



JOHNS HOPKINS

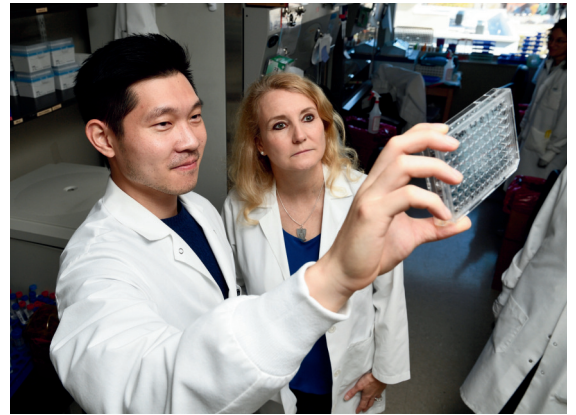
M E D I C I N E

DIVISION OF INFECTIOUS DISEASES

2024 ANNUAL REPORT

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OUR MISSION

We're committed to combating infectious diseases through research, patient care, prevention, and education.

Director's Greeting

Amita Gupta, MD, MHS, FIDSA

Florence Sabin Professor of Infectious Diseases

Director, Division of Infectious Diseases

Johns Hopkins School of Medicine



We are standing in a perilous moment, and certainly one which none of us could foresee a year ago. Intellectual and scientific distrust and actions of isolationism are undermining our country's global leadership in advancement across sectors. The partnership between the U.S. government and academic research institutions stretches back to World War II and has grown into a powerful force of scientific innovation. What started as an arms race to create the atomic bomb, the federally-funded academic research enterprise has saved hundreds of millions of lives over the last 80+ years.

While we, and our peer academic research institutions across the country, contemplate implications for our collective biomedical discovery work going forward, the ramifications for patients who rely on advancements in evidence-based care is what distresses us all. Diagnostic tests, vaccines, and preventive medications are developed with federal support. Federally funded research yields strategies for outreach and connecting patients to, and retaining them in, life-saving health care. Treatments of last resort for so many are therapeutics offered only through participation in clinical trials. Improved health and lives for patients is the very core of everything we do, and is a mission which, until recently, the executive office shared and enthusiastically supported on behalf of public welfare. As public investment in advancing lifesaving breakthroughs for patients is cut, partnerships with industry and philanthropic organizations have never been more important.



While we, and our peer academic research institutions across the country, contemplate implications for our collective biomedical discovery work going forward, the ramifications for patients who rely on advancement in evidence-based care is what distresses us all.



We in infectious diseases are not hand-wringers. We are problem solvers. We are champions of trainees and young investigators. We are fierce advocates for the needs of our patients. We will not let the current climate keep us from the important work of our faculty, clinical providers, researchers, and staff, or from celebrating hard-fought wins that occur in the midst of set backs—those are, at the end of the day, the most rewarding wins of all.

I'm pleased to present our 2024 Annual Report for the Johns Hopkins Division of Infectious Diseases, with some updates about the state of our work since January 2025. I remain extraordinarily proud to work alongside 500 people who fight hard for wins, particularly in extraordinary times.

Amita

Learn more about charitable giving
to the Division of Infectious Diseases.



In Memoriam: Diane E. Griffin, MD, PhD

Valued colleague, friend, and mentor to many in the Division of Infectious Diseases

Johns Hopkins Bloomberg School of Public Health and the Division of Infectious Diseases

Diane Griffin, MD, PhD, a pioneering infectious-disease virologist, scientific leader, and Johns Hopkins professor, died October 28, 2024. She was 84.

At the time of her death, Dr. Griffin was chair emerita of the W. Harry Feinstone Department of Molecular Microbiology at the Johns Hopkins Bloomberg School of Public Health and vice president of the National Academy of Sciences.

A world-renowned expert on alphaviruses, acute encephalitis, measles, HIV, and malaria, Dr. Griffin was one of the most prominent scientific leaders of her generation. Her contributions to the field include demonstrating that measles virus infection causes death primarily by increasing susceptibility to other infections. She also showed that the measles virus leaves RNA particles for months after apparent recovery—which may contribute to the lifelong protective immunity from measles. Her work has been cited more than 24,700 times.

“My first real research experience as a fellow was working on a project in Diane’s lab,” said Dr. Robert Bollinger, Raj and Kamla Gupta Professor of Infectious Diseases. “I have vivid memories of her taking the time to sit with me in the lab for hours to show me how to ‘work with mice.’ She did not need to do this. But she was so dedicated to supporting and encouraging me and all of the many, many, many young investigators in her lab. Diane is the reason that I decided that I should give research a try. She was so brilliant; so kind, so encouraging and such a terrific role model for me and for so many others. For me, she defined what it meant to be a great mentor and great person. What a tremendous loss.”

Dr. Griffin joined Johns Hopkins in 1970 as a virology fellow in the School of Medicine, where she eventually became a full professor in 1985. In 1994, the Bloomberg School appointed Dr. Griffin chair of what was then the Department of Immunology and Infectious Disease. She renamed the department Molecular Microbiology and Immunology to reflect the growing importance of molecular biology across the basic science spectrum. She served as department chair from 1994 to 2014. She was named a University Distinguished Service Professor in 2010. She was inducted into the Maryland Women’s Hall of Fame in 2009.

“Diane was legendary in so many ways and a wonderful colleague whom I will greatly miss,” said Dr. Andrea Cox, professor of medicine and director of Hopkins’ medical scientist training program.

Diane Edmund was born on May 5, 1940, in Iowa City, Iowa, and grew up in Oklahoma City, Oklahoma. She received her BA in biology in 1962 from Augustana College, in Rock Island, Illinois.



Dr. Griffin pursued an MD and PhD in microbiology simultaneously at Stanford University, where she met her husband, John (Jack) Griffin. They married in 1965.

After earning an MD in 1968, she completed her residency in internal medicine at Stanford University Hospital while finishing her doctorate. She joined Johns Hopkins Medicine, along with her husband, in 1970.

“What a strong, brilliant, unflappable woman—so many memories of how she provided a leadership and investigative example for us all, plus was so personally supportive of each of us, with a lovely sense of humor,” said Dr. Cindy Sears, Bloomberg-Kimmel Professor of Cancer Immunotherapy.

Dr. Griffin was an elected fellow of the American Association for the Advancement of Science as well as the Infectious Diseases Society of America. A frequent participant on National Institutes of Health study sections, she chaired the Special AIDS Study Section and co-chaired the Board of Scientific Counselors at the National Institute of Allergy and Infectious Diseases (NIAID). She edited the *Journal of Virology* from 1994 to 2004.

Her many national leadership positions included president of the American Society for Virology and president of the American Society for Microbiology. She had served as vice president of the National Academy of Sciences since 2013. She was an international ambassador for science who chaired the US-Japan Viral Diseases Panel and advised the Israeli Vaccine Research Initiative and the WHO Ebola Vaccine Trial.

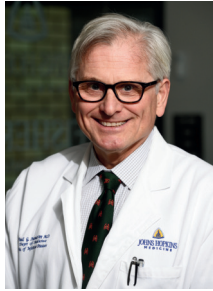
“Diane was a real leader in the field of virology and at Hopkins. She was warm, friendly, and I always enjoyed meeting and talking to her. She was a major force at the Academy of Sciences and at the American Society of Microbiology. Diane will be missed by many,” said Dr. Thomas Quinn, professor of medicine and founding director of the Johns Hopkins University Center for Global Health.

As a frequently requested search committee member, she guided the Institute of Medicine, NIAID Laboratory of Infectious Diseases, and NIAID Division Intramural Research in choosing their heads. She also helped the University select its current president, Ron Daniels; past deans of Medicine and Public Health; and numerous department chairs. Among her numerous awards and recognitions, she was elected to both the Institute of Medicine and the National Academy of Sciences in 2004 and the American Academy of Arts and Sciences in 2024. She received the 2016 Maxwell Finland Award for Scientific Achievement from the National Foundation for Infectious Diseases for outstanding scientific contributions to the understanding of infectious diseases and public health.

PEOPLE

With more than 500 dedicated employees, the Division of Infectious Diseases represents the largest division within the Department of Medicine at Johns Hopkins School of Medicine.

Endowed Professorships



Paul G. Auwaerter, MD, MBA, FIDSA
Ken and Sherrilyn Fisher Professor of Infectious Diseases
Clinical Director, Division of Infectious Diseases
Johns Hopkins School of Medicine



Amita Gupta, MD, MHS, FIDSA
Florence Sabin Professor of Infectious Diseases
Director, Division of Infectious Diseases
Johns Hopkins School of Medicine



Robert C. Bollinger, Jr., MD, MPH
Raj and Kamla Gupta Professor of Infectious Diseases
Division of Infectious Diseases
Johns Hopkins School of Medicine



Cynthia L. Sears, MD, FIDSA
Bloomberg-Kimmel Professor of Cancer Immunotherapy
Co-Director, Basic and Translational Research
Division of Infectious Diseases
Johns Hopkins School of Medicine



Natasha Chida, MD, MSPH
Dr. Myron L. Weisfeldt Professor in the Osler Medical Residency Program
Program Director, Osler Medical Residency
Division of Infectious Diseases
Johns Hopkins School of Medicine



David L. Thomas, MD, MPH, FIDSA
Stanhope Bayne-Jones Professor of Medicine
Co-Director, Center for AIDS Research
Clinical Core
Division of Infectious Diseases
Johns Hopkins School of Medicine

Professors

Paul Auwaerter, MD, MBA, FIDSA
Robin Avery, MD
John Baddley, MD, MSPH
Justin Bailey, MD, PhD
William Bishai, MD, PhD
Joel Blankson, MD, PhD
Robert Bollinger, MD, MPH
Richard Chaisson, MD
Larry Chang, MD, MPH
Sara Cosgrove, MD
Andrea Cox, MD, PhD, FIDSA
Joel Gallant, MD, MPH
Kelly Gebo, MD, MPH
Khalil Ghanem, MD, PhD
Jonathan Golub, PhD, MPH
Amita Gupta, MD, MHS, FIDSA
Petros Karakousis, MD, FIDSA
Gregory Kirk, MD, MPH, PhD, FIDSA
Gregory Lucas, MD, PhD, MPH

Yuka Manabe, MD, FIDSA
Lisa Maragakis, MD, MPH, FIDSA
Jack Murphy, PhD
Eric Nuermberger, MD
Kathleen Page, MD
Thomas Quinn, MD, FIDSA
Stuart Ray, MD, FIDSA
Anne Rompalo, MD
Cynthia Sears, MD, FIDSA
Maunank Shah, MD, PhD
Shmuel Shoham, MD, FIDSA
Janet Siliciano, PhD
Robert Siliciano, MD, PhD
Sunil Solomon, MBBS, PhD, MPH
Mark Sulkowski, MD
Chloe Thio, MD
David Thomas, MD, MPH, FIDSA
Jonathan Zenilman, MD, FIDSA

Associate Professors

Ashwin Balagopal, MD
Stephen Berry, MD, PhD
Laurence Borand, PhD
Natasha Chida, MD, MSPH
Christine Durand, MD
Valeria Fabre, MD
Seun Falade-Nwulia, MBBS, MPH
Matthew Hamill, MBChB, PhD, MPH
Christopher Hoffmann, MD, MPH
Noreen Hynes, MD, MPH
Risha Irvin, MD
Erica Johnson, MD
Morgan Katz, MD
Sara Keller, MD, MPH, MSHP
Emily Kendall, MD, PhD
Oliver Laeyendecker, PhD, MBA, MS
Gyanu Lamichhane, PhD
Michael Melia, MD
Nate Permpalung, MD, MPH
Damani Piggott, MD, PhD
Andrew Redd, PhD
Eileen Scully, MD, PhD
Jeffrey Tornheim, MD, MPH
Susan Tuddenham, MD, MPH

Assistant Professors

Annie Antar, MD, PhD
Charles Randy Bornmann, MD
Steven Clipman, PhD, MSPH
Veronica Dioverti, MD
Kunchok Dorjee, MD, PhD
Elizabeth Gilliams, MD, MS, MSc
David Griffith, MD
Joyce Jones, MD, MS
Abraham Kandathil, PhD
Andrew Karaba, MD, PhD
Sara Karaba, MD, PhD, MHS
Styliani Karanika, MD
Olivia Kates, MD
Jeanne Keruly, MS
Maryam Keshtkar-Jahromi, MD, MPH
Sonya Krishnan, MD, MHS
James Ladd, MD
Lucy Li, MD
Christopher Lippincott, MD
Mamuka Machaidze, MD
Johan Melendez, PhD
Chelsea Modlin, MD
Juhi Moon, MD
Jessica Queen, MD, PhD
Matthew Robinson, MD
Amanda Rosecrans, MD, MHS
Tess Ryckman, PhD
Francesco Simonetti, MBChB, PhD
Geeta Sood, MD, SCM
Joowhan Sung, MD, MSC
William Werbel, MD, PhD
William Wright, DO, MPH, FIDSA

Clinical Associates

Patricia Barditch-Crovo, MD
Christie Basseth, MD
Jerald Cherian, MD, MHS
Maryana Shenderov, MD

Research Associates

Grace Link Barnes, MPH
Shivaun Celano, PharmD
Abby Geis, PhD
Shichun Lun, DVM, PhD
Kate Shearer, PhD
Shaoguang Wu, PhD

Advanced Practice Providers

Nurse Practitioners

Tracy Agee
Karla Alwood
Victoria Boyd
Sherilyn Brinkley
Lee Gilman
Robert Harris
Kirsten Landers
Julie McArthur
Jesse Mesenburg
Brittany Moyer
Katy Olive
Kaitlin Poole
Molly Rice
Sarah Rives Gray
Cory Schulz
Barbara Wilgus
Iryne Zziwa-Kabenge

Physician Assistants

Rebecca Becker
Emily Murrill



Core Staff Leadership Team

Nicole Erby
Associate Administrator

April Lawner
Assistant Administrator of Finance

Erica Wolfe
Assistant Administrator, Grants and Contracts

Susan Bitto
Administrative Manager

Molly Bowen
Senior Communications Manager

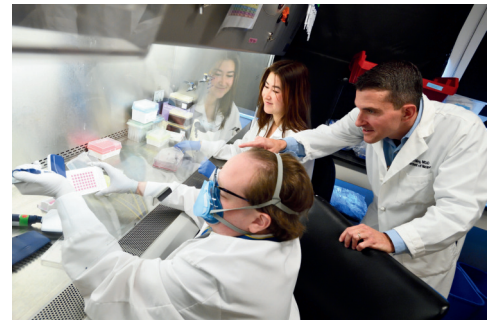
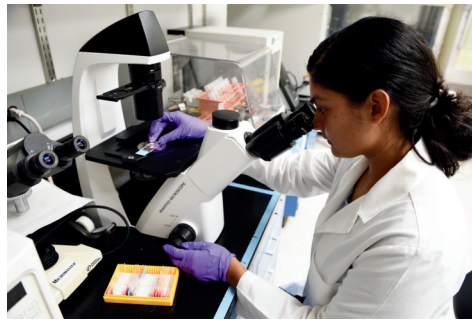
Nilsa Feliciano
HR Generalist

Lin Hoeffler
Administrative Specialist

Kara Hurley
Senior Development Officer

Matthew Reisner
Clinical Research Program Manager

Lisa Steinmetz
Ambulatory Services Manager



Staff

Candice Acevedo Dayo Adeleke Pooja Akoijam Omolola Akolo Tanya Alexander Heba Ali Deepak Almeida Jobaer Amin Hannah Annunziata Mary Jo Appel Ronoldo Appleton Ivan Arellan Gretchen Armington Shreya Arondekar Anastasia Artayet Shepherd Mazen Atiq Fatima Bachani Charlotte Baillie Zachary Bakewell Prasanthy Balasubramanian Nicole Barat Samantha Barker Brittany Barnaba Mary Barry Harris Bayan Hadley Beauregard Pilar Beccar-Varela Tyler Beckey Jade Bell Joy Bell Tanique Bennett Silvia Bernal Jason Bienert Elizabeth Bigelow Colter Billings Elizabeth Bird Jackie Bittner Susan Bitto Ingrid Blackwell Kate Boehner Behnoosh Bonakdar Yazdi Stephanie Bosley Tracey Boswell Alec Boudreau Stelios Bousi Molly Bowen Mary Grace Bowring Julia Box Tameka Brodie Talier Brooks Marie Butts Andrew Byrd Demba Camarah Sarah Campbell Kevin Centeno Maggie Chahoud Yong Chang Naishay Charles Guoqing Cheng Woojae Choi Jesse Ciekot Zam Cing Seth Cohen Silvia Cohn Charlotte Collins Kathleen Connor Paul Converse Veronica Cooks Ayanna Copeland Waleska Cruz Melissa Cuesta Kelly Curran Carina Danchik Felistas Davies Denise de Brito Evelyn De Lima Shanna Dell Cristina DeNardo Ava Dennis Ritu Dhar Rebeca Diaz-Reyes Laura Diven Jeannine Dizon Sangyal Dorjee Filippo Dragoni Erin DuPont Jessica Duran Zabala Alicia Edwards Anne Efron Mascha Elskamp Nicole Erby Julius Esguerra Naomi Esrig Karen Feldman Nilsa Feliciano Rey Fernandez Perez Phyllis Finch Patricia Fischer Siobain Fisher Alejandra Flores-Miller Nicole Fortune Hernandez Nicole Fowlkes Glenn Fulton Woudase Gallo Bambi Galore Jenny Garcia-Abreu Kavita Gautam-Pantheni Moses Gobah Ryann Gollings Teresa Gonzalez Rivera Devon Goodman Shilpa Gopinath Jeffrey Green Xori Green Savannah Greene Zoe Greer Hanna Gribble Karen Griffin Venkata Anoushka Chinmayi Gudipudi Alejandro Guerrero Skylar Gunthrop Anushruti Gupta Manish Gupta Lizeth Gutierrez Camille Hage Jennifer Ham Lynnea Haney MB Hansen Justin Hardick Anne Harper Glenn Harper Tramaine Harris Christine Harrison Anna Heffron Alicyn Heinrich Hannah Heller Brittany Henderson Patrice Henry Catalina Hernandez Valencia Cat Hess Alex Hessel Stephen Hicks Lin Hoeffler Jeffrey Holden Ki Holloman Rachel Holm Jeanne Hoover Karen Horner Lillian Hudanich David Hudson Lynnia Hurt Sarah Hussain Michael Iacobelli Nikole Igraray Nirvani Jairam Chenkai Jiang Ashley Johnson James Johnson Scott Johnston George Jones Mutia Kehwalla Aza Sharon Kelly Jill Kessler Jamaal Khalid Anne King Annamarie Kosalu Spurthi Kodali Beatriz Kohler Khadijat Koletowo Rachel Kopajtic Bahati Kuffar Jun Lai Diane Lanham Francis Lapid Rachel Lastra Katherine Lastrapes Maria Latimer April Lawner Alicia Lebon Grace (Ye Eun) Lee Hyojin Lee Jin Lee Warren Lee Erica Lessem Annabel Levy Haoyue Li Si-Yang Li Zhuolin Li Tao Liang Ewa Lilly Yufeng Liu Marshiek Long Brianna Lopez Carlos Lopez Bray Jen Lu Na Lu Stephany Ma Cheryl Mancini Nikita Mangla Monika Mani Barbara Manning Tonya Manning Eileen Martin Kelli Martin Viviana Martinez Marina Martinez Rivera Yazmin Martinez-Martinez Florencia Martino Kathirvel Maruthai Guido Massaccesi Indraneel Massie Joya Maye Candy McCullough Danielle Mckoy Christian Means Sara Mekhael Margaret Mensa Erin Mihealsick Sarah Miller Jessica Mimms Aye Hnin Moe Adrianna Moore Zack Mulcare Adamaris Muniz Tirado Judith Mutinda Beth Nenortas Ngan Nguyen Elizabeth Nielsen Lillian Noel Sydney O'Dell Sherah Okiya Opeyemi Oladapo-Shittu Olajumoke Olarewaju Louise Opel Ana Ortega Meza Beula Otsyina Yinzhou (Haley) Ou Natalie Overtoom Nese Ozgur Aashish Pandey Kakhangchung Panmei Chandra Panthi Linda Paredes Teresa Parsons Liz Pasetes Kavina Patel Nicholas Pathoulas Carla Peaks Paul Phan Alain Phung Shianne Pietrowski Michelle Pollard Wonneta Porter Amelia Price Michelle Prizzi Daisy Puca Dennis Pugana Darla Quijada Jeffrey Quinn Rekha Radhakrishnan Gabriel Ramirez Nefertaria Reubel-Simpson Kailene Richbow Dozier Matthew Riesner Dalin Rifat Hildur Riley Binayak Rimal Catherine Rizos Moreno Rodriguez Jorge Rodriguez Ryan Rosen Kourtney Roussey Gracie Rozek RC Sadoff Alejandra Salinas Isadora Salles Hamidreza Karimi Sari Shelly Sasser Arya Satish Ron Saxton Tabindah Sayed Courtney Schill Melissa Selby Isabella Sengsouk Thelio Sewell Bruce Shaffer Moagi Shaku Farah Shamma Somnath Shee Taylor Sheldon Prakriti Sinha John Skinner Kelley Smith Isabel Snyder Ashish Solanki Heena Soni Darryl Joel Sop Tueam Paola Sorto Quijano Kirsten Sowers Elena Staicu Quinten Stearns Laura Steiner Lisa Steinmetz Heather Stoltzfus Grace Stubblefield Aakriti Suresh Christopher Szocik Maraake Taddese Abigail Taggart Mary Talalay Rachel Tao Rokeya Tasneen Alexis Taylor Ezras Tellalian Hope Thomas Devs Ryan Thompson Trisha Tichnell James Trudeau Ikeila Turner Sandeep Tyagi Peter Um Marselle Urquiza Gutierrez Claire Vania Anna Vargas Letha Varughese Tarfa Verinunbe Abigail Vorsteg Julia Wade Shabria Ward Caroline Wensel Meghan West Rolita West Jackie White-Hamilton Shelley Wiglesworth Arynne Wilburn Jamie Wiles Matt Williams Patrick Winguth Lisa Wolf Erica Wolfe Aletha Wolo Anna Word Yvonne Woyome Sarah Woznick-McCray Angelina Wu Xinqun Wu Yanlin Wu Tianyue Xu Grace Yi Mattlyn Young Julia Zacharski Alex Zak Fatima Zaman Junlin Zhuo Katie Zook

OUR EXPERTISE

With the support of engaged community partners and international colleagues, we are among the top institutions internationally for infectious diseases care, research, education, prevention, and outreach—for our neighbors in Baltimore, throughout the United States, and around the world. The scope of our work is broad, and the expertise and dedication of our investigators, care providers, and staff is unmatched.



Antimicrobial Resistance & Stewardship



Biological & Social Characteristics



Clinical Decision Tools



Closing Health Gaps



Community-Based Health



COVID-19



Diagnostics



Diarrheal Disease



Drug Discovery



Emerging Infections



Environmental Infectious Diseases



Fever / Fever of Unknown Origin



Fungal Infections



Global Health



Hospital Epidemiology & Infection Control



HIV / AIDS



Lyme Disease & Tickborne Infections



Maternal, Child & Adolescent Health



Medical Education



Mental & Behavioral Health



Microbiome



Nontuberculous Mycobacteria



Outpatient Parenteral Antibiotic Therapy



Sexually Transmitted Infections (non-HIV)



Substance Use



Transplant & Oncology Infectious Diseases



Travel Medicine



Tuberculosis



Vaccines



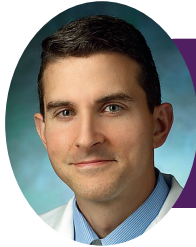
Viral Hepatitis

CELEBRATING SUCCESS

It would be impossible to give a full accounting of the many awards, honors, and professional accolades our faculty and staff receive over the course of a year. Every accomplishment is a testament to the importance of our work and the dedication of our people, who are tireless in the pursuit of knowledge that advances the field, of compassionate patient care that respects the dignity of all, and of excellence in training the next generation of leaders in infectious diseases.

2024 Faculty Promotions

Professor of Medicine



Justin Bailey, MD, PhD
Hepatitis B & Antibody Discovery



Celebrating faculty promoted to Professor of Medicine, 2020-2023
L to R: Khalil Ghanem, Sunil Solomon, Maunank Shah, Shmuel Shoham, Larry Chang, Kathleen Page, Janet Siliciano

Associate Professor



Natasha Chida, MD, MSPH
*Medical Education
Director, Osler Medical Residency*



Matthew Ippolito, MD, PhD
Malaria, Tropical Diseases, Global Health



Matthew Hamill, MBChB, PhD, MPH
*HIV, Hepatitis, Sexually Transmitted Infections
Medical Director, BCHD Sexual Health Clinics*



Erica Johnson, MD
*Medical Education
Director, Bayview Medical Residency*



Morgan Katz, MD, MHS
Infection Control in Long Term Care Settings

Assistant Professor



Nate Permpalung, MD, MPH
*Fungal Infections in
Immunocompromised Patients*



Lucy Li, MD, PhD
*Environmental & Fungal Infections in
Immunocompromised Patients*



Jeffrey Tornheim, MD, MPH
Tuberculosis Genomics



Joowhan Sung, MD, MSC
Tuberculosis Diagnostics



Chelsea Modlin, MD
HIV & Global Health Equity

Staff Awards and Honors

Johns Hopkins Medicine Achievers Award

The Achievers Award Program recognizes and celebrates staff across the enterprise who exemplify excellence and make outstanding contributions to the field of healthcare or to the communities we serve. These individuals are guided by JHM's core values of Excellence and Discovery; Leadership and Integrity; Diversity and Inclusion; and Respect and Collegiality.



2024 Women's History Month Achievers Award

Diane Brown, RN, MSN

Senior Research Nurse

Transplant & Oncology Infectious Disease Research Group

Diane was awarded a Johns Hopkins Medicine 2024 Women's History Month Achievers Award for her leadership, passion, kindness, and for creating a culture of learning that makes her team feel supported and empowered to give their best at all times. She led the merger of two large research groups and helped transform the Transplant and Oncology Infectious Diseases Research Group into an efficient model in the Clinical Trials Core at the Transplant Research Center. Diane's "lead by example" model is recognized by patients, peers, and management.

2024 ID Staff Service Awards

The Division of Infectious Diseases established the Staff Service Awards in 2023 to recognize the contributions of exceptional staff serving across patient care, research, and core services. Awards are given in three categories, and employees are nominated by faculty and staff supervisors. We are pleased to present this year's deserving honorees.

Performance Excellence

This category recognizes staff who display excellence, who accept responsibilities beyond their typical duties, and who consistently exceed expectations. They have extensive knowledge of their work and utilize this knowledge to create more efficient workflows.



Julius Esguerra

Grants & Contracts Manager



Rekha Radhakrishnan

Communications Director, SMART4TB

Leadership

Staff nominated in this category demonstrate exceptional management capabilities, provide guidance, and mentor others, improving the work environment of the Division and the university. By initiating processes that boost productivity or generate revenue, these employees significantly enhance our culture.



Diane Lanham

Sr. Research Program Manager

Fisher Center for Environmental Infectious Diseases

Quality, Safety, and Service Excellence

Nominees to this category work diligently to create new initiatives for improving patient care, research, and health outcomes. They devote their time and talent to advance quality of health for the populations they serve and consistently exceed expectations in service delivery standards.



Adrianna Moore

Administrative Director, The Access Partnership

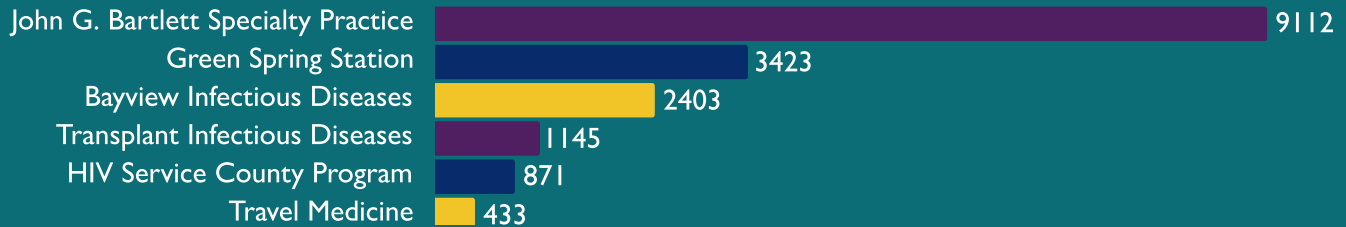
Also nominated: Heba Ali, Brittany Barnaba, Diane Brown, Will Burroughs, Naishay Charles, Jesse Ciekot, Justin Hardick, Cat Hess, Lynnina Hurt, Maria Latimer, Nese Ozgur, Michelle Prizzi, Deitra Rowlette, Melissa Selby, Kelley Smith, Trish Vogt, Louise Walshe, Matt Williams, Erica Wolfe, and Katie Zook

PRIORITIZING PATIENT CARE

Our patient-centered approach to high quality healthcare is central to our mission. We put that commitment into action this year with an expansion of our outpatient clinic offerings, launching three new services to provide care to patients with complex infections, and commemorating four decades of HIV care at Johns Hopkins.

Outpatient Visits

Effective infectious diseases care meets people where they are. Across Baltimore and throughout Maryland, our providers deliver compassionate, expert clinical care that is convenient and close to home.



Inpatient Clinical Services

In addition to treating people with infectious diseases in our ambulatory clinics and specialty care locations, we provide expert infectious diseases care to hospital-admitted patients at Johns Hopkins Hospital and the Bayview Medical Center.



In Focus: The Center for NTM and Bronchiectasis



Established in 2018, the Johns Hopkins Center for Nontuberculous Mycobacteria (NTM) and Bronchiectasis is dedicated to the specialized care of adult patients with complex lung infections and bronchiectasis, a chronic and incurable condition that causes irreversible damage to the airways of the lungs. The center team is a multi-disciplinary group of experts with training in pulmonology, infectious diseases, clinical pharmacology, and physical therapy. The center's mission is to provide comprehensive, longitudinal care for patients with bronchiectasis and NTM infections in order to improve quality of life and advance research. Since its founding, the center has built a reputation for exceptional clinical expertise and has now treated patients from 36 states and Washington, DC.

The Center for NTM and Bronchiectasis is led by Program Director **Dr. Elisa Ignatius** of the Divisions of Clinical Pharmacology and Infectious Diseases, Clinical Director **Dr. Christopher Lippincott** of the Division of Infectious Diseases, and Director of Bronchiectasis **Dr. Dan Belz** of the Division of Pulmonary and Critical Care Medicine.



Johns Hopkins Medicine Clinical Excellence Awards

In April 2024, the Center for NTM and Bronchiectasis was celebrated for their clinical excellence at the annual Johns Hopkins Medicine Clinical Awards for Physicians and Care Teams reception. The center team received the Innovations in Clinical Care Award, given to providers who demonstrate a visionary approach to problem solving and performance improvement. The team's commitment to providing the highest quality of integrated, multidisciplinary care for patients with some of the most challenging infections and underlying conditions offers hope and a medical home for patients with complex lung infections who, for years, have had nowhere else to turn.

Clinical Awards and Impact



The 11th Annual Johns Hopkins Medicine Quality, Safety, and Service Summit

Dr. **Stephen Berry** received the inaugural Sean Berenholtz Award in recognition of his leadership and unwavering commitment to improving healthcare safety and quality. The CancelRX team, which includes Dr. **Joyce Jones** of the ID Division (pictured at right, front row, second from right) received the E. Robert Feroli Award for Excellence in Medication Safety in recognition of their work resulting in significant and sustainable systemic changes that have improved the safety and quality of the medication-use process.



Cosgrove, Tamma Awarded Interprofessional Practice Award

The Johns Hopkins Department of Pharmacy awarded the Interprofessional Practice Award to Dr. **Sara Cosgrove** and Dr. **Pranita Tamma** for their years of collaboration in antimicrobial stewardship. Dr. Cosgrove is the director of the Johns Hopkins Hospital (JHH) Adult Antimicrobial Stewardship program; Dr. Tamma is the director of the JHH Pediatric Antimicrobial Stewardship program. The Interprofessional Practice Award is given annually to individuals who have worked collaboratively with the Department of Pharmacy to make sustained contributions to pharmacy practice, research, or education.



Wright Receives ABIM, FIDSA Honors

Dr. **William Wright** was selected by the American Board of Internal Medicine (ABIM) to serve on the Infectious Disease Item-Writing Task Force. ABIM task forces help respond to increased demand for content that provides physicians with new, more flexible assessment options across a broad range of health areas.

Dr. Wright also received a prestigious Fellowship designation from the Infectious Diseases Society of America. IDSA Fellows have achieved professional excellence and have provided meritorious, impactful service to the field of infectious diseases.



Griffith Receives Patient Safety Star

Dr. **David Griffith** received the Johns Hopkins Hospital Patient Safety Star Award for his quick actions during an emergency in the Bartlett Clinic. An 11-year-old male was unexpectedly brought into the clinic with a non-life-threatening gunshot wound. While all clinic staff rushed to aide to the young patient, Dr. Griffith

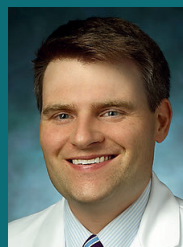
went above and beyond. Despite not being the scheduled lead provider, he stepped up without hesitation. He remained calm and reassured the patient, who was emotional and afraid, as he assessed the wound and provided medical intervention. After the patient was stabilized, Dr. Griffith escorted him to the Emergency Department where he facilitated a thorough hand-off to the receiving care team. His decisive action and exceptional care for a young patient in crisis exemplifies the Hopkins commitment to patient safety.

Revised Clinical Guidelines for Pulmonary TB

A guideline development group convened by the National Tuberculosis Coalition of America (NCTA) and led by Hopkins ID investigator Dr. **Maunank Shah** published revised isolation and restriction guidelines for pulmonary tuberculosis. The recommendations provide an evidence-based framework to fill gaps in existing US guidelines, with the goal of reducing TB transmission while considering an individualized approach that minimizes harm to patients. The CDC issued an accompanying commentary.

Read the guidelines: <https://bit.ly/3EsQx1u>

Shah M, Danksy Z, Nathavitharana R, Behm H, Brown S, Dov L, Fortune D, Gadon NL, Gardner Toren K, Graves S, Haley CA, Kates O, Sabuwala N, Wegener D, Yoo K, Burzynski J. NTCA Guidelines for Respiratory Isolation and Restrictions to Reduce Transmission of Pulmonary Tuberculosis in Community Settings. Clin Infect Dis. 2024 Apr 18;ciae199. doi: 10.1093/cid/ciae199. Epub ahead of print. PMID: 38632829.



Karaba Joins National Guideline Panel

Dr. **Andrew Karaba** was selected to serve on the Herpes Simplex Virus/Varicella-Zoster Virus Section Group of the Panel for the Guidelines for the Prevention and Treatment of Opportunistic Infections in Adults and Adolescents with HIV. Karaba joins a team of other experts in HIV and related infections to review and update the guideline, an online resource that offers essential information on HIV and AIDS treatment, prevention, and research to healthcare providers and patients across the United States.

Outpatient Services, A Cornerstone of Care

While our clinicians are among the world's best in understanding a broad range of infectious diseases, they also bring genuine compassion to the bedside that helps reduce the stigma of disease and remove barriers to care. This creates better outcomes for patients, strengthening our communities at home and around the world.

Three New Clinics Launched



Complicated or Recurrent C. diff Telehealth Service

Led by **Dr. Cynthia Sears** and **Dr. Paul Auwaerter**, along with ID Fellow Sean Anderson, the C. diff Telehealth Service provides care and consultation for *Clostridioides difficile* (C. diff) infections of the colon that are particularly difficult to treat. Patients referred to the clinic benefit from advanced testing and treatment, access to clinical trials, and close collaboration between our infectious diseases clinicians and gastroenterologists, dietitians, and other specialists when appropriate.



Center for Recurrent Vaginal Infections

Infectious diseases specialist **Dr. Susan Tuddenham** leads the newly-formed Center for Recurrent Vaginal Infections, along with Johns Hopkins experts in obstetrics and gynecology. The center offers evaluation and treatment of reoccurring vaginal infections, including bacterial vaginosis, vulvovaginal candidiasis, and sexually transmitted infections. Patients can also participate in clinical trials and research studies designed to improve understanding of these infections.



Viral Hepatitis Clinic

Located at Johns Hopkins' brand new gastroenterology and hepatology center in Columbia, Maryland, and led by **Dr. Ashwin Balagopal**, the Viral Hepatitis Clinic provides expert screening, diagnosis, treatment, and disease management for hepatitis B and C and related conditions in a convenient outpatient setting. Patients have access to specialized hepatitis care and a full range of clinical and surgical services without a trip to the hospital.

Infectious Diseases Outpatient Care Locations

John G. Bartlett Specialty Practice: Our flagship clinic, offering the very best in comprehensive services for infectious diseases prevention, diagnosis, and care.

Johns Hopkins Healthcare at Green Spring Station: General infectious diseases care and specialty services for HIV, viral hepatitis, outpatient antibiotic therapy, nontuberculous lung infections, and transplant and oncology infectious diseases.

Johns Hopkins Bayview: General infectious diseases care, including HIV, viral hepatitis, outpatient antibiotic therapy, and other specialized services.

Comprehensive Care Practice: Compassionate care for HIV, sexually transmitted infections, outpatient antibiotic therapy, and viral hepatitis.

Specialized ID Care at Johns Hopkins Medicine

Outpatient Parenteral Antibiotic Therapy Program: Care and resources for outpatient IV antibiotic treatment, offered at Bayview, Bartlett, and Green Spring Station.

Center for Nontuberculous Mycobacteria & Bronchiectasis: Located on the Bayview campus, providing specialized care for patients with complex, non-tuberculosis lung infections.

Oncology Infectious Diseases Clinic at the Kimmel Comprehensive Cancer Center: Highly specialized care for infectious diseases related to cancer.

Geographic Medicine Clinic: Pre- and post-travel clinical services and consultation for infectious diseases related to travel, including immunizations, diagnosis and treatment, and prevention strategies.

Infectious Diseases Telehealth and Partner Care Services

HIV Telehealth: Employing the latest technology to provide linkage to prevention and treatment services for HIV and other sexually transmitted infections.

Rural Telehealth: Comprehensive care for viral hepatitis, HIV prevention, and substance use disorders in partnership with rural health departments and recovery centers throughout the state of Maryland.

Baltimore City Health Department: Our decades-long partnership with BCHD offers clinical leadership and services for sexual health, tuberculosis, and an infectious diseases care mobile unit.

Maryland HIV Service County Program: We offer exceptional care for HIV and other conditions in partnership with county health departments throughout the state of Maryland.

Schedule an appointment: (443) 997-0034

Learn more about ID outpatient clinics:
<http://bit.ly/4572OmH>

Commemorating 40 Years of HIV Care at Hopkins

40th Anniversary of Outpatient HIV Care Symposium

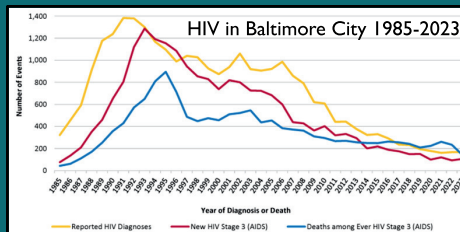
The Johns Hopkins Center for AIDS Research (CFAR) hosted the 40th Anniversary of Outpatient HIV Care Symposium on December 5, 2024. Our outpatient AIDS clinic opened in 1984 and was just the second care center in the United States. The symposium included a comprehensive timeline of HIV care and discovery at Hopkins, and saw the return of many of the exceptional clinical providers and investigators who devoted their careers to caring for patients and uncovering the mysteries of HIV infection at a time when little was known about the disease. The panel discussion proved particularly moving, as clinicians from those early years recounted their memories of front-line HIV and AIDS care at the outset of the epidemic, when many providers and facilities across the country were still hesitant to treat patients with the infection. Current patients living with HIV also joined the panel to present and share their lived experiences.



Making a Difference: \$40,000 Raised

In recognition of the outstanding care we have provided for 40 years, we launched a highly successful campaign to support direct patient services and staff training, doubling our fundraising goal of \$20,000 thanks to a matching gift from an anonymous donor.

HIV Care at Hopkins, Past & Present



Polk Tea with Jo Leslie

Current and past clinical staff gathered in May 2024 for an afternoon of reflection and appreciation for their shared experiences on the Polk in-patient AIDS unit, treating patients in the earliest days of the HIV/AIDS epidemic. Guest of honor was Jo Leslie, a retired Hopkins physician assistant who proctored internal medicine residents, ID fellows, and nursing and pharmacy trainees on the Polk Unit for years, offering a safe space and a cup of tea for care providers in need of a few moments of peace amidst the often heartbreaking work.



IMPROVING PATIENT CARE

Ready to Live: 40 Years of HIV and AIDS Leadership at Johns Hopkins

Looking back at a devastating disease and forward to a brighter future

By Karen Nitkin | Dome November/December 2024

Joel Blankson has been treating patients with HIV and AIDS at Johns Hopkins since 1995, when he was an intern in the Department of Medicine.

“Back then, patients would come in with severe disease, and there were times we couldn’t do anything for them,” says Blankson, professor of infectious diseases at the Johns Hopkins University School of Medicine.

Now, with a single pill a day, people with HIV can keep viral loads so low that the virus is not transmissible. This exquisitely attainable goal, a global health strategy known as U=U, or undetectable equals untransmissible, allows them to live full and healthy lives.

“It’s the difference between getting people ready to die versus getting them ready to live,” Blankson says.

From the earliest days of the HIV and AIDS epidemic, Johns Hopkins has led clinical care, research and education locally and around the world.



In those early days, the service was overwhelmed with previously healthy young men and women with life-threatening complications of AIDS, and we struggled to learn how to treat them more effectively and support them through a harrowing illness.

Richard Chaisson, MD

There from the Beginning

In 1982, just months after the first cases of a previously unknown cancer were reported, Johns Hopkins epidemiologist B. Frank Polk began studying the disease known at the time as GRID: gay-related immunodeficiency disease.

The following year, Johns Hopkins began outpatient treatment of patients with the still-mysterious ailment in the Moore Clinic, originally a research clinic. Over the next few years, the number of patients increased exponentially, and in 1988, The Johns Hopkins Hospital became the second one in the nation to provide inpatient care for patients with AIDS, after San Francisco General Hospital in 1983.

Richard Chaisson served as director of the AIDS service and led both the inpatient ward and outpatient clinic from 1988 to 1997.



John Bartlett, chief of Johns Hopkins’ division of infectious diseases from 1980 to 2006, examines a patient with AIDS.

Photo: Johns Hopkins Medicine

“In those early days, the service was overwhelmed with previously healthy young men and women with life-threatening complications of AIDS, and we struggled to learn how to treat them more effectively and support them through a harrowing illness,” he recalls.

“The Division of Infectious Diseases at Johns Hopkins embraced HIV at a time when many other university hospitals were trying to avoid it,” says Joel Gallant, who arrived for a fellowship in 1990, was a professor from 1992 to 2013, and recently returned as a partially retired adjunct professor. “From the moment I came to Johns Hopkins, HIV and AIDS has been my focus,” he says.

The institution always made a point of sharing its knowledge about the virus and about patient care, he says.

John Bartlett, chief of infectious diseases from 1980 to 2006, was another early and active supporter of HIV and AIDS care and research at Johns Hopkins. His commitment inspired others to come to Johns Hopkins to study the virus and care for patients, and to develop research and care infrastructures in communities reeling from the disease.

Bartlett established programs in Maryland prisons and county health departments to bring Hopkins’ expertise to patients unable to come to Baltimore. In 1990, he published the first edition of *Medical Management of HIV Infection*, considered a go-to resource for treating patients in the U.S. and around the world. The guide was regularly updated by Bartlett, Gallant and Paul Pham.

“Hopkins has really been there from the beginning,” says Joyce L. Jones, assistant professor and medical director of the John G. Bartlett Specialty Practice. “Both addressing the immediate patient care and psychosocial needs, as well as advancing the research.”



We worked for decades to identify tools that work, for both prevention and disease management. More recently, we have focused on how to optimize the uptake and the real-world impact of these tools.

Robert Bollinger, MD, MPH

Research and Treatments

In the early years, care was focused on treating AIDS complications, including opportunistic infections, and on keeping patients as comfortable as possible as they grew sicker.

A breakthrough came in 1996 with the introduction of drug combinations known as highly active antiretroviral therapy (HAART), which dramatically reduced deaths by blocking the virus from replicating.

However, the treatment required an exacting regimen of many pills, taken multiple times a day, and it didn't work for everyone. It also came with severe side effects, such as nausea and kidney stones, says Blankson.

Care for patients with HIV is very different now, says Jones.

"A vast majority of people can achieve that sustained, suppressed viral load with one pill, once a day," she says. "And we have injectable treatments as well — people come in once a month or once every two months to get an injection, and that treats their HIV."

Caring for the Bartlett Specialty Practice's 3,000 patients involves more than suppressing their viral load. Chronic conditions including diabetes, cardiovascular disease and hypertension are more common in people with HIV and the underserved population of the clinic.

Psychiatry and social work are routine aspects of care, Jones says, with support that includes help with medication adherence and guidance for younger patients as they transition from pediatric to adult care.

"HIV is still disproportionately impacting certain populations," says Jones. "So we're making sure we continue this legacy of wraparound services and support, connecting patients with what they need and deserve."

Rapid tests, first available in 1992, allow for standard HIV screening for emergency-room patients, unless they opt out — a best practice identified by Johns Hopkins research that enables those who test positive to be treated sooner and reduces spread.

Another game-changer was the 2012 introduction of pre-exposure prophylaxis (PrEP), which protects people who are HIV-negative.



Learning How the Virus Behaves

Meanwhile, Johns Hopkins researchers and epidemiologists have been diligently studying the disease and how it is transmitted, leading to dramatic improvements in both treatment and prevention.

CFAR, the Center for AIDS Research at The Johns Hopkins University, began promoting interdisciplinary HIV and AIDS research at Johns Hopkins in 1998, and was revamped and expanded by Chaisson in 2012 after a lapse in funding.

Over the years, he says, it has supported hundreds of young investigators who went on to have long careers in HIV research.

"Hopkins has been a leading engine of discovery in HIV across a large range of disciplines, making significant advances in virology, immunology, therapeutics, prevention, and public health interventions," says Chaisson, CFAR's director.

Pediatrician Deborah Persaud's research is finding that very early interventions for babies born with HIV can limit HIV reservoirs and create remission without antiretroviral therapy.

She, Bollinger and others have also led studies showing that mothers can reduce breast-milk transmission of HIV to newborns by giving doses of nevirapine to both mothers and babies.

Robert and Janet Siliciano, husband-and-wife Johns Hopkins professors, have focused their research on HIV reservoirs that contain latent virus. Most recently, they showed that a full HIV cure is still out of reach because the virus in these reservoirs can rebound.

Blankson is now studying patients whom he calls "elite suppressors," who are able to keep their viral loads low without medication. "We think they might be a model for a cure of HIV where you don't have to eradicate the virus, but you can control viral replication without drugs," he says.

"The Hopkins HIV research footprint is huge, and the global impact of this work over many decades has been incredibly important," says Robert Bollinger, Raj and Kamla Gupta Professor of Infectious Diseases and associate director for medicine at the Center for Global Health.

"Internationally, a lot of what we have done recently is implementation science," he says. "We worked for decades to identify tools that work, for both prevention and disease management. More recently, we have focused on how to optimize the uptake and the real-world impact of these tools."

Gallant, who has been treating people with AIDS at Johns Hopkins since 1990, says the progress has been nothing short of remarkable.

"It's definitely a happy story," he says. "If you were forced to live with one chronic disease, this would be the one to choose. The treatment is so easy, safe and effective that you can truly live a normal life despite having HIV."



Today, staff and providers at the John G. Bartlett Specialty Practice offer exceptional care and support services to patients living with HIV and other infectious diseases.

IMPROVING PATIENT CARE

Taking Action Against Antibiotic Resistance

Antibiotic stewards charting a course for fewer medications, better health.

By Karen Nitkin | Dome March/April 2024

Here's a common scenario: A resident of a long-term care facility develops cloudy urine, and a culture comes back with growing bacteria that could signal a urinary tract infection.

For many clinicians, the logical course of action would be to prescribe antibiotics, even though the cloudy urine and the presence of bacteria alone do not necessarily indicate a urinary tract infection (UTI).

Instead, say antimicrobial stewards at Johns Hopkins, antibiotics should be avoided unless the resident has signs and symptoms of a true UTI.

Antibiotics are inexpensive and readily available. They often prove beneficial and even lifesaving. When they don't work, they still can give clinicians, as well as patients and their families, the comforting assurance that something is being done to help the person get better.

But overprescribing can be harmful to patients, and it promotes resistance to bacteria that makes treatments less effective in the future.

Sara Cosgrove, Valeria Fabre and Morgan Katz, infectious disease physicians and antimicrobial stewards at The Johns Hopkins Hospital and the Johns Hopkins Bayview Medical Center, are helping clinicians take a more nuanced approach, providing education and tools to better manage antibiotic use at Johns Hopkins, long-term care facilities and even in other countries.

Prescribing antibiotics to all long-term care patients with positive urine cultures, regardless of symptoms, is a major source of increased antibiotic resistance, says Katz, assistant professor of medicine.

And, in many cases, it's not necessary.

"About 50% of nursing home residents have asymptomatic bacteria," she explains. "As you get older, your urinary tract can get colonized with bacteria, but it often does not cause symptoms and doesn't need to be treated."

With funding from the Agency for Healthcare Research and Quality (AHRQ), Cosgrove and Katz developed an education program to guide antibiotic use in skilled nursing facilities, residential and continuing care communities, and hospice and dementia care settings.

The intervention includes 15 webinars for clinical staff members, plus activities, and posters and other materials, that frame antibiotic stewardship as an important method to promote patient safety.



Clinicians were urged to be sure, before prescribing antibiotics, that the patient would truly benefit from the medication, and if so to ask themselves daily when the treatment could be decreased or stopped.

Clinicians were urged to be sure, before prescribing antibiotics, that the patient would truly benefit from the medication, and if so to ask themselves daily when the treatment could be decreased or stopped.

Care facilities that used the material reduced antibiotic use, note Cosgrove, Katz and others in a February 2022 *JAMA Network Open* report.

The results show the effectiveness of antimicrobial stewardship programs, even — or especially — in settings with people who may be nonverbal or experiencing vague symptoms, says Katz.

As antibiotic stewards at Johns Hopkins, Cosgrove and Katz set guidelines that clinicians can access through an app and on workstations.

"They're very comprehensive," says Cosgrove, a Johns Hopkins professor of medicine. "They say how to respond to specific conditions, and we have sections on dosing and on the antibiotics themselves."

Yet guidelines alone are not enough, she says.

The stewards provide antimicrobial education to students and clinicians, and require approval from infectious disease specialists for some antibiotic prescriptions. Clinical pharmacists are trained in antibiotic approvals and in how to have conversations with clinicians about stopping and narrowing therapy.

However, "it is not possible for the three or four people in your stewardship program to intervene on all patients receiving antibiotics in the hospital," Cosgrove says. "What really makes me happy is when I hear clinicians talking about these things, saying they're going to narrow the duration of treatment or that they're going to stop antibiotics because they don't think the patient has an infection."

A Spotlight on Antimicrobial Stewardship

Antibiotics have serious downsides, particularly when overprescribed, the clinicians note. They can destroy useful gut flora, causing discomfort and placing people at risk for *Clostridioides difficile* infection, which can cause a type of diarrhea that can progress to be life threatening.

Zoom out to the population at large, and overuse of antibiotics undermines their efficacy, as bacteria adapt to survive the medications.

Fabre, associate professor of medicine, works with infectious disease physicians and microbiologists in Latin American countries to develop stewardship programs at their hospitals, and she hopes to expand the effort to outpatient facilities.

"Most hospitals [in Latin America] perform antibiotic stewardship activities, but they don't necessarily have a program," Fabre says. Her work includes setting up clinical tools to determine when using antibiotics is unnecessary or can wait, educating the pharmacists and nurses who administer antibiotics, and helping hospitals assess their current programs, resources and antibiotic use.

Cosgrove notes that concerns about antibiotic overuse are as old as the medications themselves.

"We were warned by Alexander Fleming (who discovered the world's first antibiotic, penicillin, in 1928) that if we use too much penicillin, particularly in situations where it is not needed, we could have problems with resistance," Cosgrove says.

Since then, reliance on antibiotics has escalated with advances in medical care, such as organ transplants and other surgeries. So has microbe resistance, as bacteria evolve to survive new antibiotic offerings.

“

If you have strep throat or pneumonia and you take antibiotics, you feel better right away. They save so many lives. Because of that, they also sometimes become a security blanket. It's hard to say no to antibiotics, to explain to a patient that it's not an infection, it's an asthma flare.

Sara Cosgrove, MD

In 2014, President Barack Obama promoted a national strategy for combating antibiotic-resistant bacteria, guided by a report developed by the President's Council of Advisors on Science and Technology, members of which are scientists and engineers.

"When used appropriately, antibiotics are amazing," says Cosgrove, a member of the council's inaugural working group. "If you have strep throat or pneumonia and you take antibiotics, you feel better right away. They save so many lives. Because of that, they also sometimes become a security blanket. It's hard to say no to antibiotics, to explain to a patient that it's not an infection, it's an asthma flare."

The report to the president notes: "Without rapid and coordinated action, the Nation risks losing the tremendous public health progress made over the last century from the discovery and development of antibiotic drugs, thereby threatening patient care, economic growth, public health, agriculture, economic security, and national security."

The report cites Centers for Disease Control and Prevention findings that "up to 50 percent of all the antibiotics prescribed for patients in the United States are not needed or are not optimally prescribed."

Johns Hopkins antimicrobial stewards are doing their part to change that.

Johns Hopkins Hospital Department of Antimicrobial Stewardship

Established in 2001, the Department of Antimicrobial Stewardship seeks to address the many challenges of antibiotic resistance in effective patient care. The mission of the Antimicrobial Stewardship Program is to ensure that every patient at The Johns Hopkins Hospital who needs antimicrobial therapy receives optimal drug choice, dose, duration, and administration for their specific condition while minimizing risks associated with antibiotic resistance and toxicity. A number of Division of Infectious Diseases faculty members with special interest in this area serve in leadership roles with the JHH Department of Antimicrobial Stewardship, a multidisciplinary team dedicated to exceptional patient care, comprehensive scientific investigation, and active mentoring of clinical and research trainees.

Johns Hopkins Hospital Adult Antimicrobial Stewardship



Sara Cosgrove, MD, MS

Director
Johns Hopkins Hospital Department of
Antimicrobial Stewardship



Valeria Fabre, MD

Associate Director
Johns Hopkins Hospital Department of
Antimicrobial Stewardship

Bayview Medical Center Adult Antimicrobial Stewardship



Morgan Katz, MD, MHS

Director
Johns Hopkins Bayview Medical Center
Department of Antimicrobial Stewardship



Sara Karaba, MD, PhD, MHS

Associate Director
Johns Hopkins Bayview Medical Center
Department of Antimicrobial Stewardship

Outpatient Parenteral Antimicrobial Therapy



Sara Keller, MD, MPH, MSHP

Director
Outpatient Parenteral Antimicrobial Therapy
Johns Hopkins Hospital
Bayview Medical Center

IMPROVING PATIENT CARE

Overcoming Treatment Barriers for People with Infectious Diseases and Substance Use Disorders

Seun Falade-Nwulia works to ensure patients receive the carefully coordinated care they require.

By Linell Smith | Dome May/June 2024

As a child growing up in Nigeria, Johns Hopkins physician Seun Falade-Nwulia felt distressed by the plight of female children and women in her society.

“Over and over again, I could see how girls and mothers had so little power. There were so few expectations of what they could achieve or what they were expected to contribute,” says the associate professor at the Johns Hopkins University School of Medicine. “That has always stayed with me. I’ve always been drawn to those who are marginalized.”

As an infectious diseases specialist, that concern has come to mean treating people, often underserved, who struggle with treatments for HIV and hepatitis C while also battling substance use disorders.

“I was in medical school at a time when HIV was killing people, and I wanted to be part of addressing that emergency,” Falade-Nwulia remembers. “By the time I was finishing my fellowship at Hopkins in infectious diseases, we had available to us very effective medications or tools to both prevent and treat HIV and hepatitis infections.”

While serving as medical director of the Baltimore City Health Department HIV early intervention initiative program, she came to recognize a major flaw in the care system. Not only were patients with “competing health priorities” — such as injection drug use — expected to visit a provider at one hospital or clinic, but they were also referred to additional locations to receive treatment for their infectious disease, substance use and mental health.

However multiple barriers such as homelessness, unemployment, lack of transportation and fear of stigmatization often prevented them from going.

“People who use injection drugs are at risk for infectious diseases, and when they get one, they have worse outcomes,” Falade-Nwulia says. “We have the tools to not only prevent, but also treat these infections when they occur, but we’re not doing a good job of connecting them to the patients.”

Funding from the Substance Abuse and Mental Health Services Administration and the National Institutes of Health has enabled Falade-Nwulia and her research team to study the effectiveness of integrated approaches for substance use, mental health, HIV and hepatitis C care for people who use drugs to increase access to the care they need.

Her work includes integrating hepatitis C treatment into various settings, including public health clinics, opioid treatment programs and syringe service programs. At the same time, she has expanded substance use disorder treatment in infectious disease care settings.



As director of the Center for Substance Use & Infectious Disease Care Integration at Johns Hopkins Bayview Medical Center, Falade-Nwulia works to ensure that systems are in place for patients to receive the carefully coordinated care they require.

“The cornerstone of all the work I do is: How do we meet patients where they are? And also, How do we increase our understanding of what the patient is going through and work that into our approach to providing care?”

One important way is by recruiting state-certified peer recovery specialists to become part of the health care team. “A big part of what I do is to incorporate people with lived experience into the solution by eliciting their thoughts on what would make our approach better and then working with them to implement these approaches.”

Peer counselors not only help patients navigate the care system, she says, but can also leverage their own personal experiences to support patients in identifying and overcoming barriers that impede care access and engagement.

“People who use injection drugs are at risk for infectious diseases, and when they get one, they have worse outcomes. We have the tools to not only prevent, but also treat these infections when they occur, but we’re not doing a good job of connecting them to the patients.”

Seun Falade-Nwulia, MBBS, MPH

In the Johns Hopkins John G. Bartlett Specialty Practice clinic for infectious disease care, people living with HIV can receive medications and treatment for substance use disorder as well as for HIV and hepatitis C, while also benefiting from psychiatric care and recovery support services.

“It’s been amazing, the progress that we’ve made,” says clinic psychiatrist Jeffrey Hsu, who began working with the mental health issues of patients with HIV in the hospital’s Moore Clinic in 1999. Since that clinic became the Bartlett practice in 2017, he has been part of a multidisciplinary team that also treats substance use disorders.

"Fifteen years ago, many people would fall through the gaps when we referred them to outpatient methadone centers or to the Johns Hopkins Broadway Center for Addiction. Using this on-site integrated approach, we've been able to capture most of the patients in our clinic who have SUDs and provide some level of support for them."

According to a report published in the *International Journal for Drug Policy*, the innovative effort is succeeding.

"During the pandemic, when overdoses and anxiety rates were increasing, our patients were supported to reduce their substance use and lower their anxiety," Falade-Nwulia says.

The integrated program also led more patients to adhere to their HIV and hepatitis C treatments.

When patients were asked to name the most impactful part of the program, many answered "Knowing that someone cares."

"That's really what every human being wants, right?" Falade-Nwulia says, "It seems simple, but it's actually very complex because you have to change not only the way care is delivered but also how to fund additional resources required in the health system in order to implement simple interventions such as peer support."

Her current study uses a structured approach to integrating mental health and substance use disorder care into the Johns Hopkins HIV clinic, and she will assess its effectiveness through a randomized control trial. The goal, she says, is to create a road map for others to follow.

Past and present team members from the Center for Substance Use and Infectious Disease Care Integration



From left: Tracy Agee, Seun Falade-Nwulia, Maria Latimer, Taylor Sheldon, Tarfa Verinumbe, Detrah Lee, Marshiek Long, Lilly Noel, and Consuelo Green



From left: Hamid Karimi-Sari, Cat Wren, Sharon Kelly, Grace Ye Eun Lee, Tracey Boswell, Tracy Agee, Maria Latimer, Annice Brown, Seun Falade-Nwulia, Alicia LeBon, Hope Thomas Devs, and Tarfa Verinumbe

Center for Substance Use and Infectious Disease Care Integration

The Johns Hopkins Center for Substance Use and Infectious Disease Care Integration is dedicated to promoting healthy outcomes for people who use substances. The center seeks to advance scientific knowledge, engage and partner with people and communities affected by substance use, and develop universally accessible pathways to care to prevent and treat infectious diseases and other harms of substance use.

CENTER PROGRAMS



RESTORE (REcovery in Specialty care Through medication and Out REach)

Housed in the Bartlett Specialty Practice, RESTORE provides evidence-based medical treatment and peer-delivered recovery support services for people living with substance use disorders.



Support to RESTORE Learning Collaborative

Provides peer recovery support services to people who use drugs in Baltimore and rural northwest Maryland, ongoing training and support for peer recovery specialists, and a quarterly educational forum to help medical professionals integrate substance use disorder care into their clinical practice.



ACCESS Telehealth

In partnership with Maryland Department of Health Center for Harm Reduction services and rural county health departments and syringe service programs, provides expert infectious diseases care via telemedicine for people living with hepatitis C and opioid use disorder.

WHAT PROGRAM PARTICIPANTS SAY

I was excited about the experience because it was such a positive one. 95 percent of the time, it was feeding my soul and feeding my needs...they had counseling, they had social workers. They just had so much to offer.

I'm doing things again that I wasn't doing for a while, like water fitness, like working. The RESTORE program has helped me along—keep me focused with that.

RESTORE changed my life back to the way it was...My daughter and my family was saying I look good. I got my color, everything back.

If something is wrong...everybody knows about it at one time. They don't have to wait till you come to their office. It's all right there...It's all in one place...you could make three different appointments in one day if you have to.

...they check on me weekly...they make sure I get my prescription filled and I'm keeping up on my meds...They just look out like a big brother or sister would sometimes.

IMPROVING PATIENT CARE

Program for Intravenous Therapy at Home Improves Treatment of Long-Term Infections

Using a multidisciplinary approach, the Johns Hopkins Outpatient Parenteral Antimicrobial Therapy Service has significantly lowered hospital readmissions.

By Linell Smith | Dome March/April 2025

Sara Keller remembers the concern she felt when patients who were receiving long-term intravenous antibiotic therapy at home for infections after heart valve surgeries and joint replacements would be readmitted because of communication slipups.

"In the hospital, some of these patients got daily blood draws and had very frequent monitoring of the levels of drug in their body," says the Johns Hopkins infectious diseases physician. "At home, some of their weekly labs could be missed because they were not being received by the appropriate teams in this timely fashion."

She believes that without the structure and safety procedures of the inpatient world, treatment outside the hospital requires a multidisciplinary team of health-care professionals to ensure patients are getting the appropriate care.

Designed to meet this goal, the Outpatient Parenteral [Intravenous] Antimicrobial Therapy (OPAT) Service was launched at Johns Hopkins in 2021. Since then, it has treated more than 3,700 patients, mostly from East Baltimore, according to Keller, who serves as its medical director. In three years, the OPAT team has lowered hospital readmissions from nearly 30% to 18%.

The program is a collaborative effort among The Johns Hopkins Hospital, Johns Hopkins Bayview Medical Center, the Department of Medicine's Division of Infectious Diseases and Johns Hopkins Care at Home. The program's success lies in evidence-based practices founded in a decade of Keller's research on health care quality improvement, which has been largely supported by more than \$25 million in grants from the Centers for Disease Control and Prevention and the Agency for Healthcare Research and Quality at the U.S. Department of Health and Human Services.

"In addition to physicians, our team members include nurses and infectious diseases-trained pharmacists who can help with things like therapeutic drug monitoring and adjusting drug levels," Keller says. "We also have members of the team who are medical office coordinators and pharmacy technicians."

Such supervised collaboration allows patients to recover safely at home or at a skilled nursing facility while avoiding the cost of longer hospitalization and the risk of acquiring other infections.

Keller has spent years studying ways to improve this process. After completing her residency in internal medicine at Johns Hopkins, she completed fellowships in infectious diseases at the University of Pennsylvania and at the Penn Center for Healthcare Improvement & Patient Safety. When she returned to Johns Hopkins, she started building a team of physicians, nurses and pharmacists who could work together in post-discharge follow-up care, monitoring medication toxicity and adjusting therapy if needed.



"Our patients have many different comorbidities — everything from heart failure, necessitating ventricular assist devices, to very poorly controlled diabetes," she says. "About 10% also have a history of substance use disorders, and we have collaborations with addiction medicine about how best to manage them."

Patients discharged to skilled nursing facilities also require attentive care coordination, points out Paul Auwaerter, Johns Hopkins' clinical director of infectious diseases. "We don't really have privileges at these facilities, yet care is being rendered there by in-house physicians who don't have our expertise as infectious disease physicians. Fundamental to the success of OPAT is excellent communication among clinicians and nursing and pharmacists, regardless of the treatment location."

Auwaerter says the service has also removed some of the physicians' workload by providing highly skilled nurses and pharmacists who can quickly review test results and respond to calls.

"The improved communication and the ability to help supervise treatment on all levels really complement one another for the patient."

Affiliated with the Armstrong Institute for Patient Safety and Quality, Keller also directs the Patient Safety and Quality Improvement pathway for the Department of Medicine's residency program.

As part of OPAT's ongoing quality improvement efforts, Keller is researching how to prevent central line-associated bloodstream infections in patients needing antimicrobial therapy. Additionally, she is evaluating the experience of patients who are discharged and have to continue complicated regimens of oral antibiotics outside of the hospital setting.

"We're looking into how to incorporate those people into the program, as well as continuing to work with addiction medicine and case management to build additional supports for our patients," she says.

In the hospital, some of these patients got daily blood draws and had very frequent monitoring of the levels of drug in their body. At home, some of their weekly labs could be missed because they were not being received by the appropriate teams in this timely fashion.

Sara Keller, MD, MPH, MSPH

IMPACTFUL RESEARCH

Our reputation is built on excellence in basic, translational, and clinical science. Johns Hopkins infectious diseases investigators work every day to expand understanding, share new knowledge, and provide evidence-based expertise that guides improvements in patient outcomes globally. Our discoveries have led to some of the world's most significant advances in the prevention, diagnosis, and treatment of infectious diseases.



Study Finds HIV-to-HIV Kidney Transplants Are Safe and Effective

According to findings from a multi-center study led by Johns Hopkins Medicine and published October 2024 in *The New England Journal of Medicine*, transplanting kidneys from deceased donors who had HIV to recipients living with HIV is safe. Furthermore, the study found that these HIV-to-HIV kidney transplants are just as effective as those using organs from donors without HIV.

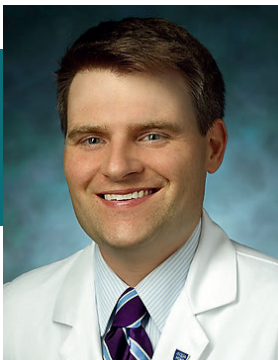
Dr. Christine Durand, the study's co-lead author, said of the team's results, "Based on the evidence generated at the 26 US transplant centers collaborating on this study, we support expanding HIV-to-HIV kidney transplants from their current 'research-only' authorization—as enabled by Congress passing the HIV Organ Policy Equity [HOPE] Act in 2013—to routine clinical practice."

The US Department of Health and Human Services announced its final rule on expanded access to kidney and liver transplants for people with HIV on November 27, 2024. The rule eliminated the need for clinical research and institutional review for kidney and liver transplants between donors with HIV and recipients with HIV, changing US health policy to allow these transplants to become standard. The ruling will not only expand the organ donor pool, but also reduce wait times for people in need of transplant.

Other members of the research team from Johns Hopkins Medicine were Serena Bagnasco, M.D.; Diane Brown, M.S.N., R.N.; Yolanda Eby, M.S.; Tao Liang, M.S.P.H.; Fizza Naqvi, M.B.B.S.; Darin Ostrander, Ph.D.; Andrew Redd, Ph.D. — jointly with the National Institute of Allergy and Infectious Diseases (NIAID) — and Aaron Tobian, Ph.D.

JHM News Release: <https://bit.ly/403XzCj>

Notice of US Health Policy Change: <https://bit.ly/4IH3ntS>



Hopkins Research Improves Understanding of Vaccine Efficacy for Immunocompromised Patients

People with compromised immune systems are among the most susceptible to infection and serious complications including severe illness, hospitalization, and death. Two different studies co-authored by Johns Hopkins ID investigators **Dr. Andrew Karaba** and **Dr. William Werbel** have revealed important

information about vaccine efficacy for transplant recipients and other people with weakened immunity.

The first study, published in *Clinical Infectious Diseases* in July 2024, found that people who are immunocompromised who receive booster doses of bivalent mRNA COVID-19 vaccines given every three to six months are better able to sustain their ability to neutralize multiple SARS-CoV-2 strains, protecting them against illness.

The second study, published in the *Journal of the American Medical Association (JAMA)* in December 2024, showed that people over age 60 with weakened immunity do not respond as strongly to vaccines against respiratory syncytial virus (RSV) as people of the same age with normal immune function.

JHM News Release, COVID: <https://bit.ly/4jhgCcr>

JHM News Release, RSV: <https://bit.ly/4IH5qU>

Global Health Giant

Thomas Quinn traced the origins of the AIDS pandemic; now he's hunting for a cure.

By Bridget M. Kuehn, *Northwestern Medicine Magazine*
July 22, 2024

As a clinical infectious disease fellow at the University of Washington in Seattle from 1979 to 1981, Thomas Quinn, '74 MD, MSc, was on the front lines of a race to identify the virus that was causing debilitating sickness and death predominantly in gay men across the United States. A critical clue about the origins of the virus came in the epidemic's second year of recognition when AIDS cases began emerging among heterosexual Haitian immigrants in the U.S.

Quinn jumped at the opportunity to chase this lead to Port-au-Prince, Haiti, where his epidemiologic investigations would trace the virus's origins back to Central Africa. In Kinshasa, Zaire, now the Democratic Republic of Congo, he collected patient samples and sent them to investigators at the Institute Pasteur in Paris, France. The virologists there used Quinn's samples and those collected in France to identify the human immunodeficiency virus (HIV) as the cause of acquired immunodeficiency syndrome (AIDS).

"I helped support that effort, and as an investigator and clinician, that is a very satisfying outcome," Quinn says. "But that was just the beginning of the story."

Quinn continued to write new chapters as he chased the virus around the globe. He was the first to identify HIV infections in India. He also became one of the founding fathers of the field of Global Health. He led the National Institute of Allergy and Infectious Diseases (NIAID) Section of International HIV/AIDS and STDs for almost four decades and has served as the founding director of the Johns Hopkins University Center for Global Health for almost two decades. The field of Global Health, he says, was borne out of frustration over the gross inequity in HIV care that emerged in the late 1990s and early 2000s as powerful antiretroviral therapies became available, but only for those in wealthier nations.

"When I would work at Hopkins taking care of my AIDS patients there, I could treat them with these brand new, revolutionary antiretroviral drugs that would save their lives," Quinn says. "Then, I would fly to Africa to work in clinics and there was no treatment. Those drugs were very expensive and were not available in the rest of the world."

Collision Course

When Quinn arrived at Northwestern for medical school in 1970, he had already spent a year studying malaria at the University of Notre Dame where he received a Master of Science degree after completing his undergraduate studies in biology in 1969. He continued his malaria studies at Feinberg and fell in love with infectious disease clinical care.



"When I would work at Hopkins taking care of my AIDS patients there, I could treat them with these brand new, revolutionary antiretroviral drugs that would save their lives. Then, I would fly to Africa to work in clinics and there was no treatment."

Thomas Quinn, MD

"Infectious diseases allowed me to help patients make a rapid recovery," he says. He noted that just a week of antibiotics could often lead to a full recovery in most infectious diseases.

His desire to pursue a career in international medicine was further cemented by a trip to Europe with his medical school roommate between his first and second year. Their journey took an unexpected turn when they ran out of money two weeks before their flight home and had to work in a pub on the remote Aran Islands in Ireland for food for the remainder of the trip.

"That trip shaped my love of international travel and work," he says.

He completed his internship and residency at Albany Medical Center Hospital in Albany, New York before joining NIAID's Laboratory of Parasitic Diseases as a research associate studying malaria for two years, from 1977 to 1979. Then, his fellowship took his career on a collision course with sexually transmitted diseases and eventually the HIV pandemic, which would be the focus of his life's work for the next 40-plus years.



In Seattle, he saw firsthand the stigma and loss associated with this mysterious disease, called AIDS. Many patients faced rejection by family and friends who feared infection. In 1981, Quinn returned to NIAID as a senior investigator in the Laboratory of Clinical Investigation, joined the faculty at Johns Hopkins University School of Medicine and became a special assistant for international programs on infectious diseases at the NIH's Fogarty International Center. In 1983, he and his colleagues working in Zaire found that AIDS was spreading through heterosexual sex and affecting equal numbers of men and women. However, this groundbreaking discovery was met with resistance. Reviewers at *The New England Journal of Medicine* rejected their manuscript arguing they had no proof and insisting that the infection was spread only among gay men or dirty needles. However, in 1984, he and his colleagues published the study in *The Lancet*. The same year, he co-founded Project SIDA, a collaboration among Zaire, the United States, and Belgium to study AIDS in Central Africa. By 1985, Quinn was leading the Section of International HIV/AIDS and STDs at NIAID, a role he held until last year. He now serves as NIH Scientist Emeritus in the Office of the Scientific Director at NIAID.

"It's a great success story," Quinn says. "I'm glad to be a small grain of sand in a much larger beach of people who worked hard to make a difference worldwide. My hats off to everyone who pitched in."

The inequity and the destabilizing effects of the HIV/AIDS pandemic also galvanized international leaders. In 2000, the United Nations Security Council unanimously passed a resolution to address the HIV/AIDS pandemic globally and created the Global Fund for AIDS, Tuberculosis, and Malaria, and President George W. Bush created the President's Emergency Plan for AIDS Relief (PEPFAR) in 2003. These and other global health efforts have helped expand the reach of effective HIV therapies with about three-quarters of the 39 million people living with HIV receiving therapy, according to the World Health Organization. The focus of global health has also expanded to include international efforts to improve health overall, including chronic diseases and mental health.

In 2006, Quinn became the founding director of the Johns Hopkins University Center for Global Health, and he continues in that role today. For much of the last five years, Quinn's lab has focused on developing a cure for HIV, but he briefly put that work aside when the pandemic hit to focus on COVID-19, with again a major focus internationally. His lab now studies both viruses. He continues, however, to marvel at how far global health and medicine have come since the early days of the AIDS epidemic.

"In my field of medicine, the most momentous occurrence is the biologic revolution that enabled scientists to identify the causative agent of COVID-19, sequence it, develop a vaccine, and come up with treatment all within a matter of months, instead of 35 or 40 years it took for HIV/AIDS," he says.



"There was a lot of denial about transmission in those early days," he says. "It became politicized and stigmatized."

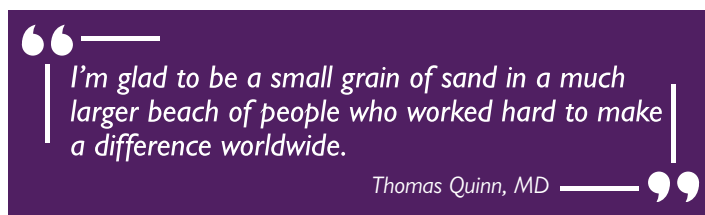
The first antiretroviral drug didn't become available in the U.S. until 1987, setting in motion a sea of change in HIV/AIDS care. The first therapies were highly toxic and triggered drug resistance after just six months, says Quinn, who witnessed that early revolution as both a clinician caring for patients and as a member of the U.S. Food and Drug Administration's Antiviral Review Committee from 1992 to 1996. However, it wasn't until the mid-1990s that triple therapies became available and revolutionized care for what had been a universally lethal disease into a treatable chronic condition.

"It took us to 1996 — 15 years from the first case being recognized," he says. "But once that happened, we were off to the races. New and more potent drugs came along, and now we are down to one pill per day."

Birth of Global Health

But that revolution in care didn't reach all patients. Quinn lobbied and advocated for generic drug development and drug company donations to help his patients in Uganda who continued to have no access to effective therapy. He says the efforts faced resistance from clinicians who felt patients in rural Africa could not keep up with the treatment regimens.

"That changed once we showed that with these treatment regimens, patients [in Africa] were living as long as anyone in the United States," he says.



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Chasing an Elusive Virus

In the mid-1980s, Robert F. Siliciano began studying a relatively new pathogen as a postdoc. When he began his own lab, he focused exclusively on the virus: HIV

Howard Hughes Medical Institute | December 12, 2024
Reprinted with permission from HHMI

"I was an MD-PhD student at The Johns Hopkins University School of Medicine in the early 1980s when the first articles were published describing this new disease, AIDS," remembers Robert Siliciano, an HHMI Investigator since 2002. "It sounded like it came out of nowhere and had something to do with the immune system, possibly a new virus. That piqued my interest."

But it wasn't until he started his postdoctoral work with Ellis L. Reinherz, a well-known researcher and expert in T cells, that Siliciano spent significant time studying HIV. Rather than working with a model antigen, as many immunologists do, Reinherz recommended that they study the relatively new pathogen that was driving an international crisis. That recommendation changed the course of Siliciano's career. When he returned to Hopkins to start his own lab in 1988, he focused exclusively on the virus that was now dominating health news.

"Initially I worked on HIV vaccines, I would have to say not very successfully," he says. "We still don't have one. But that got me thinking about how HIV could persist and evade the immune response. And I became interested in the idea of a latent infection."

A virus is latent when it remains in the body but does not produce symptoms. Siliciano points to herpes and shingles as common examples of viruses that can stay latent for years between outbreaks. When Siliciano zeroed in on studying HIV, it seemed unlikely that the virus would need to hide in the body this way, since its rapid mutations usually kept it one step ahead of the immune system.

"It was a shot in the dark," Siliciano says, but his lab discovered that HIV can in fact live in memory T cells—cells that "remember"



previous infections and allow the body to respond more quickly if the infection returns. In the mid-1990s, Siliciano's lab showed that the virus can remain latent in these cells, but so well hidden that it's nearly impossible to tell an infected memory T cell from an uninfected one. This breakthrough showed just how far off a cure truly was. If a patient stopped taking their retroviral drugs, the virus would begin replicating at detectable levels within two weeks.

An Enduring Focus

The virus's persistence helps explain why, two decades later, the Siliciano lab and their peers around the world are still working to find a vaccine or cure. But Siliciano says that the support of HHMI is essential to this work because of the Institute's steadfast focus on basic science.

"The HIV field is a bit insular," he says, "but to really move forward we need scientists who know fundamental aspects of gene regulation and immune response. If you only think about HIV, you probably don't have the best basic science grasp of the key areas. That's why it's so valuable to go to HHMI meetings and see people who are doing very fundamental work."

“Through collaboration, we can take advantage of all of the vaccine knowledge and infrastructure and technological capabilities that have grown in the last 40 years.”

Robert Siliciano, MD, PhD



He mentions HHMI Investigator Bert Vogelstein, an oncology professor at Johns Hopkins who Siliciano interacts with through their mutual HHMI connection. Their discussions about cancer biology have informed some of Siliciano's current work on latent HIV. Working with his wife and longtime collaborator **Janet Siliciano**, he is now trying to determine if individualized vaccines for patients would help address the problem of a virus that can hide in a latent form.

"Through collaboration," Siliciano says, "we can take advantage of all of the vaccine knowledge and infrastructure and technological capabilities that have grown in the last 40 years."

ID UNDER THE MICROSCOPE

Up to the Test

Meet the ID team dedicated to developing and reviewing rapid diagnostic tests that could be used worldwide for a wide range of infectious diseases.

By Richard Byrne, Johns Hopkins Medicine | February 12, 2025

Home pregnancy tests, blood glucose readings and HIV tests used to be the only diagnostics that Americans administered to themselves. But the battle against COVID-19 pushed point-of-care testing into the mainstream. Early in the pandemic, the public lined up at drive-through centers and in parking lots to be swabbed. But quality at-home antigen tests soon dominated the landscape, with free government distribution of rapid test kits broadening access.

At Johns Hopkins, Yuka Manabe, a professor in the Division of Infectious Diseases, and her diverse team of skilled researchers at the Center for Innovative Diagnostics for Infectious Diseases (CIDID) helped pave the way for these point-of-care tests—particularly in their key role as evaluators of companies developing these technologies as part of an NIH-funded initiative.

The dizzying trajectory of progress in making point-of-care tests better, cheaper and more broadly available both to medical professionals and the public now raises a new question: What's next?

Manabe and her team see deploying the technology more widely to meet unmet needs and deepen public health as the answer. Such advances offer a pathway to reach more effectively into underserved communities in the United States and around the world—particularly in addressing sexually transmitted diseases.

“Innovation without access,” quips Manabe, “is not innovation at all!”

CIDID's task of developing and reviewing the rapid diagnostic tests used worldwide for a wide range of infectious diseases situates the center at a busy crossroads of competing interests: the rigor of epidemiology versus the flexibility to create a rapid path from diagnosis to treatment, individual imperatives versus broader public health concerns.

“*It's almost like a dating service. We try to link up people who have technology that would apply to a disease that we know has a clinical need.*”

Yuka Manabe, MD

The recent successes in point-of-care diagnostics have made it an increasingly contested space. Epidemiologists whose efforts depend on collecting data to track the incidence and spread of disease argue that widespread at-home testing will upend the pipeline for essential data gathering if individuals don't report their results.

Manabe sees the power of a test that lets you know quickly if you are ill or harbor an infection, however, as foundational in any quest to improve global public health.



“We love the concept of individualized public health,” says Manabe, who has led CIDID since 2019. “I love it that I'm helping a person who will stop transmitting the disease to somebody else. To me, that is our sweet spot.”

‘Almost Like a Dating Service’

CIDID boasts 25 core faculty members drawn from across the Johns Hopkins system. These researchers pursue a wide-ranging program that includes gauging levels of resistance to antibiotics, broadening the role of testing in public health settings and refining the commercial pipeline from concept to commercial release. The center's work has been supported broadly by federal agencies, including NIH, the Centers for Disease Control and Prevention, and the Department of Defense.

The CIDID team has helped create diagnostic tests for gonorrhea, chlamydia and syphilis—as well as the first point-of-care diagnostic for molecular diagnosis of hepatitis C (HCV), which was approved by the Food and Drug Administration in June 2024. With just a fingerstick, the new test makes it possible for nonmedical personnel to deliver a diagnosis of HCV (a particular risk for injection drug users) within an hour—and potentially start treatment right away.

The significant progress in point-of-care testing's accuracy and speed promises to boost the effectiveness at clinics that are a lifeline for underserved communities in the U.S. and around the world.

“Rolling out of these kinds of technologies not only increases individual and public health, but it also decreases stigma—and we know that that's one of the barriers to be overcome in order to try and reverse the tide a little bit,” says CIDID team member **Matthew Hamill**, an associate professor in the Division of Infectious Diseases and clinical chief of sexually transmitted infections at the Baltimore City Health Department.

The work of CIDID researchers offers potential to meet other urgent unmet needs. **Matthew Robinson**, an assistant professor in the Division of Infectious Diseases, works on the emerging crisis in antimicrobial resistance (AMR) in India, where 300,000 people died from AMR-related infections in 2019.

“There are some types of antimicrobial resistance that are 50 times as common in India as they are in the U.S.,” says Robinson. “And with these types of resistance, we are down to one or two antibiotics left—and, in some cases, zero, so we have untreatable infections.”

He says that the center's work on point-of-care testing may offer a “cheap and fast” way to detect AMR and more quickly allow for effective treatment.

Creating tests is a complicated process, but many corporations, entrepreneurs and researchers are up for the challenge. CIDID has become a one-stop shop for those who seek help in developing new tests—from initial concept to commercial rollout—including Johns Hopkins faculty members.

Currently, the team is either working on or evaluating rapid diagnostics for conditions such as acute febrile illness, sepsis, tuberculosis, diarrheal disease and malaria.

“It’s almost like a dating service,” Manabe says. “We try to link up people who have technology that would apply to a disease that we know has a clinical need.”

The top considerations for developers are accuracy, cost and speed: Studies have shown that most people are willing to wait only 20–30 minutes for a test result. A test also must be easy to use. Can untrained people follow the self-testing instructions correctly? And the test materials must be nontoxic; environmentally friendly components are preferred.

Manabe says CIDID wants all developers who work with the center to succeed if they meet the rigorous demands for accuracy and cost. “We’re agnostic to all devices that come to us,” she says. Competitive pricing is also essential: “If your cost of goods is over a certain amount, we’re not that interested because we just don’t think that that’s going to help the problem.”

William O. Osburn, an assistant professor in the Division of Infectious Diseases, runs the center’s technical core, advising companies and evaluating new innovations appearing on the horizon. While CIDID’s insistence on affordability (under \$10 per test, preferably \$5) helps the team sift through projects that seek its collaboration, he identifies other hurdles at which the private sector stumbles.

“You have to have a relevant use case too,” Osburn observes. “We’ve brought in companies, and they have these proposals, and it’s like: They never talked to a clinician.”

Effectiveness is essential. “In the end, you’re going to fail or succeed based on your chemistry,” he continues. “You can have the coolest-looking machine that is easiest to use, but if you can’t detect anywhere near what you could do in the lab, it’s never going to work [in a clinical context].”

In the Business of Knowing

Manabe is also the associate director of global health research and innovation at the Johns Hopkins Center for Global Health, which is reflected in CIDID’s global reach, with projects now ongoing on four continents.

The center’s long-standing relationships with practitioners and larger health care and government institutions in Uganda are a point of particular pride. Manabe has been building upon these relationships since she spent five years working in the African nation, from 2007–2012, at the Infectious Diseases Institute (IDI) at Makerere College of Health Sciences. That work, she says, “made it clear to me that there is not diagnostic certainty in very many parts of the world.”

The depth of relationships that Manabe and other CIDID researchers have developed and nurtured with Ugandan colleagues ensures an atmosphere of mutual trust and benefit. “If it’s not a win/win, we walk away and part friends, and we come together on something else,” she observes. “There’s no room for win/neutral or win/lose.”

That win/win dynamic can generate immense benefits. Manabe points to a recent effort in Uganda to integrate testing for syphilis into existing mandatory HIV testing for pregnant women through a single platform that tests for both infections. “The thing is that the register has a line that says, ‘syphilis positive or negative,’” she observes. “Except that everybody was just not filling it out. They didn’t have the test.”

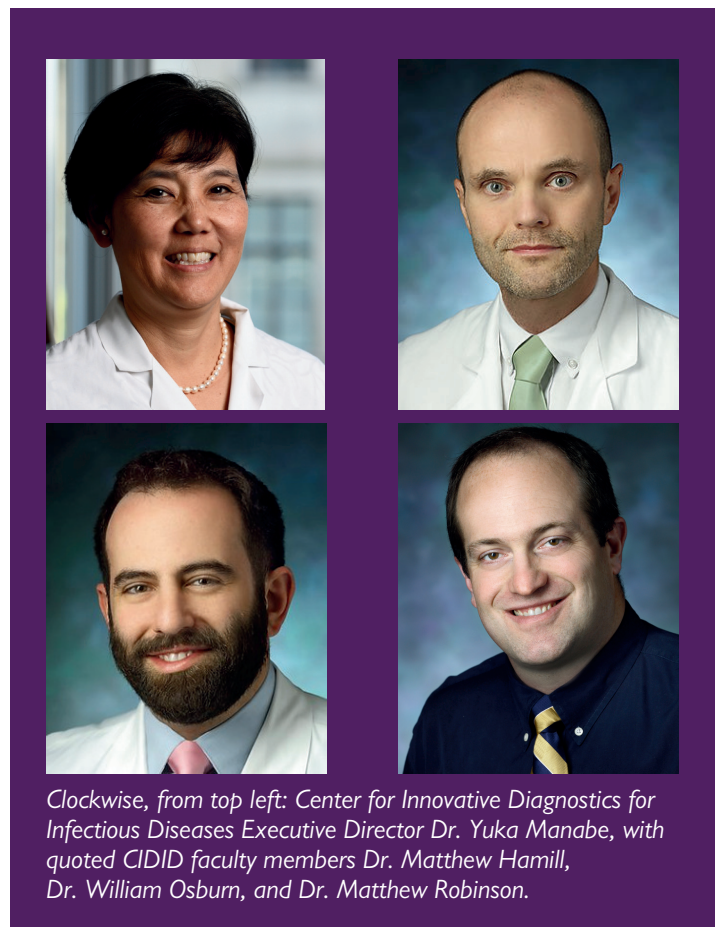
The costs associated with expanding testing became a barrier when Uganda’s Ministry of Health demurred on paying for syphilis tests. So Manabe and her team offered the tests at government facilities that the IDI supported. Not only did their efforts to scale up the program and educate women about syphilis prove to be a success, but Uganda adopted the new broader testing regime (paid for by national and international funds) in advance of the issuance of World Health Organization guidelines.

Manabe smiles, “I like to think we were part of that solution.”

The possible impacts that point-of-care testing’s emergence has raised for broader epidemiological study are ever present in the CIDID researchers’ thinking. As part of its efforts, Manabe’s team is working on grants for a “hackathon” aimed at making self-reporting sites easier to use so that essential epidemiological data do not get lost.

CIDID—and the entire community of diagnostics researchers—is on the front lines of contemporary medical practice in the most literal sense. It works on the border of detection and treatment. “Knowing puts you in a better place than not knowing,” Manabe observes, “so we’re just in the business of knowing. This is what we do.”

Karen Blum contributed to this article.



Clockwise, from top left: Center for Innovative Diagnostics for Infectious Diseases Executive Director Dr. Yuka Manabe, with quoted CIDID faculty members Dr. Matthew Hamill, Dr. William Osburn, and Dr. Matthew Robinson.

ID UNDER THE MICROSCOPE

Unlocking the Secrets of Colon Cancer

Johns Hopkins researchers suspect gut bacteria could hold clues to rising rates of colorectal cancer among younger Americans.



By Patrick Smith | Dome May/June 2024

While the incidence of colorectal cancer has decreased among the U.S. population overall, there has been a gradual, and alarming, increase in diagnoses among Americans under age 50. Earlier this year, the American Cancer Society reported that Americans born around 1990 have twice the risk of colon cancer compared with people born in the 1950s.

Johns Hopkins infectious diseases professors Cynthia Sears and Jessica Queen suspect the problems—and maybe the solutions—are hidden among the trillions of tiny bugs that live in our intestines.

Late last year, Sears and Queen led a team that published a review article in the journal *Nature Cancer*. “Understanding the Mechanisms and Translational Implications of the Microbiome for Cancer Therapy Innovation” presents recent insights in a field with which it can be hard to keep up.

“The whole topic has gotten huge,” says Sears, who has studied the microbiome for more than 20 years and was recently named a fellow of the American Association for the Advancement of Science. “There are thousands of studies now. The field has advanced in so many ways.”

In the article, the authors discuss how individual organisms, as well as complex communities of microbes, can be factors in the earliest stages of tumor growth. “We all know that colon polyps can turn into cancer,” says Sears. “That’s not new. But we know more about how that happens, thanks to all this research.”

“First, these little polyps appear. And if you take them out, you remove the risk of cancer. But if we don’t take them out and they get bigger, we start to see the microbiota stick to them and go down deeper, into the crypts, where new cells are generated.”

Queen says that, although investigations are in their early stages, there’s reason to be encouraged. “The colon holds trillions of bacteria—it represents the most dense population of microorganisms in the human body,” she says. “These bacteria are in constant contact with cells of the colon and the immune system, and it makes sense that these interactions could be really important for colorectal cancer development and progression.”

The authors detail the mechanics by which four distinct bacteria—*H. pylori*, *E. coli*, *B. fragilis* and *F. nucleatum*—promote formation and growth of tumors in the gut.

They also discuss the negative effects that tumor neoantigens (the new proteins that form on cancer cells as a result of tumor DNA mutations) can have on cancers. Those same neoantigens, say the authors, can be useful in treating colon cancer.

“Bacteria are the big mystery,” says Sears. “We’ve done pretty well with viruses and how they relate to cancer. We know the viral causes of certain kinds of liver cancer, for example. But we know much less about bacteria and how they work together in tumorigenesis.”

If scientists find 30 different bacteria on a tumor, she says, the question is what role each plays: Which ones matter? Where are they located? If they’re present at the beginning, did they cause the cancer? Or once the tumor growth starts, are they affecting what happens? What molecules and proteins they’re making and what combinations are most important are tough, tough questions.

As early-onset colorectal cancer continues to rise, Sears says, screening colonoscopies can be life saving. “Nearly every agency in the field recommends that preventive screening colonoscopies begin at age 45,” she says. “Since most early colorectal cancer is in individuals in their 40s to early 50s, starting preventive care on time should have impact on patient well-being.”

The greatest challenge Sears and Queen see, though, is convincing the health care and pharmaceutical research industries to spend enough money to translate research into therapeutics that can actually affect patient care.

“The most important thing we can do in the research community is to put the microbiome into action,” Sears says. “If we don’t do longitudinal studies in humans, then we’re not following what we’ve learned from the science.”

Queen says stool samples and biopsies from patients with cancer show that several specific bacteria are commonly associated with specific cancers.

“The field is largely focused now on understanding what those bacteria may be doing mechanistically,” says Queen. “And as helpful as mice are as models, they are not humans. We need more data from clinical samples and longitudinal follow-up of patients to better understand how the microbiome impacts progression of disease and response to treatment.”

Sears says that rigorous, well-funded studies have helped researchers learn that mucous-invasive groups of microorganisms (polymicrobial biofilms) are present on more than half of colon cancers and surgically removed polyps.

“To date, the strongest experimental evidence for biofilms as direct tumor promoters comes from studies of human colon biofilms,” says Sears. “Yes, it’s expensive. But that’s science, right? Answering questions leads to more questions. And that’s what pushes us in the right direction.”

Research Honors and Impact

FDA Permits Marketing of First Point-of-Care Hepatitis C RNA Test

June 27, 2024: The U.S. Food and Drug Administration granted marketing authorization to Cepheid for the Xpert HCV test and GeneXpert Xpress System, the first hepatitis C virus (HCV) test that can be used to bring diagnosis to appropriately certified point-of-care settings for individuals at risk for hepatitis C. Rather than requiring a sample to be sent to a central lab for testing, the test detects HCV RNA and delivers results in about an hour using a blood sample from the fingertip.

This authorization enables a test-and-treat approach where a person can be tested for HCV, and if positive for HCV RNA, be linked to care and potentially receive treatment during the same health care visit.

“Despite the existence of a safe and highly effective oral cure for hepatitis C, many people do not know they have the disease due partly to the lack of availability of convenient, widespread testing options,” said Jeff Shuren, M.D., J.D., director of the FDA’s Center for Devices and Radiological Health. “Equipping health care providers with tools to diagnose and treat patients in the same visit can result in hundreds of thousands more hepatitis C patients being diagnosed and treated, preventing individual disease progression and additional spread of the virus.”



The Johns Hopkins Center for Innovative Diagnostics for Infectious Diseases (CIDID) participated in the clinical study that led to the development of the Xpert HCV test.

Read more: <https://bit.ly/3GluOnI>

Developing Rapid Diagnostic Tests for Infectious Diseases

Karen Blum | Dome, January/February 2025

Dr. Yuka Manabe, director of the Center for Innovative Diagnostics for Infectious Diseases, aims to improve global health with point-of-care tests that give rapid results. **Read more:** <https://bit.ly/3ZDw29F>



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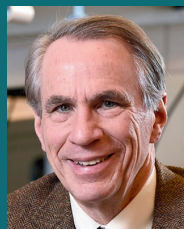
CYNTHIA SEARS, MD
Elected Fellow
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AAAS Fellowship honors individuals whose exceptional efforts on behalf of the advancement of science in service to society have distinguished them among their peers.



DIANE GRIFFIN, MD, PhD
Elected Member
American Academy of
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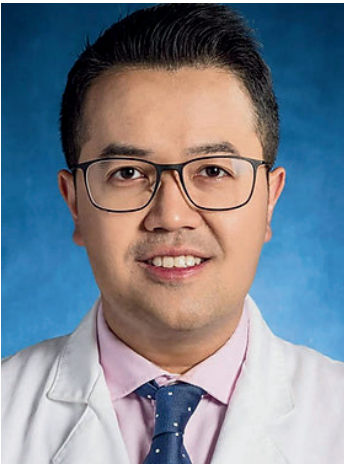
Members are elected to the Academy for their outstanding leadership and extraordinary contributions in their fields, across the US and around the world.



ID Faculty Among World’s Most Cited Researchers

Dr. Sabra Klein, Dr. Lisa Maragakis, and Dr. Robert Siliciano were included on the 2024 Highly Cited Researchers list compiled by Clarivate Analytics. The annual list recognizes researchers whose publications rank in the top 1% of citations for field and publication year over the past decade.

Read more: <http://bit.ly/3GWaoqW>



Permpalung Awarded by Medical Mycology Society of the Americas

Dr. Nate Permpalung received the 2024 Thomas J. Walsh Junior Investigator Award from the Medical Mycology Society of the Americas. This award is presented to an instructor, assistant professor, or equivalent junior faculty member for distinguished early achievements and promising potential for future contributions to the field of medical mycology. Dr. Permpalung serves as Director of Mycology Research in the ID Division and is Associate Director for Clinical Trials in the Transplant Research Center at Johns Hopkins School of Medicine. His research interests include respiratory viral infections, invasive fungal infections, fungal-viral interactions, fungal diagnostics, and human pythiosis.

Solomon Receives NIDA Avant-Garde Award

Issued by the National Institute on Drug Abuse (NIDA), the Avant-Garde Award Program for HIV and Substance Use Disorder Research supports individual scientists of exceptional creativity who propose high-impact research that will lead to new avenues for prevention and treatment of HIV among people who use drugs. **Dr. Sunil Solomon's** research will evaluate the feasibility and acceptability of long-acting antiretroviral therapy (LA ART) via ethnography, estimate the efficacy and safety of LA ART vs. oral ART among previously unsuppressed People Who Inject Drugs (PWID) via a clinical trial, and model the cost-effectiveness of LA ART among PWID populations using agent-based modeling incorporating costs.



ID Faculty Shape WHO Global AMR Research Priorities

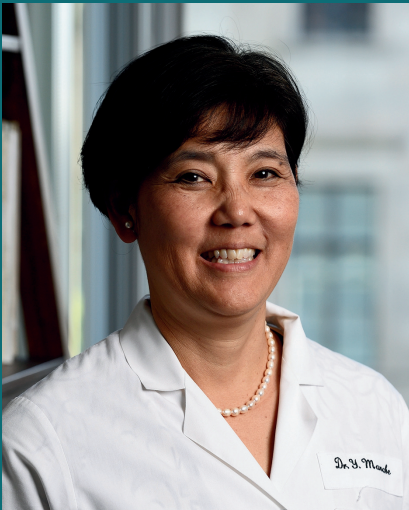
ID faculty members **Dr. Sara Cosgrove** and **Dr. Richard Chaisson** were co-authors on an article published in *The Lancet Microbe* outlining the World Health Organization's top antimicrobial resistance (AMR) research priorities to be addressed by the year 2030. The WHO research agenda for AMR comprises 40 areas of focus that reflect the most crucial knowledge gaps and aim to guide scientific interest and investment, inform global health policy, and effectively combat AMR globally.

Read the article: <https://bit.ly/4iN7p1b>

Melendez Invited as Professor in Residence at Infectious Diseases Institute

Dr. Johan Melendez was invited to serve as Professor in Residence at the Infectious Diseases Institute (IDI) at Makerere University in Kampala, Uganda. The program is supported by the Accordia Global Health Foundation, a non-profit organization committed to overcoming the burden of infectious diseases in Africa by building health care capacity and strengthening medical institutions. IDI Professors in Residence are accomplished international physician scientists with a broad range of clinical and investigative interests. Invited experts spend two to four weeks at the IDI mentoring, training, and supervising medical students, residents, PhD scholars, fellows, medical officers, and others. The program is designed to provide existing infectious diseases professionals with the skills and knowledge required to face current challenges and to prepare a new generation of leaders in infectious diseases clinical care and investigation.





CDC Tuberculosis Elimination Champions

The Centers for Disease Control and Prevention (CDC) counted **Dr. Yuka Manabe** and **Dr. Maunank Shah** among its 2024 CDC US TB Elimination Champions for their impactful work in preventing and controlling tuberculosis. This initiative highlights individuals and organizations whose efforts advanced TB elimination in the US, showcasing their achievements and best practices.

Dr. Manabe is instrumental in investigating TB immunopathogenesis within the Johns Hopkins Center for TB Research. She has worked in TB diagnostics and care for more than 20 years. Her clinical and laboratory training model provides on-site support for health care workers and resulted in higher TB case detection and better treatment completion rates in Uganda.

Dr. Shah is the medical director for the Baltimore City Health Department TB Program. He is also president of the National Society of TB Clinicians and chaired the development of the first national guidelines for TB respiratory isolation in community settings. Dr. Shah helped develop IDCrowd, a TB electronic consultation platform, and co-invented video directly observed therapy software.



Shah Honored by NTCA President

Dr. Maunank Shah was one of two recipients of the 2024 National Tuberculosis Coalition of America (NTCA) President's Award. The award, given at the discretion of the NTCA president, recognizes individuals who demonstrate exemplary service and expertise in the fight against TB.

Dr. Shah is an internationally-recognized expert in TB prevention, diagnosis, and treatment. He is the medical director for the Baltimore City TB program, a past-President of the National Society of TB Clinicians, and serves on the Maryland Tuberculosis Guidelines committee. Additionally, Dr. Shah is director of the Johns Hopkins Center for Infectious Diseases Education, Advancement and Learning (C-IDEAL) and serves as co-director of microbiology and infectious disease curriculum for students at the Johns Hopkins School of Medicine.

The NTCA imagines a world free of tuberculosis, protecting public health by advancing the elimination of TB in the United States through the combined, concerted action of state, local, and regional programs. Established in 1995, the NTCA brings together leaders of tuberculosis control programs across the United States, as well as county and city health departments that organize their own TB control initiatives.

Selected High Impact Research Publications

The selected publications represent those on which ID researchers are first and/or last author.

New England Journal of Medicine

Safety of Kidney Transplantation from Donors with HIV. Durand CM, Massie A, Florman S, Liang T, Rana MM, Friedman-Moraco R, Gilbert A, Stock P, Mehta SA, Mehta S, Stosor V, Pereira MR, Morris MI, Hand J, Aslam S, Malinis M, Haidar G, Small CB, Santos CAQ, Schaanman J, **Baddley J**, Wojciechowski D, Blumberg EA, Ranganna K, Adebisi O, Elias N, Castillo-Lugo JA, Giorgakis E, Apewokin S, Brown D, **Ostrander D**, Eby Y, Desai N, Naqvi F, Bagnasco S, Watson N, Brittain E, Odum J, **Redd AD**, Tobian AAR, Segev DL; HOPE in Action Investigators. *N Engl J Med.* 2024 Oct 17;391(15):1390-1401. doi: 10.1056/NEJMoa2403733. PMID: 39413376; PMCID: PMC11606542.

Sexually Transmitted Diseases

(Six papers in one issue! Sept. 2024)

An Ode to the STI Clinic. Rompalo AM. *Sex Transm Dis.* 2024 Sep 1;51(9):575. doi: 10.1097/OLQ.0000000000002036. PMID: 39150111.

Discovering "The Great Imitator" and Finding a Home in the Pages of This Journal. Ghanem KG. *Sex Transm Dis.* 2024 Sep 1;51(9):584. doi: 10.1097/OLQ.0000000000002011. PMID: 39150116.

Names Matter: Thomas Parran and the American Sexually Transmitted Diseases Association. Zenilman JM, Stoner BP. *Sex Transm Dis.* 2024 Sep 1;51(9):576-577. doi: 10.1097/OLQ.0000000000002015. PMID: 39150112.

Sexually Transmitted Diseases at 50: Historical Notes. Rietmeijer CA, **Zenilman JM**. *Sex Transm Dis.* 2024 Sep 1;51(9):555-556. doi: 10.1097/OLQ.0000000000001998. PMID: 39150101.

The Intimate Interface of HIV and Sexually Transmitted Infections Over 40 Years. Quinn TC. *Sex Transm Dis.* 2024 Sep 1;51(9):633-634. doi: 10.1097/OLQ.0000000000002012. PMID: 39150143.

From the Cold Chain to Point-of-Care Tests for Chlamydia and Gonorrhea: Personal Reflections. Gaydos CA, Manabe YC. *Sex Transm Dis.* 2024 Sep 1;51(9):599-600. doi: 10.1097/OLQ.0000000000002026. PMID: 39150125.

Nature

Whittling down the bacterial subspecies that might drive colon cancer. Sears CL, Queen J. *Nature.* 2024 Apr;628(8007):275-276. doi: 10.1038/d41586-024-00662-z. PMID: 38509290.

Nature Immunology

Long-term antiretroviral therapy rejuvenates the HIV-specific CD8+ T cell response. Blankson JN. *Nat Immunol.* 2024 Sep;25(9):1513-1514. doi: 10.1038/s41590-024-01924-8. PMID: 39179933.

Bispecific antibodies promote natural killer cell-mediated elimination of HIV-1 reservoir cells. Board NL, Yuan Z, Wu F, Moskovljevic M, Ravi M, Sengupta S, Mun SS, **Simonetti FR**, Lai J, Tebas P, Lynn K, Hoh R, Deeks SG, **Siliciano JD**, Montaner LJ, **Siliciano RF**. *Nat Immunol.* 2024 Mar;25(3):462-470. doi: 10.1038/s41590-023-01741-5. Epub 2024 Jan 26. PMID: 38278966; PMCID: PMC10907297.

Nature Medicine

Restocking the tuberculosis drug arsenal. Nuermberger EL, Chaisson RE. *Nat Med.* 2024 Mar;30(3):642-643. doi: 10.1038/s41591-024-02840-y. PMID: 38459183.

Journal of Infectious Diseases

Orthopoxvirus-Specific T-Cell Responses in Convalescent Mpox Patients. Traut CC, **Jones JL**, Sanders RA, Clark LR, **Hamill MM**, Stavrakis G, Sop J, Beckey TP, **Keller SC**, **Gilliams EA**, Cochran WV, **Laeyendecker O**, **Manabe YC**, Mostafa HH, **Thomas DL**, Hansoti B, **Gebo KA**, **Blankson JN**. *J Infect Dis.* 2024 Jan 12;229(1):54-58. doi: 10.1093/infdis/jiad245. PMID: 37380166; PMCID: PMC10786252.

Selected High Impact Research Publications

Nature Communication

Precision arbovirus serology with a pan-arbovirus peptidome. Morgenlander WR, Chia WN, Parra B, Monaco DR, Ragan I, Pardo CA, Bowen R, Zhong D, Norris DE, Ruczinski I, Durbin A, Wang LF, Larman HB, **Robinson ML**. Nat Commun. 2024 Jul 11;15(1):5833. doi: 10.1038/s41467-024-49461-0. PMID: 38992033; PMCID: PMC11239951.

Journal of the American Medical Association

Antibody Response to Respiratory Syncytial Virus Vaccination in Immunocompromised Persons. Karaba AH, Hage C, Sengsouk I, Balasubramanian P, Segev DL, Tobian AAR, **Werbel WA**. JAMA. 2025 Feb 4;333(5):429-432. doi: 10.1001/jama.2024.25395. PMID: 39786402; PMCID: PMC11795327.

Extended-Infusion β -Lactam Therapy, Mortality, and Subsequent Antibiotic Resistance Among Hospitalized Adults With Gram-Negative Bloodstream Infections. Karaba SM, Cosgrove SE, Lee JH, Fiawoo S, Heil EL, Quartuccio KS, Shihadeh KC, Tamma PD. JAMA Netw Open. 2024 Jul 1;7(7):e2418234. doi: 10.1001/jamanetworkopen.2024.18234. PMID: 38954416; PMCID: PMC11220563.

Smallpox Readiness: Modern Strategies Against an Ancient Disease. Gostin LO, Singaravelu S, **Hynes N**. JAMA. 2024 Sep 17;332(11):873-874. doi: 10.1001/jama.2024.8614. PMID: 38990528.

Lancet Global Health

Projected health and economic effects of a pan-tuberculosis treatment regimen: a modelling study. Ryckman TS, McQuaid CF, Cohen T, Menzies NA, **Kendall EA**. Lancet Glob Health. 2024 Oct;12(10):e1629-e1637. doi: 10.1016/S2214-109X(24)00284-5. Epub 2024 Aug 16. PMID: 39159654; PMCID: PMC11413512.

Economic implications of novel regimens for tuberculosis treatment in three high-burden countries: a modelling analysis. Ryckman TS, Schumacher SG, Lienhardt C, Sweeney S, Dowdy DW, Mirzayev F, **Kendall EA**. Lancet Glob Health. 2024 Jun;12(6):e995-e1004. doi: 10.1016/S2214-109X(24)00088-3. PMID: 38762299; PMCID: PMC11126367.

Lancet HIV

Voucher incentives to improve viral suppression among HIV-positive people who inject drugs and men who have sex with men in India: a cluster randomised trial. Solomon SS, McFall AM, Srikrishnan AK, Verma V, Anand S, Khan RT, Kushwaha BS, Vasudevan C, Saravanan S, Paneerselvam N, Kumar MS, Das C, Celentano DD, Mehta SH, **Lucas GM**. Lancet HIV. 2024 May;11(5):e309-e320. doi: 10.1016/S2352-3018(24)00005-5. Epub 2024 Apr 4. PMID: 38583461; PMCID: PMC11177221.

Annals of Internal Medicine

Long COVID Diagnostics: An Unconquered Challenge. Antar AAR, Auwaerter PG. Ann Intern Med. 2024 Sep;177(9):1279-1280. doi: 10.7326/M24-0892. Epub 2024 Aug 13. PMID: 39133926.

Science

HIV cure: The daunting scale of the problem. Siliciano JD, Siliciano RF. Science. 2024 Feb 16;383(6684):703-705. doi: 10.1126/science.adk1831. Epub 2024 Feb 15. PMID: 38359111.

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Neutralizing antibodies evolve to exploit vulnerable sites in the HCV envelope glycoprotein E2 and mediate spontaneous clearance of infection. Frumento N, Sinnis-Bourozikas A, Paul HT, Stavarakis G, Zahid MN, Wang S, Ray SC, Flyak AI, Shaw GM, **Cox AL, Bailey JR**. Immunity. 2024 Jan 9;57(1):40-51.e5. doi: 10.1016/j.immuni.2023.12.004. Epub 2024 Jan 2. PMID: 38171362; PMCID: PMC10874496.

Johns Hopkins Medicine Matters Articles of the Week

MDA5 RNA-sensing pathway activation by *Mycobacterium tuberculosis* promotes innate immune subversion and pathogen survival. Bullen CK, Singh AK, Krug S, Lun S, Thakur P, Srikrishna G, **Bishai WR**. JCI Insight. 2023 Oct 23;8(20):e166242. doi: 10.1172/jci.insight.166242. PMID: 37725440; PMCID: PMC10619499.

Glutamine metabolism inhibition has dual immunomodulatory and antibacterial activities against *Mycobacterium tuberculosis*. Parveen S, Shen J, Lun S, Zhao L, Alt J, Koleske B, Leone RD, Rais R, Powell JD, **Murphy JR**, Slusher BS, **Bishai WR**. Nat Commun. 2023 Nov 16;14(1):7427. doi: 10.1038/s41467-023-43304-0. PMID: 37973991; PMCID: PMC10654700.

Proviral location affects cognate peptide-induced virus production and immune recognition of HIV-1-infected T cell clones. Dragoni F, Kwaa AK, Traut CC, Veenhuis RT, Woldemeskel BA, Camilo-Contreras A, Raymond HE, Dykema AG, **Scully EP**, **Rosecrans AM**, Smith KN, Bushman FD, **Simonetti FR**, **Blankson JN**. J Clin Invest. 2023 Nov 1;133(21):e171097. doi: 10.1172/JCI171097. PMID: 37698927; PMCID: PMC10617777.

Impact of recipient age on mortality among Cytomegalovirus (CMV)-seronegative lung transplant recipients with CMV-seropositive donors. Belga S, Hussain S, **Avery RK**, Nauroz Z, **Durand CM**, King EA, Massie A, Segev DL, Connor AE, Bush EL, Levy RD, Shah P, **Werbel WA**. J Heart Lung Transplant. 2024 Apr;43(4):615-625. doi: 10.1016/j.healun.2023.11.017. Epub 2023 Dec 6. PMID: 38061469.

Early Microbiologic Markers of Pulmonary Tuberculosis Treatment Outcomes. Paradkar MS, Pradhan NN, Balaji S, Gaikwad SN, Chavan A, Dharmashale SN, Sahasrabudhe T, Lokhande R, Deshmukh SA, Barthwal M, Atre S, Raskar SS, Sawant TU, Gupte AN, Kakrani A, **Golub J**, Padmapriyadarsini C, **Gupta A**, Gupte NA, Mave V. Ann Am Thorac Soc. 2023 Dec;20(12):1760-1768. doi: 10.1513/AnnalsATS.202302-144OC. PMID: 38038600; PMCID: PMC10704230.

Inhibition of host PARP1 contributes to the anti-inflammatory and antitubercular activity of pyrazinamide. Krug S, Gupta M, Kumar P, Feller L, Ihms EA, Kang BG, Srikrishna G, Dawson TM, Dawson VL, **Bishai WR**. Nat Commun. 2023 Dec 9;14(1):8161. doi: 10.1038/s41467-023-43937-1. PMID: 38071218; PMCID: PMC10710439.

Hepatitis C in Black Individuals in the US: A Review. **Falade-Nwulia O**, Kelly SM, Amanor-Boadu S, Nnodum BN, Lim JK, **Sulkowski M**. JAMA. 2023 Dec 12;330(22):2200-2208. doi: 10.1001/jama.2023.21981. PMID: 37943553.

Decline in prevalence of tuberculosis following an intensive case finding campaign and the COVID-19 pandemic in an urban Ugandan community. **Kendall EA**, Kitonsa PJ, Nalutaaya A, Robsky KO, Erisa KC, Mukiibi J, Cattamanchi A, Kato-Maeda M, Katamba A, Dowdy D. Thorax. 2024 Mar 15;79(4):325-331. doi: 10.1136/thorax-2023-220047. PMID: 38050134; PMCID: PMC10947924.

Bispecific antibodies promote natural killer cell-mediated elimination of HIV-1 reservoir cells. Board NL, Yuan Z, Wu F, Moskovljevic M, Ravi M, Sengupta S, Mun SS, **Simonetti FR**, Lai J, Tebas P, Lynn K, Hoh R, Deeks SG, **Siliciano JD**, Montaner LJ, **Siliciano RF**. Nat Immunol. 2024 Mar;25(3):462-470. doi: 10.1038/s41590-023-01741-5. Epub 2024 Jan 26. PMID: 38278966; PMCID: PMC10907297.

Neutralizing antibodies evolve to exploit vulnerable sites in the HCV envelope glycoprotein E2 and mediate spontaneous clearance of infection. Frumento N, Sinnis-Bourozikas A, Paul HT, Stavrakis G, Zahid MN, Wang S, **Ray SC**, Flyak AI, Shaw GM, **Cox AL**, **Bailey JR**. Immunity. 2024 Jan 9;57(1):40-51.e5. doi: 10.1016/j.immuni.2023.12.004. Epub 2024 Jan 2. PMID: 38171362; PMCID: PMC10874496.

Projected health and economic effects of a pan-tuberculosis treatment regimen: a modelling study. **Ryckman TS**, McQuaid CF, Cohen T, Menzies NA, **Kendall EA**. Lancet Glob Health. 2024 Oct;12(10):e1629-e1637. doi: 10.1016/S2214-109X(24)00284-5. Epub 2024 Aug 16. PMID: 39159654; PMCID: PMC11413512.

Comparison of QuantiFERON Gold In-Tube Versus Tuberculin Skin Tests on the Initiation of Tuberculosis Preventive Therapy Among Patients Newly Diagnosed With HIV in the North West Province of South Africa (the Teko Study): A Cluster Randomized Trial. Jarrett BA, Shearer K, Motlhaoleng K, Chon S, Letuba GG, Qomfo C, Moulton LH, Cohn S, Lebina L, **Chaisson RE**, Variava E, Martinson NA, **Golub JE**. Clin Infect Dis. 2024 Sep 26;79(3):751-760. doi: 10.1093/cid/ciae268. PMID: 39036871; PMCID: PMC11426260.

HOPE springs eternal: lack of HIV superinfection in HIV Organ Policy Equity Act kidney transplants. **Durand CM**, **Redd AD**. J Clin Invest. 2024 Oct 15;134(20):e184326. doi: 10.1172/JCI184326. PMID: 39403922; PMCID: PMC11473159.

Johns Hopkins Medicine Matters Articles of the Week

Antibody Response to Respiratory Syncytial Virus Vaccination in Immunocompromised Persons. Karaba AH, Hage C, Sengsouk I, Balasubramanian P, Segev DL, Tobian AAAR, **Werbel WA**. JAMA. 2025 Feb 4;333(5):429-432. doi: 10.1001/jama.2024.25395. PMID: 39786402; PMCID: PMC11795327.

Single Monoclonal Antibodies Should Not Be Used for COVID-19 Therapy: A Call for Antiviral Stewardship. Casadevall A, Focosi D, Pirofski LA, **Shoham S**. Clin Infect Dis. 2024 Dec 17;79(6):1404-1407. doi: 10.1093/cid/ciae408. PMID: 39115342.

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Adverse Pregnancy Outcomes Among Women with Human Immunodeficiency Virus Taking Isoniazid Preventive Therapy During the First Trimester. Gupta A, Hughes MD, Cruz JL, Avihingsanon A, Mwelase N, Severe P, Omoz-Oarhe A, Masheto G, Moran L, Benson CA, **Chaisson RE**, Swindells S. Clin Infect Dis. 2024 Mar 20;78(3):667-673. doi: 10.1093/cid/ciad583. PMID: 37768207; PMCID: PMC10954322.

COVID-19 vaccination induces distinct T-cell responses in pediatric solid organ transplant recipients and immunocompetent children. Roznik K, Xue J, Stavakis G, Johnston TS, Kalluri D, Ohsie R, Qin CX, McAteer J, Segev DL, Mogul D, **Werbel WA, Karaba AH**, Thompson EA, **Cox AL**. NPJ Vaccines. 2024 Apr 5;9(1):73. doi: 10.1038/s41541-024-00866-4. PMID: 38580714; PMCID: PMC10997632.

Convergent evolution and targeting of diverse E2 epitopes by human broadly neutralizing antibodies are associated with HCV clearance. Ogega CO, Skinner NE, Schoenle MV, Wilcox XE, Frumento N, Wright DA, Paul HT, Sinnis-Bourozikas A, Clark KE, Figueroa A, Bjorkman PJ, **Ray SC**, Flyak AI, **Bailey JR**. Immunity. 2024 Apr 9;57(4):890-903.e6. doi: 10.1016/j.immuni.2024.03.001. Epub 2024 Mar 21. PMID: 38518779; PMCID: PMC11247618.

Voucher incentives to improve viral suppression among HIV-positive people who inject drugs and men who have sex with men in India: a cluster randomised trial. Solomon SS, McFall AM, Srikrishnan AK, Verma V, Anand S, Khan RT, Kushwaha BS, Vasudevan C, Saravanan S, Paneerselvam N, Kumar MS, Das C, Celentano DD, Mehta SH, **Lucas GM**. Lancet HIV. 2024 May;11(5):e309-e320. doi: 10.1016/S2352-3018(24)00005-5. Epub 2024 Apr 4. PMID: 38583461; PMCID: PMC11177221.

Economic implications of novel regimens for tuberculosis treatment in three high-burden countries: a modelling analysis. Ryckman TS, Schumacher SG, Lienhardt C, Sweeney S, Dowdy DW, Mirzayev F, **Kendall EA**. Lancet Glob Health. 2024 Jun;12(6):e995-e1004. doi: 10.1016/S2214-109X(24)00088-3. PMID: 38762299; PMCID: PMC11126367.

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Johns Hopkins Medicine Matters Articles of the Week

Characterizing Patients Presenting on Hospital Admission With Central Line-Associated Bloodstream Infections: A

Multicenter Study. Oladapo-Shittu O, **Cosgrove SE**, **Rock C**, Hsu YJ, Klein E, Harris AD, Mejia-Chew C, Saunders H, Ching PR, Gadala A, Mayoryk S, Pineles L, **Maragakis L**, Salinas A, Helsel T, **Keller SC**. Clin Infect Dis. 2024 Jun 14;78(6):1632-1639. doi: 10.1093/cid/ciae144. PMID: 38483930.

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Cox SR, Erisa KC, Kitonsa PJ, Nalutaaya A, Nantale M, Kayondo F, Mukibi J, Mukibi M, Nakasolya O, Dowdy DW, Katamba A, **Kendall EA**. Ann Am Thorac Soc. 2024 Jun;21(6):875-883. doi: 10.1513/AnnalsATS.202308-752OC. PMID: 38259069; PMCID: PMC11160129.

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Morgenlander WR, Chia WN, Parra B, Monaco DR, Ragan I, Pardo CA, Bowen R, Zhong D, Norris DE, Ruczinski I, Durbin A, Wang LF, Larman HB, **Robinson ML**. Nat Commun. 2024 Jul 11;15(1):5833. doi: 10.1038/s41467-024-49461-0. PMID: 38992033; PMCID: PMC11239951.

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McQuaid CF, **Ryckman TS**, Menzies NA, White RG, Cohen T, **Kendall EA**. Emerg Infect Dis. 2024 Aug;30(8):1571-1579. doi: 10.3201/eid3008.240541. PMID: 39043388; PMCID: PMC11286077.

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Extended-Infusion β -Lactam Therapy, Mortality, and Subsequent Antibiotic Resistance Among Hospitalized Adults With Gram-Negative Bloodstream Infections.

Karaba SM, **Cosgrove SE**, Lee JH, Fiawoo S, Heil EL, Quartuccio KS, Shihadeh KC, Tamma PD. JAMA Netw Open. 2024 Jul 1;7(7):e2418234. doi: 10.1001/jamanetworkopen.2024.18234. PMID: 38954416; PMCID: PMC11220563.

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Hoffmann CJ, Shearer K, Kekana B, Kerrigan D, Moloantoa T, **Golub JE**, Variava E, Martinson NA. Clin Infect Dis. 2024 May 15;78(5):1256-1263. doi: 10.1093/cid/ciad727. PMID: 38051643; PMCID: PMC11093672.

More research publications from the
Division of Infectious Diseases



2025 UPDATE: SCIENCE SILENCED

For nearly eight decades, academic institutions across the country have partnered with the United States government to conduct research for the public welfare that the government isn't equipped or staffed to conduct. This model of operations has been highly successful, positioning our nation as a global leader of scientific, medical, and technical innovation. Recent and proposed cuts to federally funded research undermine progress in biomedical discovery and are a threat to our nation's global standing as a trusted collaborator.

Johns Hopkins University is America's first academic medical research institution. Beginning in January, more than \$800 million in grants from the USAID were terminated across the university, and more than 90 grants terminated by other federal agencies have resulted in an additional loss of more than \$50 million in funding. Notices of grant terminations are arriving across the university system nearly every week. Claiming the #2 spot in the School of Medicine in sponsored research funding with 80% of our work relying on federal funds, the Division of Infectious Diseases has been disproportionately affected. Two-thirds of our grants have been delayed since the beginning of the year, and no new research grants were awarded between January and March.

We're grateful to Dr. Risha Irvin, Dr. Kathleen Page, Dr. Eileen Scully, and Dr. Sunil Solomon for sharing their stories, and we stand proudly with our colleagues at Johns Hopkins and at institutions across the country whose work has been compromised by the loss of federal funding.

Impact Across Johns Hopkins University*



Grant Terminations and Suspensions

The government has announced terminations, cancellations, or stop work orders affecting research across Hopkins, including the loss of more than \$800 million from U.S. Agency for International Development grant terminations. A further 90 grants from other agencies have been terminated since January, causing the loss of more than \$50 million in federal funding for our researchers, with more terminations arriving nearly every week.



Delays to new research awards and renewals

Many federal agencies have significantly slowed the release of new research awards and the renewal of existing awards, leading to a sharp drop in federal research investment at Hopkins and other universities. From late January through late May 2025, new research funding awards were down by nearly two-thirds as compared to the same period in 2024.



Proposed cuts to federal research funding

Multiple federal funding agencies, including the National Institutes of Health, National Science Foundation, Department of Defense, and the Department of Energy, have sought to unilaterally cut the amount that they reimburse universities for indirect but vital research expenses like electricity to power labs, technology infrastructure, and expert staff to maintain facilities and equipment. If these cuts go into effect, they would eliminate more than \$300 million in research funding every year at Johns Hopkins.

**Source: Johns Hopkins University Research Saves Lives | researchsaveslives.jhu.edu*

SCIENCE SILENCED

In the wake of crucial research funding cuts enacted or threatened by the current administration, raising our voices in defense of science, highlighting the importance of global collaboration in the fight against infectious diseases, and advocating for our colleagues and the thousands of patients we treat—real people in need of highly specialized care—are fundamental to the work we do.

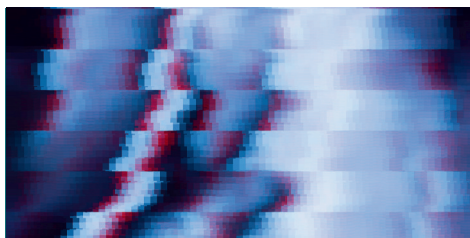


'People are shocked': A hostile health-care takeover is underway

The Washington Post | January 29, 2025

"People are shocked. They don't see a clear future."

Dr. Jonathan Zenilman



The haphazard nihilism of America's new Department of Government Efficiency

CNN | March 1, 2025

"...people that would normally respond (to outbreaks)...They've been fired or they are not around to do that."

Dr. Yuka Manabe



Hundreds from Hopkins Stand Up for Science at D.C. Rally

Johns Hopkins Hub | March 10, 2025



Johns Hopkins to Cut More Than 2,000 Workers Funded by Federal Aid

The New York Times | March 13, 2025

"Stopping funding isn't going to kill you today, but in six months you're going to see an impact around the world."

Dr. Sunil Solomon

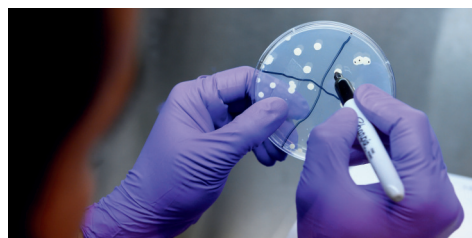


Fear spreads that NIH will terminate grants involving South Africa

Science | March 14, 2025

"They just can't make us stop treating people."

Dr. Richard Chaisson



Clinical trials face uncertain futures amid Trump cuts

ScienceNews | April 17, 2025

"Our team will do everything we can to maximize what we can learn."

Dr. Christine Durand



NIH grant cuts will axe clinical trials abroad—and could leave thousands without care

Nature | May 30, 2025

"Tuberculosis might seem very far away [in the US], but even a few infections can end up being very costly."

Dr. Amita Gupta



NIH funding policy deals new blow to HIV-related trial networks

Science | May 30, 2025

"If we can't keep staff and the lights on, then we're going to have some real waste..."

Dr. Amita Gupta



Closed CDC lab was cornerstone of national, global STI science

Healio | June 4, 2025

"...we keep an eye on what's going on elsewhere, so that we can anticipate what might happen here in the US."

Dr. Yuka Manabe

Generation Tomorrow: Summer Health Disparity Scholars

By Erin DuPont, Division of Infectious Diseases | April 11, 2025

Since 2013, Dr. Risha Irvin has guided dozens of future leaders in science and medicine through an immersive experience designed to encourage and inspire. Under her leadership, along with co-directors Dr. Nathan Irvin and Dr. Denis Antoine, the Generation Tomorrow: Summer Health Disparity Scholars pathway program has become a highly competitive, highly sought-after internship for college students interested in exploring HIV and hepatitis C (HCV) health disparities and their intersection with substance use, violence, mental health, and the social determinants of health. The federal funding that allowed Generation Tomorrow to expand its summer 2025 enrollment from 10 students to 20 has been terminated, and the future of the program is in jeopardy.

“Our three-year grant was awarded in September 2024. We were notified on April 4, 2025, that the grant was terminated. We should be able to run our summer program this year, but then after that we don't have any more funding.”

Generation Tomorrow is on the front lines of responding to two of the most serious health conditions impacting Baltimore residents: HIV and HCV. As of 2021, there were more than 18,000 people living with HIV in Baltimore and from 2015 to 2019 Baltimore City had the highest number of confirmed cases of chronic HCV in all of Maryland. The prevalence of infection is compounded by comorbidities including cardiovascular and kidney disease, diabetes, substance use, and mental illness, and barriers to care including poverty, unemployment, and substandard housing.

“...these things are going to be highly competitive, just because there are so many people looking for funding now. And these types of training programs have always been traditionally funded by NIH—there's just not a lot of [private] foundations in the space. So, I don't know who's going to fill that void.”

Risha Irvin, MD, MPH

Over the course of 10 weeks, Summer Health Disparity Scholars undergo mandatory training in HIV and HCV case detection, testing, and counseling; get hands-on experience in the field with community partners across Baltimore; conduct research guided by dedicated Johns Hopkins faculty mentors; and receive valuable career development guidance. Irvin says many of the program's graduates have gone on to medical school and some are now entering residency training, poised to launch meaningful careers as clinicians and researchers.



“Students want to know how to apply what they're doing in the real world, and this program provides a really diverse perspective about what health and health equity mean. Several of our students email us updates periodically, just to say how important the program was.”

In Generation Tomorrow: Summer Health Disparity Scholars, Irvin has created a training model that benefits the community it serves just as much as the aspiring physicians and scientists it prepares.

“You're having community members work with students and really teach them and train them, and that continues to build partnerships between our institution and the community and bonds us in our aim of improving health care for our community.”

To have funding cut off just as the program was poised for significant expansion is a loss Irvin is still trying to process.

“We started this program with 10 students per summer and if we need to, I'd rather keep it going and scale back than stop it. We need at least 10 to make it a meaningful experience for both students and faculty, but if this cancellation holds, we would have to find another funding source.”

Generation Tomorrow provides housing and a small stipend for students enrolled in the summer program. These are the biggest expenses covered by grant funding, but also the most difficult to secure from non-federal sources, especially given the nature of the program itself.

“I think the problem [alternative funding] presents right now is that these things are going to be highly competitive, just because there are so many people looking for funding now. And these types of training programs have always been traditionally funded by NIH—there's just not a lot of [private] foundations in the space. So, I don't know who's going to fill that void!”



SCIENCE SILENCED

Improving Access to Care in Baltimore's Immigrant Communities

By Molly Bowen, Division of Infectious Diseases | April 11, 2025

The Baltimore area's immigrant community may have no greater health champion than Dr. Kathleen Page. Her research focuses on engaging immigrants living on low incomes—often wary of U.S. institutions—in healthcare, and developing strategies to keep them connected. One of her research grants—evaluating social network-based referrals, training, and word of mouth as a vaccination outreach strategy—has been terminated. Another, comparing social marketing and peer referral strategies to improve access to and utilization of COVID testing, and to health services overall—awaits an April 17 court decision, about which Page is not optimistic.

"It's a sinking feeling, realizing it is only a matter of time before all of my grants are terminated. My work sits at the intersection of migration and health, and what had long been a point of pride for our team—our ability to engage some of the most underserved populations in research and to serve as an institutional resource—has now become a liability."

Beginning in 2010, Page focused on sexual health and HIV prevention and treatment using social marketing and street outreach, serving approximately 10,000 immigrants, and establishing her team as a trusted community resource. During the COVID pandemic, she mobilized a multi-partner coalition to build community-based clinics that offered testing, vaccines, food, financial assistance, and long-term follow-up to more than 40,000 people. Her team was the first to document the impact of COVID on immigrants without documentation and to show the power of social networks in encouraging people to seek care and in combating misinformation. The deep trust her team built with the community allowed them to respond swiftly and effectively during a time of widespread institutional mistrust, demonstrating a model critical for reaching marginalized populations in future public health crises.

More recently, Page has led efforts to address the behavioral health needs of immigrants—many of whom have experienced traumatic events—through a program offering free, culturally tailored mental health care through bilingual outreach, therapy, case management, and navigation.

Her longitudinal study documenting the impact of violence and discrimination on health has enrolled 1300 participants and is positioned to offer rare insight into the long-term health consequences of immigration policies. Engaging immigrant populations in research depends on deep, sustained trust—something Page has earned through decades of compassionate care and community partnership.

"We are uniquely situated to study the impact of immigration policies on health. Migration is a global phenomenon and our work has relevance well beyond Baltimore."

Through The Access Partnership, a program that provides access to care to thousands of uninsured immigrants, she is assessing the effect of anti-immigrant policies on healthcare utilization and clinical outcomes. In her own clinic, the consequences are stark.



"Patients are afraid to come to the clinic, to go out and exercise, to take their kids to school. We've seen rising blood pressure, worsening diabetes control, and extremely high anxiety, especially among parents who worry that they will be separated from their children."

The chilling effect extends beyond her patients. The research terminations are already rippling through the next generation of researchers.

"Young trainees and junior scientists see no clear path forward. My grants have served as a springboard for young researchers. Two of my mentees have already lost their funding for projects on HIV and suicide prevention. Another is in limbo, despite receiving a stellar score on a K23 many months ago. The loss to research of these talented investigators is hard to come to terms with."

My work sits at the intersection of migration and health, and what had long been a point of pride for our team—our ability to engage some of the most underserved populations in research and to serve as an institutional resource—has now become a liability.

Kathleen Page, MD



Exploring Sex-Specific Features of HIV

By Molly Bowen, Division of Infectious Diseases | April 11, 2025

Across the population, there is marked variation in the response to an infection. One primary source of variation is biological sex, with multiple examples of differences between men and women in how infectious diseases develop, progress, and react. In the case of HIV, although more than 51% of the population of people living with HIV is female, they represent just 10-20% of the individuals enrolled in most of the foundational studies of HIV immunopathogenesis and cure. While there are numerous examples of differences between men and women, there is very minimal mechanistic research.

“*Defining these basic biological features is critical to unlocking the potential for precision medicine in infectious diseases.*”

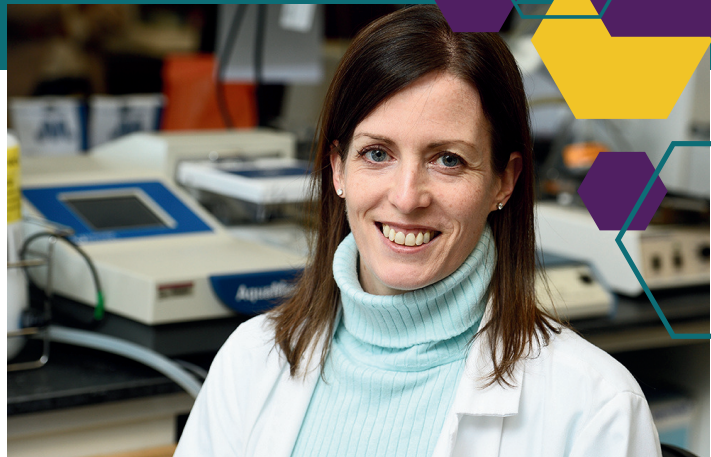
Eileen Scully, MD, PhD

Dr. Eileen Scully conducts basic research to address this critical knowledge gap. Her lab is working to define the biological mechanisms for differences in the immunopathogenesis of HIV and explore the contributions of genetics, sex steroid exposure, and their combination. This is particularly important for HIV cure, because many of those therapies do not target the actual virus—they are host-directed, meaning they work to elicit response from the body's immune system. The role that estrogen plays in the immune response is a major focus of her work, and both cisgender women and transgender women who take estrogen are included in her studies.

“Our lab studies how biological sex (genetics and hormones) and gender (behaviors and social context) impact the outcomes of infectious diseases, with a particular focus on HIV,” Scully explains. “While we are focused on basic mechanisms that are primarily captured in biological sex, our study designs are carefully controlled for gender to better reflect the multiple factors that drive infectious disease outcomes.”

The first part of the first study, published in *JCI Insight*, was a sex-specific genome-wide association study that found substantial differences between men and women in the relationship between genes and HIV viral load and control of the virus, with implications for development of an effective HIV vaccine and therapeutics. Scully has more manuscripts drafted for publication, and her lab had further experiments underway and planned. She was anticipating a no-cost extension when her grant was terminated on 2025 March 20.

Another grant was just awarded in late November of 2024, which would support the hiring of two additional lab staff for initiation of single-cell sequencing and viral reservoir studies on the samples already in hand with plan for receipt of the prospectively collected samples towards the end of year one. That grant, too, was terminated on March 20.



A widely sought-after lecturer at scientific conferences, Scully's work has been lauded in the HIV research community for filling a critical gap in knowledge, with implications for tailored patient care.

“The work has potentially broad applications across the lifecourse in women including menopause and pregnancy, when there are shifts in sex steroid hormone exposure. The excess risk of cardiovascular disease specifically in women living with HIV remains an important clinical challenge that needs deeper study. Defining these basic biological features is critical to unlocking the potential for precision medicine in infectious diseases.”

In addition, the work also addresses a critical knowledge gap for transgender women, who are at very high risk of HIV, and about whom little is known about the immune and inflammatory consequences of hormone therapy.

“Our studies would provide foundational data on the impact of estradiol on HIV and immunologic outcomes that has potential relevance to all people exposed to sex steroid hormones, whether endogenous or exogenous.”

The loss of funding has dramatically shifted the Scully lab's position from one of planned scale-up to move things forward at pace, to an uncertain survival. The grants together supported her effort, 1.5 graduate students, part of a shared group lab manager, and she had planned to hire a staff scientist and a graduate student/technician. The terminations have left many questions about the future of PhD graduate students and of her work more broadly.

“Without federal support there are limited options to advance the work,” she acknowledges. “It's too far removed from an immediate therapeutic to generate significant industry support. Philanthropic donations from grateful patients are rare in HIV, which has a substantially higher burden among people in lower socioeconomic demographics in the United States. Many larger foundations are more focused on global implementation of treatment and prevention than on basic discovery work.”

Read more about the significance of Dr. Scully's work in Johns Hopkins Dome:
<https://bit.ly/4dM325s>

HIV/AIDS Services for Key Populations Affected by HIV

By Molly Bowen, Division of Infectious Diseases | April 11, 2025

In 2019, Dr. Sunil Solomon began an impressively large, 7-year program to provide evidence-based, life-saving care to people living with HIV/AIDS across 6 states in India, and to keep them engaged in care. Funded under a PEPFAR grant administered by USAID, he employed a team of nearly 700 people in both the U.S. and India to develop, implement, and evaluate community outreach, testing, treatment, education, and care retention services to mitigate the epidemic among children, adolescents, and adults. The need is there: with an estimated 2.4 million people with HIV, India has the second highest burden of HIV globally.

As of December 31, 2024, Project ACCELERATE had tested nearly 112,000 people for HIV, diagnosing nearly 20,000 new cases, almost all of who were linked to life-saving ART. Through a network of 38 antiretroviral therapy clinics across 2 Indian states, the program supported more than 170,000 people with HIV, including nearly 8,000 children and adolescents. The services were intended to be turned over to the Indian government at its conclusion in 2026, ensuring sustainability going forward.

On January 24, 2025, Solomon received a stop work order from USAID. Three weeks later, he received a waiver to resume the life-saving activities in his program. Then on February 26, the award was fully terminated, including the life-saving care that Solomon's team was providing.

Findings from his program received national attention, and were used to inform India's strategies for PrEP, transgender healthcare, and approaches to reach vulnerable populations in virtual spaces like Grindr and Tinder. With the burden of HIV among India's transgender community 20 times higher than the national average, ACCELERATE established the first clinics to serve transgender persons in India. Three clinics, serving approximately 6,000 transgender men and women in Pune, Hyderabad, and Thane provided HIV services integrated with primary care, government and social service navigation, legal assistance, and served as places where people felt safe to come.

"We provided convenient, quick care tailored to people's needs. People can sometimes spend a whole day to complete a visit at an ART center. Our approaches demonstrated that there are more efficient and effective ways to provide care."

Because people are increasingly finding partners online, the program also created a virtual model of health care delivery that offers anonymity in seeking HIV services. The program offered options for people to visit the clinic for testing, PrEP, and ART, or to self-test and have medications delivered, and more than 3,000 people were started on PrEP through this virtual platform, which is now terminated.

"I can start someone on PrEP in an hour or two, but keeping them on for years takes a lot of engagement. We put signs up on the doors of the clinics/website landing page with a phone number as we left, but that's just a barrier to seeking care."



If it's inconvenient, people don't go. They won't get their tests, they won't refer partners and friends into care. People will just stop, and lives will be lost. This is completely preventable."

Another casualty of the termination is children and adolescents living with HIV. Solomon's program provided home delivery of medication so that children would not have to miss school for clinic visits. And the program's 4 Adolescent Friendly Health Centers—gathering places for teens living with HIV—offered social programs for kids who are often isolated due to stigma of the disease. The Centers offered drama, martial arts, music activities that are all terminated.

"Kids need to take ART to survive, but to really live and thrive, they need to have fun. We were in the process of evaluating the impact of these initiatives—when we first started the activities, viral suppression among teens at one of our centers was 67%. At our last evaluation, it was 95%."

"We made a promise to the community we served, and they relied on us. A trust is broken that I'm not sure we can regain."

Sunil Solomon, MBBS, PhD, MPH

The grant termination undermines the impact that this program could have at the national level. Translating research findings, from programs to policy, going from implementing and evaluating strategies at the clinic level to changing policies at the National-level to improve outcomes at the population level is why research is conducted.

"It's difficult to come to terms with ending the program before we turned it over to the Indian government. We made a promise to the community we served, and they relied on us. A trust is broken that I'm not sure we can regain. We were seeing encouraging, tangible results, and just abandoning people and the program before we could show the return on investment in healthcare engagement and retention, demonstrate strategies that reduce India's HIV burden, and make it part of India's nation program is deflating. The findings could have impact on outcomes well beyond India, including in the US."

Students and junior investigators at Hopkins have also been affected. They were relying on Solomon's project network for their own studies, which in turn, have been terminated, including the dissertation of a doctoral student.

"The termination of the program, and others across the university, is having a real impact on budding careers. Where do students and early career investigators go from here?"

EXCELLENCE IN EDUCATION

Training the Next Generation: Adult ID Fellowship

Founded in 1981, the Adult Infectious Diseases Fellowship Program at Johns Hopkins University School of Medicine is committed to training the next generation of leaders in infectious diseases. Supported by our incredible faculty, our amazing administrative team, and a culture of solidarity amongst our fellows, our program is designed to help trainees build upon their personal and professional goals and prepare them for impactful careers.

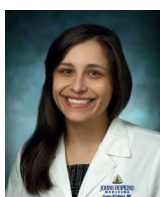
Program Leadership



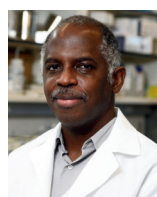
Michael Melia, MD
Fellowship Program Director



Sara Cosgrove, MD, MS, FSHEA, FIDSA
Chair, Fellowship Research Review Committee
Principal Investigator, Fellowship Program T32 Grant



Sonya Krishnan, MD, MHS
Fellowship Program Associate Director



Joel Blankson, MD, PhD
Co-Chair, Fellowship Research Review Committee
Co-PI, Fellowship Program T32 Grant

A Lasting Legacy



For more than four decades, the Hopkins ID fellowship program has shaped the field through collaborative and cross-disciplinary learning opportunities that span the spectrum of infectious diseases affecting communities locally and globally. Fellows are encouraged to take advantage of the abundant resources

Hopkins offers to create a path that accommodates their individual interests and career objectives.

Career Development Awards

Support for early-stage investigators is crucial in launching successful research careers for recent fellowship graduates. Since 2005, 23 of 25 Hopkins ID fellows have secured either an NIH Mentored Research Career Development K Award or Burroughs Wellcome Fund Career Award for Medical Scientists.



92% of Hopkins ID fellowship graduates have received a five-year career award when pursued to completion

Fellowship Graduate Career Paths

Hopkins ID training is helping establish a diverse workforce in infectious diseases, ensuring advances in the field in patient care, research, and education.

70%

Academic medicine

15%

Government positions (NIH, CDC, etc.)

15%

Other fields, including private industry and clinical practice



Fellows Forward

A biannual publication for Johns Hopkins ACGME Adult ID Fellowship Alumni



Alumni Newsletter

2024 saw the launch of *Fellows Forward*, a twice yearly newsletter from the Division of Infectious Diseases designed to engage our fellowship graduates with relevant alumni news, features, publications, events, and more.

**Congratulations,
2024 ID Fellowship Graduates!**



Pictured, left to right:

Morgan Walker, MD

Current position: 4th Year Fellow
National Institutes of Health

Luis Gonzalez Corro, MD

Current position: Assistant Professor
NYU Grossman School of Medicine

Darek Hareza, MD

Current position: Assistant Professor
Northwestern University Feinberg School of Medicine

Joowhan Sung, MD, MSc

Current position: Assistant Professor
Johns Hopkins Division of Infectious Diseases

Dr. Michael Melia, Adult ID Fellowship Program Director

**Welcome, Incoming Fellows!
Joining the Hopkins ID Division in July 2025**



Dr. Jordan Cahn

MD from UC Irvine
Residency & Chief Residency at Cambridge Health Alliance

Dr. Kristi Hill

MD from Harvard University
Residency in the Osler Program at Johns Hopkins

Dr. Anthony Lee

MD from the University of Miami
Residency at the University of Washington
Current first-year critical care fellow at NIH

Dr. Pronoma Srivastava

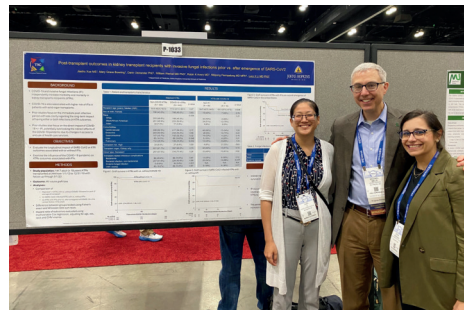
MD from St. George's University
Residency & Chief Residency at Stony Brook University

Hopkins ID Fellows Impress at IDWeek 2024

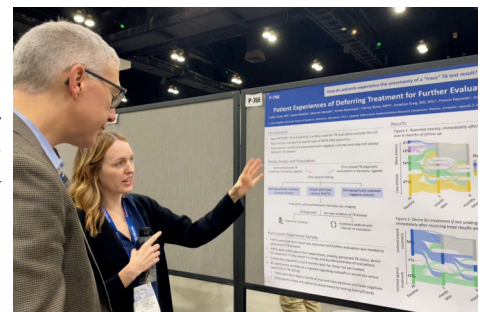
The ID Fellowship program was well represented at IDWeek 2024 in Los Angeles. Emily Hoff, Sima Sharara, Caitlin Visek, Seth Judson, and Lucy Li presented posters; Emily Hoff delivered a rapid fire talk. Also in attendance was second-year fellow Ruth Howe.



Pictured above, l to r: Second-year fellow Emily Hoff, Fellowship Program Associate Director Sonya Krishnan, third-year fellow Caitlin Visek, third-year fellow Lucy Li, Fellowship Program Director Michael Melia



Third year fellow Lucy Li, Program Director Michael Melia, and Program Associate Director Sonya Krishnan at Lucy's poster presentation.



Third year fellow Caitlin Visek presents her research poster to Michael Melia.

Leading Education in the School of Medicine

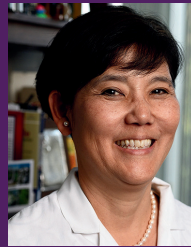
ID faculty serve in academic leadership positions at Johns Hopkins University and in the School of Medicine, helping to shape the training of the next generation of physicians and physician-scientists in a broad range of specialties.

Osler Medical Residency Training Program

The United States' first medical residency program, Osler continues its storied history of training future leaders in medicine. The program offers a wide variety of rigorous, evidence-based experience in acute and ambulatory medicine and numerous opportunities to develop scholarship in research, patient care, and education.



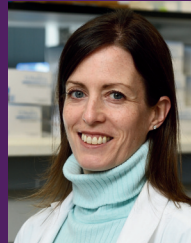
Natasha Chida, MD, MSPH
Director, Osler Medical Residency



Yuka Manabe, MD
*Co-Director, Global Health Pathway
Osler Medical Residency Program*



Sara Keller, MD, MPH, MSPH
*Director,
Patient Safety and Quality Improvement Pathway
Osler Medical Residency Program*



Eileen Scully, MD, PhD
*Director, Physician Scientist Pathway
Osler Medical Residency Program*

2024 Johns Hopkins Institute for Excellence in Education Outstanding Educator Awards

The Program and Curriculum Development Award is intended to recognize a noteworthy medical or biomedical team responsible for a teaching program which has been implemented for five years or less. Programs are judged on their impact on learners, including learner satisfaction, educational outcomes attained, and scholarship and recognition.

Recipient of the 2024 award, the Johns Hopkins Department of Medicine Medical Education Pathway (co-directors Tina Zhang, MD, and Paul O'Rourke, MD, MPH, and **Natasha Chida, MD, MSPH**) is designed to prepare physicians in the Osler and Bayview residency programs for robust careers in medical education. Participants engage in a rigorous educational environment with strong mentorship and support, and receive training in curriculum development, education scholarship, leadership and administration, teaching, and other relevant skills.

Bayview Internal Medicine Residency Program

Housed on the Johns Hopkins Bayview Medical Center campus, the Bayview internal medicine residency program is built on the mission of medicine as a public trust. This ethos pervades every aspect of training, aiming to celebrate the reasons residents choose medicine and inspiring them to become life-long contributors to the profession.



Erica Johnson, MD, FACP, FIDSA
Director, Bayview Medical Residency



Khalil Ghanem, MD
*Deputy Director of Education
Bayview Medical Residency*

Guiding Futures in Medicine and Beyond



Andrea Cox, MD, PhD
Director, Medical Scientist Training Program

For those pursuing doctoral level training in medicine and biomedical research, the Johns Hopkins MD-PhD program is one of the best in the nation.



Khalil Ghanem, MD
*Director
Graduate Training Program in Clinical Investigation*

Learners gain skills necessary to design and conduct clinical investigations in emerging medical science, and apply new techniques to better understand human pathophysiology.



Kelly Gebo, MD, MPH
Director, Clinical Research Scholars Program

The program is designed to develop future leaders trained in research design, skilled in the tools of clinical investigation, and committed to innovative collaboration.



Jessica Queen, MD, PhD
Co-Director, Doctoral Diversity Program

The DDP provides support to post-baccalaureate scholars from under-resourced backgrounds interested in pursuing doctoral degrees in health and biomedical research.



Damani Piggott, MD, PhD
Director, Vivien Thomas Scholars Initiative

Rigorous pathway program that welcomes students from a broad range of academic backgrounds in their pursuit of PhDs in STEM fields at Johns Hopkins.



Johns Hopkins Welcomes Third Cohort of Vivien Thomas Scholars

19 scholars join JHU to begin pursuing PhDs as part of \$150M initiative designed to advance pathways for students from Historically Black Colleges and Universities (HBCUs) and minority-serving institutions in STEM fields. <https://bit.ly/4k0i1uQ>

A Commitment to Continuing Medical Education

Center for Infectious Diseases Education, Advancement, and Learning (C-IDEAL)

Launched in 2024, C-IDEAL promotes, supports, and advances infectious diseases education to improve the health and lives of people around the world. The center's goals are to democratize infectious diseases knowledge and expertise for health care providers globally, to offer support and resources to medical faculty engaged in infectious diseases education and innovation, and to provide strategic vision and organizational infrastructure for educational initiatives.

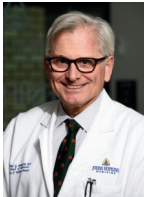
C-IDEAL Leadership



Maunank Shah, MD
Director



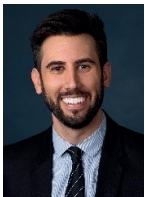
Jonathan Golub, MPH, PhD



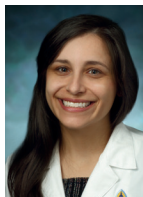
Paul Auwaerter, MD, MBA



Christopher Hoffmann, MD, MSC, MPH



Steven Clipman, MSPH, PhD



Sonya Krishnan, MD, MHS



Khalil Ghanem, MD



Sunil Solomon, MBBS, MPH, PhD



Jeffrey Tornheim, MD, MPH

U.S. Course on Infectious Diseases in Primary Care

Held on the Johns Hopkins University Homewood campus May 31 to June 1, 2024, the U.S. Course on Infectious Diseases in Primary Care welcomed more than 50 attendees from as far as Florida for two days of lively interactive sessions and connection. Attendees had the opportunity to meet with and learn from Hopkins ID faculty on a range of topics including antiretroviral therapy for HIV; antibiotic resistance; bacterial, viral, fungal, and parasitic skin infections; sexually transmitted diseases; and more.

Inaugural C-IDEAL Courses

In-Person Courses:

Frontiers in Clinical Infectious Diseases Symposium
The Pamela Tucker Johns Hopkins Course in Transplant Oncology and Infectious Diseases
Foundations in Clinical Infectious Diseases, India

Self-Paced Online Courses:

Primer on Infectious Diseases for Primary Care Providers
Advanced Topics in Clinical Infectious Diseases and AMR
Foundations in HIV Medicine

Coming in 2025:

Advanced Care of Persons with HIV
Antimicrobial Resistance, India

Explore courses: <https://bit.ly/4IEI1vw>



India Course on Infectious Diseases in Primary Care

The Intensive Course on Infectious Diseases in Primary Care, India, convened June 21-23, 2024, in New Delhi, India. Johns Hopkins ID faculty instructors and colleagues provided attendees a thorough understanding of various infectious diseases including HIV, latent TB, skin and soft tissue infections, community-acquired pneumonia, and sexually transmitted infections, as well as vaccine updates and critical information on antibiotic usage and stewardship. At the end of the course, participants were presented with a certificate of completion from Johns Hopkins Medicine.



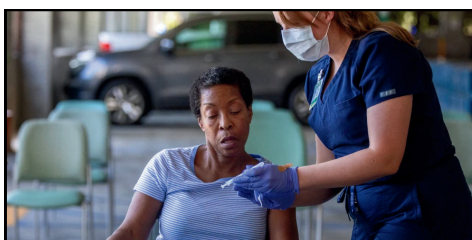
NEWS AND EVENTS

Our faculty are internationally-recognized experts in the field of infectious diseases. They are regularly consulted by print and digital media outlets, both traditional and emerging, to offer insight, share information, and explain the impact of disease prevention, treatment, care, and research to the public. The following is just a small sampling of the more than 4,500 interviews, profiles, op-eds, press releases, announcements, and other media reports from our division in 2024.



Why are Painful Blisters From Shingles Appearing on People Under 50?

Discover | January 22, 2024



CDC may recommend a spring Covid booster for some groups

NBC News | February 15, 2024



Your 2024 Guide to Covid Symptoms and Treatment

The New York Times | February 26, 2024



Syphilis: An age-old disease stalking modern America

Financial Times | April 1, 2024



Why some people are volunteering to be infected with diseases

BBC | August 27, 2024



A Rare Mosquito-Borne Illness is on the Rise. Here's What to Know.

Huffpost | August 27, 2024



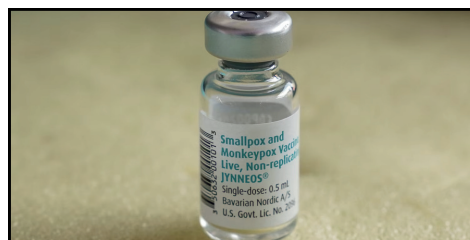
Thinking about fall vaccines? Doctors say there's no time like the present

PBS News | September 12, 2024



Tuberculosis patient possibly exposed hundreds at Georgia school, amid global rise

USA Today | October 31, 2024



Here's what you need to know about mpox after CDC sent alert to doctors

ABC News | November 19, 2024



US okays organ transplants between people with HIV, expanding donor pool

The Washington Post | November 27, 2024



This drug is the 'breakthrough of the year'—and it could mean the end of the HIV epidemic

NPR | December 12, 2024

More news from the
Division of Infectious Diseases



Notable Events



Dr. Gupta Joins Ambassador Garcetti in India

ID Division Director **Dr. Amita Gupta** (front row, right) joined then-US Ambassador to India Eric Garcetti, university presidents, and delegates from the Association of American Universities (AAU) on a trip to New Delhi in February 2024. The group discussed priorities for the Indo-US Global Challenges Institute and Indo-US STEM initiatives.

Allen Conference Room Dedication

Current division director **Dr. Amita Gupta** was joined by former director **Dr. David Thomas** to dedicate the Dr. James Allen Conference Room in the Carnegie Building on the East Baltimore campus. Conference room renovations were made possible by a generous gift from Claire and Dr. James Allen, an alumnus of the Johns Hopkins School of Medicine, internal medicine residency program, and ID fellowship, and served on the Hopkins ID faculty. Dr. Allen was a leader in immunology and infectious diseases, holding numerous leadership positions.



Johns Hopkins Center for AIDS Research Mpxv Symposium

On September 26, 2024, the Johns Hopkins Center for AIDS Research (CFAR) convened a symposium on mpxv, *What have we learned and how do we better prepare for the future?*

The event included presentations, research summaries, a panel discussion, and patient perspective. Experts from the ID Division were joined by visiting faculty and colleagues from the Bloomberg School of Public Health, Baltimore City Health Department, Maryland Department of Health, US Centers for Disease Control and Prevention, Queen Mary University of London, and 7-1-1 Alliance, an organization dedicated to provide global support for infectious diseases outbreak detection and control.

Watch the Mpxv Symposium recording: <http://bit.ly/3TWX9ta>

2024 David and Suzanne Thomas Lectureship in Infectious Diseases

The third-annual Thomas Lecture convened on November 14, 2024, and featured keynote speaker Jeanne Marrazzo, MD, MPH. Dr. Marrazzo was head of the National Institute of Allergy and Infectious Diseases (NIAID) from August 2023 until March 2025. Her keynote was entitled, *"One Year in at NIAID and Counting: Major Challenges and Opportunities in the Infectious Disease Field."*

Established in 2022 by the faculty of the Division of Infectious Diseases, the annual David and Suzanne Thomas Lecture honors former ID chief Dr. David Thomas and his late wife, Suzanne, for their commitment to and impact on patient health, and for fostering curiosity, passion, and advancement of global health and the field of infectious diseases.



FOCUS ON PHILANTHROPY

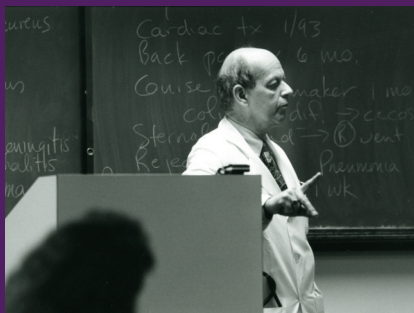
\$40 for 40 Years of HIV Care

For the past four decades, Johns Hopkins HIV services has championed a multi-disciplinary approach to address a broad range of patient needs, including specialists from infectious diseases, internal medicine, psychiatry, OB/GYN, dermatology, neurology, gastroenterology, nephrology, pediatrics, and more. We have cared for thousands of patients and conducted groundbreaking research that has saved countless lives.



To honor this legacy of care, we launched the *\$40 for 40 Years of HIV Care at Johns Hopkins* fundraising campaign. Thanks to generous donations from 74 individuals and two anonymous matching gifts, we raised more than \$46,300—shattering our original goal of \$10,000.

Funds raised through the \$40 for 40 Years campaign will provide direct support for people living with HIV and the providers who treat them, helping to bridge gaps and remove barriers to care. Services like medication copays, durable medical equipment, transportation to and from appointments, and staff training are not covered by insurance, yet are critical to ensuring positive outcomes for patients and improving staff wellness. Support for these services is needed now more than ever, as recent cuts in traditional funding pathways have significantly impacted our HIV/AIDS programs.



Securing Our Future: Dr. John Bartlett Fund for Young Investigators

The Dr. John Bartlett Fund for Young Investigators will provide seed funding to assist physician-scientists in building a strong research portfolio at the outset of their careers. Investigators can then leverage this support to craft larger proposals that attract successful funding from other granting agencies. Funding like this is transformative for early-stage investigators, but rare. As financial support for research continues a decades-long decline and traditional federal funding pathways have become increasingly unpredictable, the Bartlett Fund for Young Investigators will provide a critical bridge at a this pivotal moment. Investing in the growth of our fellows and early-career faculty is a divisional priority and one of the most powerful tools we have in our quest for a safer, healthier future for all.



Using Community-Led Research in the Fight Against Infectious Diseases

Zero TB in Kids (ZTB), led by **Dr. Kunchok Dorjee**, continues to set the bar for community-led infectious diseases care and prevention. ZTB's data-driven impact and sustainability provide a blueprint for other public health surveillance programs, particularly those that serve under-resourced communities or address diseases that are stigmatized. Since 2017, ZTB has screened more than 30,000 children and adults in congregate settings across South Asia and reduced TB cases 80% among Tibetan refugee children in India. <https://zerotb.jhmi.edu/>



Fisher Center Receives New Funding Commitment

Sherrilyn and Ken Fisher have committed to a new, five-year funding plan for the Fisher Center for Environmental Infectious Diseases that will sustain and expand the Center's Discovery Award program. Funding is awarded to innovative research projects that address environmental infectious diseases, antimicrobial resistance, and post-infectious disease conditions. This generous new commitment will allow for further expansion of the award program and additional faculty support. <https://bit.ly/3FuUxPo>

THANK YOU

Support for the Division of Infectious Diseases has never been more important than it is now. Despite our landmark achievements in patient care, research, and education, the landscape of funding for infectious diseases has been transformed. Critical work has been halted, disrupting years-long studies and threatening the health of millions of patients around the world who benefit from our discoveries.

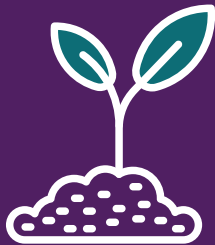
Philanthropy, especially in these turbulent times, ensures our continued clinical and research excellence, helping us face current challenges and prepare for those to come. We extend sincerest thanks to each of our individual donors and philanthropic partners for their generous support.



\$4,489,112
philanthropic giving



148
individual donors



74%
gifts under \$1000



\$200
median gift amount



Scan the QR to learn more
about charitable giving to the
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