disease Providers' Knowledge of and Engagement in Quality Improvement. 2021. Open Forum Infectious Diseases. (In Press, OFID-D-21-01127R1) DeBoer MD, Platts-Mills JA, Elwood SE, Scharf RJ, McDermid JM, Wanjuhi AW, Jatosh S, Katengu S, Parpia TC, Rogawski McQuade ET, Gratz J, Svensen E, Swann JR, Donowitz JR, Mdoe P, Kivuyo S, Houpt ER, Mduma E. Effect of scheduled antimicrobial and nicotinamide treatment on linear growth in children in rural Tanzania: A factorial randomized, double-blind, placebo-controlled trial. PLoS Med. 2021 Sep 28;18(9):e1003617.

Costa DVS, Moura-Neto V, Bolick DT, Guerrant RL, Fawad JA, Shin JH, Medeiros PHQS, Ledwaba SE, Kolling GL, Martins CS, Venkataraman V, Warren CA, Brito GAC. S100B Inhibition Attenuates Intestinal Damage and Diarrhea Severity During Clostridioides difficile Infection by Modulating Inflammatory Response. Front Cell Infect Microbiol. 2021 Sep 10;11:739874.

Jan N, Hays RA, Oakland DN, Kumar P, Ramakrishnan G, Behm BW, Petri WA Jr, Marie C. Fecal Microbiota Transplantation Increases Colonic IL-25 and Dampens Tissue Inflammation in Patients with Recurrent Clostridioides difficile. mSphere. 2021 Oct 27;6(5):e0066921.

Donowitz JR, Pu Z, Lin Y, Alam M, Ferdous T, Shama T, **Taniuchi M**, Islam MO, Kabir M, Nayak U, Faruque ASG, Haque R, Ma JZ, **Petri WA Jr.** *Small Intestine Bacterial Overgrowth in Bangladeshi Infants Is Associated With Growth Stunting in a Longitudinal Cohort*. Am J Gastroenterol. 2021 Oct 25.

Alffenaar JC, Marais BJ, Thomas TA. Is a high dose sufficient to achieve high isoniazid exposure in children affected by multidrug-resistant TB? Int J Tuberc Lung Dis. 2021 Nov 1;25(11):879-880.

Pholwat S, Liu J, Taniuchi M, Haque R, Alam MM, Faruque ASG, Ferdous T, Ara R, Platts-Mills JA, Houpt ER. <u>Use of molecular methods to detect Shigella and infer phenotypic resistance in a Shigella treatment study</u>. J Clin Microbiol. 2021 Oct 20:JCM0177421.

Kabir M, Alam M, Nayak U, Arju T, Hossain B, Tarannum R, Khatun A, White JA, Ma JZ, Haque R, Petri WA Jr, Gilchrist CA. Nonsterile immunity to cryptosporidiosis in infants is associated with mucosal IgA against the sporozoite and protection from malnutrition. PLoS Pathog. 2021 Jun 28;17(6):e1009445.

# **Selected Publications from 2021**

- Marks F, Liu J, Soura AB, Gasmelseed N, Operario DJ, Grundy B, Wieser J, Gratz J, Meyer CG, Im J, Lim JK, von Kalckreuth V, Cruz Espinoza LM, Konings F, Jeon HJ, Rakotozandrindrainy R, Zhang J, Panzner U, Houpt E. <u>Pathogens That Cause Acute Febrile Illness Among Children and Adolescents in Burkina Faso, Madagascar, and Sudan</u>. Clin Infect Dis. 2021 Oct 20;73(8):1338-1345.
- Shin JH, Pawlowski SW, Warren CA. <u>Teaching old mice new tricks: the utility of aged mouse models of C. difficile infection to study pathogenesis and rejuvenate immune response</u>. Gut Microbes. 2021 Jan-Dec;13(1):1966255. doi: 10.1080/19490976.2021.1966255. PMID: 34432545; PMCID: PMC8405153.
- Gulleen EA, Adams SV, Chang BH, Falk L, Hazard R, Kabukye J, Scala J, Liu C, Phipps W, Abrahams O, Moore CC Factors and Outcomes Related to the Use of Guideline-Recommended Antibiotics in Patients With Neutropenic Fever at the Uganda Cancer Institute. Open Forum Infect Dis. 2021 Jun 10;8(7):ofab307.
- Powers SD, Rogawski McQuade ET, Killelea A, Horn T, McManus KA. <u>Worsening Disparities in State-Level Uptake of Human Immunodeficiency Virus Preexposure Prophylaxis</u>, 2014-2018. Prophylaxis, 2014-2018. Open Forum Infect Dis. 2021 Jun 4;8(7):ofab293.
- Abhyankar MM, Orr MT, Kinsey R, Sivananthan S, Nafziger AJ, Oakland DN, Young MK, Farr L, Uddin MJ, Leslie JL, Burgess SL, Liang H, De Lima I, Larson E, Guderian JA, Lin S, Kahn A, Ghosh P, Reed S, Tomai MA, Pedersen K, Petri WA Jr, Fox CB. *Optimizing a Multi-Component Intranasal Entamoeba Histolytica Vaccine Formulation Using a Design of Experiments Strategy*. Front Immunol. 2021 Jun 25;12:683157.
- Shirley DA, Sharma I, Warren CA, Moonah S. <u>Drug Repurposing of the Alcohol Abuse Medication Disulfiram as an Anti-Parasitic Agent</u>. Front Cell Infect Microbiol. 2021 Mar 11;11:633194.
- Mohamed S, Mvungi HC, Sariko M, Rao P, Mbelele P, Jongedijk EM, van Winkel CAJ, Touw DJ, Stroup S, Alffenaar JC, Mpagama S, Heysell SK. Levofloxacin pharmacokinetics in saliva as measured by a mobile microvolume UV spectrophotometer among people treated for rifampicin-resistant TB in Tanzania. J Antimicrob Chemother. 2021 Mar 1:dkab057.
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# **Division of Infectious Diseases and International Health Educational Update**

Led by Program Director Dr. Chris Moore and Associate Program Director Dr. Kate McManus, University of Virginia's Infectious Disease Fellowship for MDs is a three-year program supported by two NIH T-32 training grants to produce world-class physicians dedicated to a career in academic infectious diseases. Our program offers rigorous training and supervised experience with faculty members with broad clinical and research expertise. The first year of training is dedicated to research, and the second and third years of training are divided between clinical training and research. Clinical training takes place through separate inpatient consultative services in general and transplant/immunocompromised infectious diseases. There are also opportunities to participate in outpatient HIV, general, transplant, mycobacterial, Clostridium difficile, travelers, and musculoskeletal infectious diseases clinics.

Opportunities abound for rich interdisciplinary experiences in cutting-edge fundamental science, translational, clinical, and epidemiologic infectious diseases research. Research takes place in state-of-the-art laboratories, clinics, hospitals at UVA, and worldwide facilities. Research themes include care for patients with HIV; modeling and outcomes related to critical care and severe sepsis; epidemiology of multi-drug resistant organisms; global health; diagnostics; immunology; host susceptibility to infection; host-pathogen interactions; and pathogenesis of infectious diseases. Our fellows have presented work nationally and internationally at IDWeek, the American Society of Tropical Medicine and Hygiene, and the TB Union Meeting in the last year. They have published their research in the following journals: AIDS Patient Care and STDs, Anti-Infective Therapy, Antimicrobial Agents and Chemotherapy, Clinical Infectious Diseases, Clinical Microbiology and Infection, Infection Control and Hospital Epidemiology, Lancet Infectious Diseases, mBio, Open Forum Infectious Diseases, and PLoS Medicine, among others.

After a successful recent match, we look forward to welcoming Tom Flynn from Cleveland Clinic, David Lehman from Inova Fairfax, and Isaura Rigo from New Hanover Medical Center to our fellowship program in 2022. We welcome hearing from residents and students interested in working on research projects in the Division. Please contact <u>Dr. Chris Moore</u> (ccm5u@hscmail.mcc.virginia.edu) or <u>Dr. Kate McManus</u> (km8jr@hscmail.mcc.virginia.edu) if you would like to be connected to a project and follow our Twitter feed (<u>@</u> <u>UVA ID</u>) to stay up to date with our news and activities!

# **Current Infectious Diseases Fellows - Year One**



Catherine Bielick
Residency:Boston University
Mentors:Becca Dillingham and
Kate McManus
Research:Opportunistic
infections in AIDS



Maria Geba
Residency: University of Virginia
Mentor: Tania Thomas
Research: Anal cancer screening in
HIV populations



Ghassan Illaiwy
Residency:Georgetown Medical
Center
Mentor:Tania Thomas
Research:TB screening and
diagnostics

# **Current Infectious Diseases Fellows - Year Two**



Brian Grundy
Residency: University Texas
Austin
Mentor: Eric Houpt
Research: Acute febrile illness in
sub-Saharan Africa



Jackie Hodges
Residency: University of Virginia
(ABIM research pathway)
Mentors: Becca Dillingham & Scott
Heysell
Research: Engagement in HIV, HCV,
TB care in Virginia and Russia



Jen Sasson
Residency: University of Virginia
Mentors: William Petri
Research: COVID-19 immunology/
clinical trial of anti-IL-13

# **Current Infectious Diseases Fellows - Year Three**



Tarina Parpia
Residency: Georgetown
Mentor: James Platts-Mills
Research: Enteric infection in
Tanzanian children



Evan Robinson
Residency: University of Indiana
Mentor: Amy Mathers
Research: Antimicrobial
stewardship and hospital infections



Dan Van Aartsen
Residency: Case Western Reserve
Mentor: Scott Heysell
Research: Pharmacokinetics of
anti-TB therapy

# **Current Infectious Diseases Fellows - Year Four**



Yosra Alkabab
Residency: University of Virginia
(ABIM research pathway)
Mentor: Scott Heysell
Research: Tuberculosis and diabetes
in Bangladesh

# STAFF PROFILE - Lauren Swindell



Tell us a little bit about yourself.

I am originally from Raleigh, NC, and have been at UVA for just over a year. My husband and I love to travel any chance we get. We live in Charlottesville with our rescue Shih-Poo, Daphne "Doodlebug," and work hard to give her a life of leisure!

### Why Healthcare?

Like most in the field, I fell into Research Administration by accident, but I'm so grateful I did. As evidenced in the last two years, the work we do supporting research is so important. There's a great feeling of accomplishment knowing your work makes a difference. The field is growing so rapidly there's always an opportunity to grow and learn.

### What brought you to Charlottesville?

I came to Charlottesville for this job! I was looking for an opportunity closer to my family, which would allow me to expand

my professional skillset. The city is beautiful, the people are friendly and welcoming, and there's so much to do! I love it!

### What excites you about your work?

Research Administration is so dynamic! Just when you think you know what is going on, that's when something unexpected comes up that changes everything you thought you knew. There's no such thing as a completed to-do list! You're constantly on your toes and never know what is coming down the pike.

Proudest/greatest achievement outside the professional realm? In 2019 I fulfilled a lifelong dream to go on a tour of Egypt. I went through a tourism company that has a partnership with the Egyptian Department of Antiquities and Tourism. Because of their collaboration, I got to do things not usually available to tourists. I attended private lectures given by Dr. Zahi Hawaas, was given a tour of Karnak by the Head of Antiquities, Dr. Mostafa Waziri, had dinner with Jehan Sadat at her home in Cairo, and had special access to all the temple complexes and museums we went to, including tombs in Valley of the Kings that had been closed to public viewing. One of the coolest things was getting access to the subterranean chamber under the Great Pyramid. You descend a long, cramped passage off the Grand Gallery. It eventually levels off, and you belly-crawl through the sand until you reach the chamber. You can almost feel the weight of the pyramid above you! When I close my eyes, I can still feel the sand on my hands. It was surreal, and I dream of going back!



### Next life?

Studying history and archaeology and spending my career digging in the sand.

### What are you usually doing on the weekend?

Moving to a new city in a pandemic limits your ability to get to know the area! I've volunteered with International Rescue Committee and should have my orientation with them after the holidays. I'm looking forward to getting to know some local people and making a positive impact.

### How did you meet your partner?

My husband and I met as freshmen at Furman University (Go Paladins!). We were in brother/sister halls and became good friends - he was my escape call when I went on dates! We started dating our sophomore year, moved to China together after graduation, and married soon after that.

# **STAFF PROFILE - Lauren Swindell** (continued)

What's one thing you always have in your fridge?

Diet Coke! Although I've been cutting back recently, sometimes that afternoon caffeine kick is hard to do without.

Favorite vacation/activity spot?

I love to travel all over the world and explore new places, but if I'm staying (relatively) local, it's hard to beat Charleston, SC - great food, interesting history, relaxing beaches!

Most admired person, and why?

I love learning about strong women in history, and it's hard to pick just one! I think the common thread amongst them is that they all show relentless determination in the face of adversity and pick themselves up when they get knocked down, even against impossible odds.

Best advice anyone ever gave you?

You can't control the situation, only your response to it.

What about you would surprise us?

I am an avid reader and a huge history buff! My favorite historians are Alison Weir and Zahi Hawaas. Each August, the Greenville, SC Literacy Association puts on the "Really Big, Really Good, Really Cheap Book Sale." With books going for \$2-\$3 each and supporting a great cause, it's easy to come home with a carload! When we were living in South Carolina, my husband and I amassed a library of almost 900 books but had to cull them as we've moved.

What is a talent or skill you don't have that you wish you did? I wish I could draw and paint - what a beautiful talent to have!

Favorite fictional characters?

Lady Edith Crawley from Downton Abbey. A beautifully written character with ambition, flaws, perseverance, and grace. Again and again, she took control of her life with fearless determination, even when things didn't go her way. I think it's a great lesson!

If you could go back in time, what year would you travel to?

I become obsessed with a different historical era every few years. Right now, I'm on a big War of the Roses/Tudor Dynasty kick.



and Hindi.

What is the last book you read for pleasure?

The Martian by Andy Weir. I first read it years ago, and it remains one of my go-to favorites when I need something to get lost in for a few hours. Diana Gabaldon's "Go Tell the Bees That I am Gone" just came out, and I'm saving it for the holiday break with great anticipation!

What's the most unusual thing you have ever eaten? Living in China, I got to try a few things that were a little out of the ordinary for me — hedgehog, jellyfish, and yak being the most memorable!

Do you collect anything?

Books! My husband and I always buy a copy of the first Harry Potter book in the language of the area we're visiting. You can find it anywhere you go, so it makes collecting easy! We have it in Korean, Mandarin, Vietnamese, Arabic, Icelandic,

What was your first job, how old were you?

I worked at Petite Sophisticate at the mall when I was 18. I used my first paycheck to buy a pair of black leather pants but never had the courage to wear them. They're still hanging in a closet at my parent's house with the tags on them!

 $^{14}$ 

# FELLOW PROFILE - Jennifer Sasson



Tell us a little bit about yourself.

I've been at UVA for about five years. I'm originally from Rochester, New York, and went to medical school in Syracuse, New York. I did my internal medicine residency at UVA and am now a second-year Infectious Disease fellow. I live in Charlottesville with my husband, a history teacher at Charlottesville Catholic School and my 3-year-old golden retriever named Colbie.

### Why Healthcare?

I've wanted to be a doctor for as long as I can remember. I don't know exactly where it comes from as there is no one in my family in health care, but I've always loved science and wanted to make a difference in other people's lives.

### What brought you to Charlottesville?

The medicine program at UVA, the beautiful city and mountains, the wineries and breweries, and the great weather.

### What excites you about your work?

Everything! There's nothing more fun than a good mystery ID case, seeing a patient with an unusual pathogen, or thinking outside of the box through research. I also enjoy asking patients about their pets in clinic (a common question in ID).

What is your proudest/greatest achievement outside the professional realm?

My childhood best friend named

her firstborn daughter after me. I also won trivia at Star Hill last week for the first time in my life.

### Next life?

As in reincarnation? Probably a cat; I like naps.

## What are you usually doing on the weekend?

Pre COVID, we traveled a lot within the US to visit friends and abroad. We like to hike over in Shenandoah with our dog. We visit wineries/ breweries and routinely try new local eats. We are also Buffalo Bills, Syracuse basketball (my husband), and UVA basketball fans (me), so we watch a lot of sports both in person and on TV.

### How did you meet your partner?

We are both from Rochester, New York, and met at a YMCA summer camp. He was a camp counselor, and I was the camp EMT.



What is the one thing you always have in your fridge?

Depending on the energy level- New York City or Outer Banks!

### Most admired person, and why?

My parents taught me to love science, stay curious, learn from mistakes, make the most of life, and, above all, LAUGH.

What is the best advice anyone ever gave you? Get dual computer monitors.

### What about you would surprise us?

I was stung by a scorpion in my sleep while delivering medical care to rural mountain communities in Nicaragua. I've never gotten pancreatitis.

What is a talent or skill you don't have that you wish you did?

Playing the drums and the piano. Both I have tried to learn and failed.

What was your first job, how old were you?

Taco Bell. I was 16. And yes, I would still eat there!



# **FACULTY PROFILE - Shannon Moonah**



Tell us a little bit about yourself.

I've been at the University of Virginia for nine years. I was born and raised on the island of Jamaica, where I attended medical school at the University of the West Indies, Mona. For residency, I moved to the United States to train at Howard University in Washington, D.C., which included clinical and research electives at the National Institutes of Health. I completed graduate training in molecular microbiology and immunology at the Johns Hopkins Bloomberg School of Public Health. I then completed a four-year clinical and research fellowship program in infectious diseases at UVA before joining the faculty in 2016. In addition to caring for patients, my lab studies molecular parasitology, intestinal inflammation, and repair.

### What brought you to Charlottesville?

The Infectious Diseases program at the University of Virginia is renowned for excellence in research, education, and clinical service, so this program was top of my list of places to train. UVA has more than lived up to these expectations. As a minority in medicine and science, UVA has provided

a nurturing and supportive academic environment to successfully secure funding through early career grants to continue my growth as a physician-scientist. Since being here, I have been fortunate to work with many outstanding

leaders in the field, such as Dr. Bill Petri, an inspirational physician-scientist.

# Why Research/ Healthcare?

Looking back, my interest in using research to improve healthcare outcomes has been shaped by some of my earlier life experiences. Growing up in a developing country fostered an interest in improving disease outcomes of tropical infections. Understanding inflammation became a stronger focus for me during medical school, after my mother was diagnosed with rheumatoid arthritis. As I watched her suffer from pain because the treatment options available to her where we lived were either ineffective or too toxic, I felt the need to help improve these limited treatment options. With time, I began to see the overlap between this dilemma and several other inflammatory conditions, such as IBD, fortifying a desire to improve an understanding of inflammation to promote healing.



### Next life?

Physician-scientist. I honestly cannot imagine myself doing anything else but this. There is no greater joy than caring for patients, and I always feel at home in the lab.

### How did you meet your partner?

I met my wife, Debbie, during our first year of medical school. She specialized in pediatric infectious diseases and now heads her division here at UVA. She is the kindest person I have ever met, and I knew from the start that she was the one for me.

### What are you usually doing on the weekend?

We have two children, Chelsea and Daniel, the greatest joys of our lives. Chelsea is a creative, flute-playing knitter. Daniel is a good-natured, Minecraft-playing sports enthusiast. We shoot basketball hoops or play football in the backyard on the weekends.

### Best advice anyone ever gave you?

Many mentors along the way have reminded me, either through their example or advice, that it is just as important to enjoy the pursuit as the reward.