WEILL CORNELL MEDICAL COLLEGE
NEW YORK-PRESBYTERIAN HOSPITAL

DEPARTMENT OF MEDICINE

# DIVISION OF

# INFECTIOUS DISEASES

# DIVISIONAL PROGRAMS & FACULTY AND FELLOW PROFILES

## 2013 – 2014

**Weill Cornell Medical College**
**1300 York Avenue, Box 125**
**New York, NY 10065**
**Telephone: 212-746-6320**
**Fax: 212-746-8675**

**http://www.cornellmedicine.com/clinical_practices_and_divisions/infectious_diseases/**

**TABLE OF CONTENTS**

## DIVISION OF INFECTIOUS DISEASES -- INTRODUCTION

The mission of the Division of Infectious Diseases (ID) at Weill Cornell Medical College and New York-Presbyterian Hospital (NYPH) is to conduct cutting-edge research; to provide outstanding clinical care; and to provide the highest quality education and training in infectious diseases. The Division has over 50 full-time, affiliated, voluntary and adjunct faculty members and includes basic, translational, clinical, and epidemiologic research programs; the ID clinical services at NYPH-Weill Cornell Medical Center; and the ID Fellowship Training Program.

The Division of ID facilities include over 12,000 square feet of research and administrative space. There are 10 research laboratories (7,500 sq. ft.) equipped for basic and translational molecular, microbiological, and immunologic studies and staff offices. Major laboratory research projects investigate antibiotic and antifungal drug development, bacterial pathogenesis, bioterrorism agents, influenza, leishmaniasis, malaria, and tuberculosis. Major clinical research projects investigate antimicrobial drug resistance, hepatitis, HIV/AIDS, hospital epidemiology/infection control, human papillomavirus, and transplantation ID. The Division's international network of clinical, research and training programs, includes our activities in Brazil, Haiti, India, and Tanzania, with full-time faculty and/or fellows at each site. Research interests include HIV/AIDS, HTLV-1, leprosy, malaria, leishmaniasis, schistosomiasis, and tuberculosis. Current funding for sponsored research and training in the Division of ID in 2013–2014 exceeds $8 million.

The clinical facilities of the division serve both outpatients and inpatients from the New York City area. ID Associates, located across the street from the medical school at 1305 York Avenue, includes the ID faculty and fellows outpatient practices, serving both immunocompetent and immunosuppressed patients, and the Travel Medicine service that is staffed by the faculty and provides travel advice and immunizations for 3,000–4,000 travelers annually. Inpatients are seen at New York Presbyterian Hospital, a large 867–bed tertiary care hospital, and the Hospital for Special Surgery, a 172–bed rheumatology and orthopedic specialty hospital, co-located on the Upper East Side of Manhattan. The HIV/AIDS Program provides care to over 2,500 HIV-infected persons, in addition to conducting translational and clinical research. The Center for Special Studies (the HIV primary care clinic, a New York State-designated AIDS Center) and the Cornell HIV Clinical Trials Unit (CCTU) outpatient facilities occupy two floors of NYPH as well as an off-site location in the Chelsea neighborhood of Manhattan (West 23rd Street and 6th Avenue). Other major clinical programs in the division are the Transplantation/Oncology ID Service, serving patients with stem cell transplants, solid organ transplants (kidney, pancreas, liver) and/or malignancies, and the Hospital Epidemiology/Infection Control Program.

The Fellowship Training Program in ID provides intensive clinical and research training for developing physician-scientists. Graduates of the program are highly qualified to conduct research, provide clinical care, and assume leadership roles in ID. Our fellows typically go on to academic faculty appointments and/or positions in state, federal, or international public health organizations. The ID fellowship training program emphasizes both inpatient and ambulatory clinical training during the first year. The second and third years emphasize basic, translational, clinical, or epidemiologic research at Weill-Cornell, Rockefeller University, Memorial Sloan-Kettering Cancer Center, and other affiliated programs. Fellow research training is supported by an NIH-sponsored T32 Training Grant. Additional training is available through Master's degree programs in clinical investigation or clinical epidemiology/health services research and other specialized training programs in preventive medicine and public health. In addition, our division offers clinical electives in ID and HIV/AIDS for residents and medical students and sponsors educational programs for providers at NYPH and in the community.

## DIVISION OF INFECTIOUS DISEASES FACULTY

**Roy M. Gulick, MD, MPH**
Professor of Medicine and Chief, Division of Infectious Diseases

| Faculty Name | Specialty | Faculty Name | Specialty |
|---|---|---|---|
| **Elizabeth L. Alexander, MD**<br>Assistant Professor of Medicine<br>Preceptor, ID Fellows Clinic | Staphylococcus aureus | **Linnie M. Golightly, MD**<br>Associate Professor of Clinical Medicine | Malaria; Enteric Pathogens |
| **Susan Ball, MD, MPH**<br>Associate Professor of Clinical Medicine | Clinical HIV | **Catherine C. Hart, MD**<br>Clinical Assistant Professor of Medicine | Clinical Infectious Diseases |
| **Barry Brause, MD**<br>Professor of Clinical Medicine | Bone and Joint Infections | **Barry J. Hartman, MD**<br>Clinical Professor of Medicine | Antibiotic Therapy |
| **Chris Busillo, MD**<br>Clinical Instructor in Medicine | Clinical Infectious Diseases | **David C. Helfgott, MD**<br>Clinical Assistant Professor of Medicine | Infections in Immunocompromised Hosts |
| **David Calfee, MD, MS**<br>Associate Professor of Medicine and Public Health<br>Chief Hospital Epidemiologist | Hospital Epidemiology/ Infection Control | **Michael Henry, MD**<br>Assistant Professor of Medicine | Bone/Joint and Rheumatologic-Associated Infections |
| **Jennifer A. Downs, MD,MSc [Tanzania]**<br>Assistant Professor of Medicine | HIV and Schistosomiasis | **Jonathan L. Jacobs, MD**<br>Professor of Clinical Medicine<br>Executive Director, Center for Special Studies | Clinical HIV |
| **Lewis M. Drusin, MD**<br>Professor of Clinical Medicine | Nosocomial Infections; STDs | **Samantha Jacobs, MD**<br>Instructor in Medicine | Transplant/ Oncology ID |
| **Kathryn Dupnik, MD**<br>Instructor in Medicine | Leprosy | **Stephen G. Jenkins, PhD**<br>Professor of Pathology and Laboratory Medicine<br>Professor of Pathology in Medicine | Clinical Microbiology |
| **Nell Eisenberg, MD**<br>Assistant Professor of Medicine | Hospital Medicine | **Warren D. Johnson, Jr., MD**<br>Professor of Medicine<br>Director, Center for Global Health | Global Health |
| **Daniel W. Fitzgerald, MD**<br>Associate Professor of Medicine<br>Co-Director, Center for Global Health | Global Health | **Sian Jones, MD**<br>Associate Professor of Clinical Medicine | Clinical HIV |
| **Marshall J. Glesby, MD, PhD**<br>Professor of Medicine and Public Health<br>Associate Chief, Division of Infectious Diseases | Clinical Trials of HIV, Hepatitis C and Influenza | **Jason Kendler, MD**<br>Clinical Associate Professor of Medicine | Clinical Infectious Diseases |

| | | | |
|---|---|---|---|
| **Laura A. Kirkman, MD**<br>Assistant Professor of Medicine, Microbiology and Immunology<br>ID Fellowship Program Associate Director | Malaria | **Jean W. Pape, MD [Haiti]**<br>Professor of Medicine<br>Director, GHESKIO Center | Tuberculosis; HIV |
| **Chester Lerner, MD**<br>Clinical Assistant Professor of Medicine | Clinical Infectious Diseases | **Robert N. Peck, MD [Tanzania]**<br>Assistant Professor of Medicine and Pediatrics | Medicine/ Pediatrics Education |
| **Kristen M. Marks, MD, MS**<br>Assistant Professor of Medicine<br>ID Fellowship Director | HIV/HCV Co-infection | **Kyu Y. Rhee, MD, PhD**<br>Associate Professor of Medicine | Antibiotic Development; Drug Resistance |
| **Jyoti Mathad, MD**<br>Instructor in Medicine | Tuberculosis | **Richard B. Roberts, MD**<br>Professor Emeritus of Medicine | Antimicrobial Resistance |
| **Usha Mathur-Wagh, MBBS, MPH**<br>Assistant Professor of Medicine | Clinical HIV | **Howard E. Rosenberg, MD**<br>Clinical Assistant Professor of Medicine | Clinical Infectious Diseases |
| **Samuel T. Merrick, MD**<br>Associate Professor of Clinical Medicine<br>Medical Director, Center for Special Studies | Clinical HIV | **Michael A. Rosenbluth, MD**<br>Clinical Assistant Professor of Medicine | Tropical Diseases |
| **Andy O. Miller, MD**<br>Assistant Professor of Clinical Medicine | Bone/Joint and Rheumatologic Disease-Associated Infections | **Mirella Salvatore, MD**<br>Assistant Professor of Medicine | Immunology; Influenza |
| **Anne Moscona, MD**<br>Professor of Pediatrics, Microbiology and Immunology<br>Chief, Division of Pediatric Infectious Diseases | Respiratory Viruses | **Michael J. Satlin, MD**<br>Instructor in Medicine | Transplant/Oncology ID |
| **Henry W. Murray, MD**<br>Professor of Medicine | HIV; Leishmaniasis | **Bruce R. Schackman, PhD**<br>Associate Professor of Public Health<br>Chief, Division of Health Policy | Health Policy and Cost-Effectiveness |
| **Thomas W. Nash, MD**<br>Clinical Assistant Professor of Medicine | Clinical Infectious Diseases | **Audrey Schuetz, MD, MPH**<br>Assistant Professor of Pathology and Laboratory Medicine<br>Assistant Professor of Medicine | Clinical Microbiology |
| **Oksana Ocheretina, PhD**<br>Assistant Professor of Microbiology in Medicine | Global Health | **Emily Shuman, MD**<br>Instructor in Medicine | Hospital Epidemiology/ Infection Control |
| **Anthony Ogedegbe, MD**<br>Assistant Professor of Medicine | Hospital Medicine | **Lawrence Siegel, MD**<br>Assistant Professor of Medicine | Clinical HIV; STDs |

| Faculty Name | Specialty | Faculty Name | Specialty |
|---|---|---|---|
| **Harjot K. Singh, MD, ScM**<br>Assistant Professor of Medicine | Clinical HIV | **Ole Vielemeyer, MD**<br>Assistant Professor of Medicine | Outpatient ID; Travel Medicine |
| **Duane M. Smith, MD**<br>Assistant Professor of Clinical Medicine<br>Associate Medical Director, Center for Special Studies | Clinical HIV | **Mary A. Vogler, MD**<br>Associate Professor of Clinical Medicine | Clinical HIV; HIV Clinical Trials; Pregnancy |
| **Paul T. Smith, MD**<br>Clinical Assistant Professor of Medicine | Clinical Infectious Diseases | **Thomas Walsh, MD**<br>Professor of Medicine, Microbiology and Immunology, Pediatrics<br>Director, Transplant/Oncology Infectious Diseases Service | Transplant ID; Fungal Pathogenesis |
| **Rosemary Soave, MD**<br>Associate Professor of Medicine | Transplant ID | **Timothy J. Wilkin, MD, MPH**<br>Associate Professor of Medicine | HIV Clinical Trials; HPV |
| **Charles A. Steinberg, MD**<br>Professor of Clinical Medicine | Clinical Infectious Diseases | **Cecilia Yoon, MD**<br>Assistant Professor of Medicine | Clinical HIV; Medical Education |
| **Carlos Vaamonde, MD, MSPH**<br>Assistant Professor of Clinical Medicine | Clinical HIV; Antibiotic Control | | |

**Top Row – Left to Right:** Kristen Marks, Andy Miller, Barry Brause, Lawrence Siegel, Timothy Wilkin, David Calfee, Mary Vogler **Center Row – Left to Right:** Carlos Vaamonde, Sian Jones, Warren Johnson, Charles Steinberg, Lewis Drusin, Laura Kirkman **Front Row – Left to Right:** Linnie Golightly, Roy (Trip) Gulick, Marshall Glesby, Elizabeth Alexander, Cecilia Yoon, Usha Mathur-Wagh, Barry Hartman, Harjot Singh

## ADJUNCT FACULTY

| Faculty Name | Specialty | Faculty Name | Specialty |
|---|---|---|---|
| **Edgar M. Carvalho, MD, PhD [Universidade Federal da Bahia, Brazil]** Adjunct Professor of Medicine | Immunology; Leishmaniasis | **Susan C. Nicholson, MD** Assistant Professor of Medicine (courtesy) | Skin and Soft Tissue Infections |
| **Marina Caskey, MD [Rockefeller U.]** Adjunct Assistant Professor of Medicine | Vaccines | **Mina Pastagia, MD [Rockefeller U.]** Adjunct Assistant Professor of Medicine | Staphylococcus aureus |
| **Donald Catino, MD [Dartmouth]** Lecturer in Medicine | Tropical Medicine | **Steven G. Reed, PhD [U. of Washington]** Adjunct Professor of Microbiology in Medicine | Antigen Discovery |
| **R. Gordon Douglas, Jr., MD** Emeritus Professor of Medicine | Vaccines | **Lee W. Riley, MD [U. California, Berkeley]** Adjunct Professor of Medicine | Molecular Epidemiology |
| **Thomas C. Jones, MD** Adjunct Professor of Medicine | Clinical Trials | **Mark Y. Stoeckle, MD** Clinical Associate Professor of Medicine | Viral Diseases; Antibiotics |
| **Jose R. Lapa e Silva, MD, PhD [ Universidade Federal do Rio de Janeiro, Brazil]** Adjunct Professor of Immunology in Medicine | TB Pathogenesis | | |

## DIVISIONAL STAFF

**Left to Right:** Roy (Trip) Gulick,MD, Donna Reyes, Mufida Rosiana, Marisol Valentin, Glenn Sturge

| Staff Member | Title | Email Address |
|---|---|---|
| Roy (Trip) Gulick, MD | Division Chief | rgulick@med.cornell.edu |
| Donna Reyes | Executive Assistant | dor2011@med.cornell.edu |
| Mufida Rosiana | Division Administrator | mrb2003@med.cornell.edu |
| Glenn Sturge | Administrative Manager | gls2003@med.cornell.edu |
| Marisol Valentin | Fellowship Coordinator, Operations Manager | mav2009@med.cornell.edu |

## INFECTIOUS DISEASES FELLOWSHIP TRAINING PROGRAM

**Mission**

The major goal of our program is the training of academic physician-scientists. We provide a wide variety of clinical training experiences in different venues including: the inpatient consult services of New York-Presbyterian (NYPH)/Weill Cornell (general and immunocompromised), the Hospital for Special Surgery (orthopedics, rheumatology), and Memorial Sloan Kettering Cancer Center; weekly outpatient clinic experiences encompassing general ID, HIV/AIDS, and travel medicine; clinical elective rotations; clinical microbiology laboratory and hospital epidemiology rotations; and a sexually transmitted disease rotation at the NYC Department of Health. All fellows develop a research project in collaboration with one or more faculty mentors from Weill-Cornell, Rockefeller University, or Memorial Sloan-Kettering Cancer Center. Fellows' research projects span basic, translational, clinical, and epidemiologic research in diverse areas of investigation. The majority of our fellowship graduates seek careers either in academia, government, or with private foundations.

**Clinical Rotations**

The New York- Presbyterian Hospital-Weill Cornell Medical Center is the primary institution of our fellowship training program. The medical center is located in a large clinical and research complex on the Upper East Side of Manhattan. New York-Presbyterian Hospital (NYPH) is the current name of what were formerly two distinct institutions: the Cornell-New York Hospital and the Columbia-Presbyterian Medical Center. Currently, New York-Presbyterian Hospital is the largest health care facility in the New York Metropolitan area and one of the largest and most prestigious in the world. The Greenberg Pavilion of the New York-Presbyterian Hospital (Cornell campus) is a one million square foot facility with 867 patient beds. Weill Cornell Medical College and Columbia College of Physicians and Surgeons remain independent institutions with separate infectious diseases fellowship programs.

The clinical rotations are concentrated in the first year of training. First-year fellows spend ~10 months on clinical rotations and second-year fellows spend ~2 months, with the majority of this time spent on the inpatient consultation service. Our active consultation service serves a broad range of complex medical and surgical patients. On average, the consult service manages 80-90 inpatient consults per month from both New York-Presbyterian Hospital as well as Hospital for Special Surgery (affiliated 172-bed hospital renowned for treatment of orthopedic and rheumatologic conditions). An infectious-disease trained specialty PharmD participates actively on the consult service as do Cornell's Internal Medicine residents and 4$^{th}$ year medical students. In addition to NYPH general ID consult service, fellows rotate on our immunocompromised host and transplant services (bone marrow and solid organ transplantation including kidney, liver, and pancreas). They also spend one month on the Memorial Sloan-Kettering Cancer Center (MSKCC) inpatient consultation service (MSKCC, located across the street, is a hospital specializing in oncologic evaluation and treatment). Fellows rotate through selected clinical electives including cardiovascular and neurologic infections, HIV/AIDS, orthopedic and rheumatologic infections, and pediatric infectious diseases. In addition, fellows also spend one month combined in NYPH's Clinical Microbiology Laboratory and in the Hospital Epidemiology/Infection Control Department. Fellows also have the option of an international elective at Weill Bugando Medical Center in Tanzania.

First- and second-year fellows participate in a weekly continuity outpatient clinic that alternates between care for patients with general infectious diseases and for patients with HIV/AIDS. Through the ambulatory care system, fellows build a panel of patients whom they will follow over the course of the fellowship, with guidance from a faculty preceptor. Fellows also participate actively in the care of patients seeking consultation prior to international travel.

A sample schedule of the first two fellowship years follows:

| Month | First Year | Second Year |
|---|---|---|
| July | NYPH Consult Service | Research |
| August | Epidemiology Rotation *<br>Microbiology Rotation * | NYPH Consult Service |
| September | NYPH Consult Service | STI Clinic Rotation<br>Research |
| October | NYPH Consult Service<br>Research | Research |
| November | Vacation<br>Clinical Elective #1 | Research |
| December | NYPH Consult Service | Research<br>Vacation |
| January | NYPH Consult Service | NYPH Consult Service |
| February | Leukemia Consult Service<br>Stem Cell Transplant Consult Service | Research |
| March | Vacation<br>Research | Research |
| April | Memorial Sloan Kettering Cancer Center Consult Service | Research<br>Vacation |
| May | Clinical Elective #2<br>Lymphoma & Solid Organ Transplant Consult Service | International Elective (Tanzania) |
| June | NYPH Consult Service<br>Clinical Elective #3 | Research |

* During the epidemiology and microbiology rotations, the fellows see patients in Travel Medicine once per week.

Clinical Elective offerings:

- Cardiovascular/Neurosurgical Infections – Barry Hartman, MD
- HIV Outpatient Interdisciplinary Care Team – Harjot Singh, MD
- Orthopedic/Rheumatologic Infections – Barry Brause, MD
- Pediatric Infectious Diseases – Christine Salvatore, MD

**Basic, Translational, Clinical, and Epidemiologic Research**

Research training occupies the majority of the second and third years of fellowship. Fellows select from a broad range of research opportunities in basic, translational, clinical or epidemiologic research. Fellows conduct their research in the Weill-Cornell Division of Infectious Diseases, other divisions within the Department of Medicine (e.g. Gastroenterology/Hepatology), other departments within the Medical College (e.g. Department of Microbiology and Immunology, Department of Public Health), Rockefeller University, or the Memorial-Sloan Kettering Cancer Center. Faculty mentorship from these diverse institutions allows a wide diversity of research opportunities.

The Division has an NIH-sponsored T32 training grant to support research training of developing physician-scientists that supports fellows during their research years. The objective is to train physician-scientists in biomedical research, with an emphasis on the pathogenesis of infectious diseases. Weill Cornell also has an NIH-funded Clinical and Translational Science Center (CTSC) with state-of-the-art facilities for conducting translational and clinical research.

Our fellowship graduates have generally received independent research awards following their fellowship, primarily from the NIH, including K08 (Mentored Clinical Scientist Development Award), K23 (Mentored Patient-Oriented Research Career Development Award), and KL2 Post-doctoral Scholars awards. Of fellows to complete our program in the past 15 years, 15 received K awards, 3 received clinical scholar awards, one received a merit award from the Veteran's Administration, 2 received industry fellowship awards, and 5 received foundation grants.

**Supplemental Training Programs**

Other training programs within the medical college are available to supplement fellowship training, depending on the fellow's specific interests.

**Clinical Research Training: Certificate and Masters Degree Programs**
http://www.med.cornell.edu/clinicalresearch/**–** The Graduate Program in Clinical and Translational Investigation at Weill Cornell Medical College trains patient-oriented researchers to conceive, design, and conduct independent clinical research in a well-structured cross-disciplinary team environment. The National Institutes of Health funds this program through their Clinical & Translational Science Award. The curriculum offers two tracks that are designed for rigorous training in clinical investigation. The first track covers a core curriculum providing the basic skills of clinical investigation, and leads to a **Certificate of Clinical Investigation**. It includes training in the development of research hypotheses and methods of hypothesis testing; grant writing and manuscript preparation; data collection, construction of databases and data management systems; computer programs for data analysis; statistical analysis and the appropriate use of various statistical techniques in clinical research; basic epidemiologic principles in clinical research; design and conduct of meta-analyses and clinical trials; ethics and human subjects protection in the conduct of patient-oriented research; regulatory requirements of clinical research; preparing protocols for the Institutional Review Board and other agencies; grants management and intellectual property; and general and specific state-of-the-art research tools and techniques. The second track leading to a **Masters Degree in Clinical Investigation**, includes the core curriculum; additional electives in the trainee's area of interest; and a clinical research project mentored in its design and implementation by a clinical investigator. Members of the Infectious Disease Division (Drs. Glesby, Gulick, Wilkin) serve as faculty for this training program. Many of our fellows and junior faculty members have used this program to supplement their training as clinical researchers. A K30 training grant covers tuition for those accepted to the program.

**Preventive Medicine Training**
http://www.med.cornell.edu/public.health/res_gen.html**–** Weill Cornell's Department of Public Health offers a General Preventive Medicine Training Program, for which ID fellows are eligible after their initial year of clinical ID training. As part of the General Preventive Medicine Program, fellows enroll in the Masters Degree Program in Clinical Investigation. At the end of the program, they are eligible for certification by the American Board of Preventive Medicine. The program emphasizes epidemiology, biostatistics, clinical and preventive medicine, medical care organization, medical sociology, and health economics and education. Fellows participate in Cornell's Public Health seminars. Fellows also undertake an original research project. Each fellow will have an individual program designed to meet

his/her specific professional goals. Fellows have used this program to supplement their training in hospital epidemiology and public health.

**Graduate Program in Clinical Epidemiology & Health Services**
http://weill.cornell.edu/gradschool/program/ce_courses.html– The Graduate Program in Clinical Epidemiology & Health Services offers an 8-week intensive summer program or a 2-4 year Master of Science (MS) degree in Clinical Epidemiology & Health Services Research. The program is designed for fellows who wish to plan, implement and analyze quantitative and qualitative research studies, using appropriate research designs. The core of the curriculum includes research methodology, biostatistical techniques, data management, decision analysis, health economics and program evaluation. Graduates of the Masters program will be prepared to pursue academic careers in a variety of settings where data is required to answer complex questions. The emphasis is on training clinician researchers to teach research methods, conduct methodologically rigorous and scientifically sound studies, evaluate programs and perform cost-effectiveness and cost-benefit studies in a variety of populations. Many of our fellows doing international research have supplemented their clinical research training by participating in this program's Global Health track. Members of the Infectious Diseases Division (Drs. Glesby, Fitzgerald) serve as faculty for this training program.

**Divisional Conferences**

A variety of conferences are offered to support education and training of Infectious Diseases Fellows. These include:

- Advanced Topics in Infectious Diseases (weekly lectures from WCMC and MSKCC faculty or outside speakers on ID-related topics)
- Careers in Infectious Diseases Seminar (monthly presentation and discussion)
- Clinical Case Conference (weekly discussion of cases led by the fellows)
- Department of Microbiology and Immunology Research-In-Progress talks (monthly)
- Divisional Journal Club and Research Conference
- Fellow Core Topics in Infectious Diseases (weekly basic lectures during the summer and every other week during the year)
- Fellow Journal Club (every other week)
- HIV Conference (weekly alternating with journal club, lectures, and discussion of ongoing clinical trials)
- ID Fellow Research-In-Progress talks (monthly)
- Intercity Infectious Disease Rounds (weekly rotating with other institutions in the New York area)
- Medical Grand Rounds (weekly)
- Microbiology Laboratory Plate Rounds (weekly review of interesting specimens, often from the clinical service)

## CURRENT INFECTIOUS DISEASES FELLOWS (2013–2014)

| Name | Year of Fellowship | Medical School | Internal Medicine Residency | Research Project |
|---|---|---|---|---|
| Selin Somersan, MD<br>ses9022@med.cornell.edu | 5 | Harvard | Weill Cornell | Pathogenesis of M. tuberculosis |
| Bisrat Abraham, MD, MPH<br>bka9002@med.cornell.edu | 3 | Emory | Johns Hopkins | HIV epidemiology |
| Leah Burke, MD<br>lab9079@med.cornell.edu | 3 | Boston University | Yale – New Haven Hospital | HIV / Hepatitis C coinfection;<br>HIV medication adherence |
| Matthew McCarthy, MD<br>mwm9004@med.cornell.edu | 3 | Harvard | Columbia | Pathogenesis of Candida |
| Ashita Batavia, MD<br>asb2009@nyp.org | 2 | Weill Cornell | Yale/Weill Cornell | Immune activation in HIV infection |
| Daniel Eiras, MD, MPH<br>dpe9001@nyp.org | 2 | Mt. Sinai | NYU | Hospital epidemiology;<br>Antibiotic resistance |
| Flonza Isa, MD<br>fli9001@nyp.org | 2 | NYU | Weill Cornell | Urine biomarkers for M. tuberculosis |
| Benjamin Eckhardt, MD<br>bje9002@nyp.org | 1 | Albert Einstein | NYU | TBA |

| Name | Year of Fellowship | Medical School | Internal Medicine Residency | Research Project |
|---|---|---|---|---|
| John Humphrey, MD<br>jmh9013@nyp.org | 1 | Ben-Gurion University of the Negev | Tulane | TBA |
| Kohta Saito, MD, MPH<br>kos9010@nyp.org | 1 | Harvard | Mount Sinai | TBA |

**Top Row – Left to Right:** Matthew McCarthy, Kohta Saito, Daniel Eiras, Benjamin Eckhardt, John Humphrey **Front Row – Left to Right:** Leah Burke, Ashita Batavia, Bisrat Abraham Flonza Isa and Selin Somersan (not pictured)

## FORMER INFECTIOUS DISEASES FELLOWS (LAST 10 YEARS)

| Name | Medical School | Internal Medicine Residency | Period of Fellowship Training and Research Topic | Current Position / K Awards |
|---|---|---|---|---|
| Samantha Jacobs, MD | University of Pennsylvania | Mount Sinai | 2010 – 2012<br>Rhinovirus in Transplant/Oncology Patients | Instructor in Medicine,<br>Weill Cornell Medical College |
| Daniel Shirley, MD | University of Kansas | University of Colorado Health Sciences Center | 2010 – 2012<br>COPD in HIV | Assistant Professor of Medicine,<br>University of Wisconsin School of Medicine |
| Matthew Simon, MD | Albert Einstein | Weill Cornell | 2010 – 2012<br>Cost effectiveness of ID; Screening Tests | Instructor in Medicine,<br>Weill Cornell Medical College |
| Kathryn Dupnik, MD | University of Virginia | Columbia | 2009 – 2011<br>Leprosy in Brazil | Instructor in Medicine,<br>Weill Cornell Medical College<br>Burroughs Wellcome Career Award |
| Jyoti Mathad, MD | Albany Medical College | University of Maryland | 2009 – 2011<br>Latent TB and HIV in pregnancy in India | Instructor in Medicine,<br>Weill Cornell Medical College<br>KL-2 Post-doctoral Scholars Award |
| Meera Pahuja, MD | Virginia Commonwealth University | Weill Cornell | 2008 – 2011<br>HIV peripheral neuropathy in South Africa | Assistant Professor of Medicine,<br>Virginia Commonwealth University |
| Rituparna Pati, MD, MPH | University of Connecticut | Weill Cornell | 2008 – 2011<br>HIV prevention in adolescents | Director of Research of the Center for Comprehensive Care (HIV Program),<br>St. Luke's – Roosevelt Hospital<br>Instructor in Medicine,<br>Columbia University |
| Michael Satlin, MD | University of Virginia | Weill Cornell | 2008 – 2011<br>Multi-drug resistant gram-negative bacteria | Instructor in Medicine,<br>Weill Cornell Medical College<br>KL-2 Post-doctoral Scholars Award |

| Name | Medical School | Internal Medicine Residency | Period of Fellowship Training and Research Topic | Current Position / K Awards |
|---|---|---|---|---|
| Elizabeth Alexander, MD | Weill Cornell | Mt. Sinai | 2007 – 2010<br>Staph. Aureus drug resistance | Assistant Professor of Medicine,<br>Weill Cornell Medical College<br>KL-2 Post-doctoral Scholars Award |
| Jennifer Downs, MD | Weill Cornell | Columbia | 2007 – 2010<br>Female genital schistosomiasis | Assistant Professor of Medicine,<br>Weill Cornell Medical College<br>KL-2 Post-doctoral Scholars Award |
| Dahlene Fusco, MD, PhD | Albert Einstein | Massachusetts General Hospital | 2006 – 2010<br>Immune responses to influenza | Instructor in Medicine,<br>Harvard Medical School |
| Scott Weisenberg, MD | Tufts | University of California, San Diego | 2005 – 2008<br>Tuberculosis | Assistant Clinical Professor,<br>University of California, San Francisco<br>KL-2 Post-doctoral Scholars Award |
| Lawrence Siegel, MD | Brown | Beth Israel-Deaconess | 2005 – 2008<br>HPV infection; syphilis | Assistant Professor of Medicine,<br>Weill Cornell Medical College |
| Daniel Morgan, MD | University of Rochester | University of Rochester | 2004 – 2008<br>HTLV-1; MRSA | Assistant Professor of Epidemiology and Preventive Medicine,<br>University of Maryland<br>K08 Mentored Clinical Scientist Research Career Development Award |
| Laura Kirkman, MD | Albert Einstein | Yale-New Haven | 2004 – 2008<br>Malaria | Assistant Professor of Medicine,<br>Weill Cornell Medical College<br>K08 Mentored Clinical Scientist Research Career Development Award |
| Sandra Kesh, MD | Weill Cornell | Weill Cornell | 2004 – 2007<br>Antibiotic pharmacology | Clinical Instructor in Medicine,<br>Weill Cornell Medical College;<br>Westchester Medical Group |

| | | | | |
|---|---|---|---|---|
| Macarthur Charles, MD, PhD | Albert Einstein | Weill Cornell | 2003 – 2007<br>HIV drug resistance | Assistant Professor of Medicine,<br>Weill Cornell Medical College<br>K23 Mentored Patient-oriented Research Career Development Award |
| Marina Caskey, MD | Universidad Federal de Sergipe, Brazil | St. Luke's-Roosevelt | 2003 – 2006<br>HTLV-1 epidemiology | Assistant Professor in Clinical Investigation,<br>Rockefeller University<br>Adjunct Assistant Professor of Medicine,<br>Weill Cornell Medical College<br>K23 Mentored Patient-oriented Research Career Development Award |
| Matthias Frank, MD, PhD | Free University, Berlin, Germany | University of Washington | 2002 – 2006<br>Malaria antigens | Assistant Professor,<br>Hamburg Institute for Tropical Medicine, Germany |
| Kristen Marks, MS, MD | Columbia | Weill Cornell | 2002 – 2005<br>HIV/HCV hepatic steatosis | Assistant Professor,<br>Weill Cornell Medical College<br>K23 Mentored Patient-oriented Research Career Development Award |
| Kyu Rhee, MD, PhD | University of California, Irvine | Weill Cornell | 2001 – 2005<br>Tuberculosis | Associate Professor,<br>Weill Cornell Medical College<br>K08 Mentored Clinical Scientist Research Career Development Award |
| David Gardiner, MD | Jefferson | Jefferson | 2001 – 2004<br>HIV vaccines | Medical Director, Discovery Medicine,<br>Virology Research and Development,<br>Bristol-Myers Squibb<br>K08 Mentored Clinical Scientist Research Career Development Award |
| Gonzalo Bearman, MD, MPH | SUNY Buffalo | SUNY Buffalo | 2000 – 2003<br>Nosocomial infections | Professor & Associate<br>Hospital Epidemiologist,<br>Virginia Commonwealth University |

**PUBLICATIONS RELATED TO FELLOWSHIP ACTIVITIES BY CURRENT AND RECENT FELLOWS (LAST 10 YEARS)**


1. **Abraham BK,** Gulick RM. Next-generation oral preexposure prophylaxis: beyond tenofovir. Curr Opin HIV AIDS. 2012;7(6):600-06.

2. **Alexander EL, Morgan DJ, Kesh S, Weisenberg SA**, Zaleskas JM, Kaltsas A, Chevalier JM, Silberzweig J, Barrón Y, Mediavilla JR, Kreiswirth BN, **Rhee KY**. Prevalence, persistence, and microbiology of Staphylococcus aureus nasal carriage among hemodialysis outpatients at a major New York Hospital. Diagn Microbiol Infect Dis. 2011;70(1):37-44.

3. **Bearman G,** Fuentes L, Van Vorenkamp JL, Drusin LM. Vaccination without documentation: influenza immunization among medical residents at a tertiary-care medical center. Infect Control Hosp Epidemiol. 2003;24(8):626-28.

4. Brau N, Brau N, Fox RK, Xiao P, **Marks KM,** Naqvi Z, Taylor LE, Trikha A, Sherman M, Sulkowski MS, Dieterich DT, Rigsby MO, Wright TL, Hernandez MD, Jain MK, Khatri GK, Sterling RK, Bonacini M, Martyn CA, Aytaman A, Llovet JM, Brown ST, Bini EJ; North American Liver Cancer in HIV Study Group. Presentation and outcome of hepatocellular carcinoma in HIV-infected patients: a U.S.-Canadian multicenter study. J Hepatol. 2007;47(4):527-37.

5. Carvalho E, **Caskey MF,** Glesby MJ, **Morgan DJ,** Porto AF, Giozza SP, Muniz AL, Orge GO, Travassos MJ, Barrón Y. Clinical manifestations associated with HTV-1 infection: a cross-sectional study. AIDS Res Hum Retroviruses. 2006;23:365-71.

6. Chookajorn T, Dzikowski R, **Frank M,** Li F, Jiwani AZ, Hartl DL, Deitsch KW. Epigenetic memory at malaria virulence genes. Proc Natl Acad Sci USA. 2007;104(3):899-02.

7. Djimde AA, **Kirkman L,** Kassambara L, Diallo M, Plowe CV, Wellems TE, Doumbo OK. [In vitro cultivation of fields isolates of Plasmodium falciparum in Mali]. Bull Soc Pathol Exot. 2007;100(1):3-5.

8. **Downs JA,** Kalluvya SE, Kataraihya JB, Jackson K, Jaka H, Kabangila R, Peck RN. Cranial and epidural abscesses presenting as scalp swellings in a 16-year-old boy: a case report. Tanzanian Medical Journal. 2009; 24:34-35.

9. **Downs JA,** Mguta C, Kaatano GM, Mitchell KB, Bang H, Simplice H, Kalluvya SE, Changalucha JM, Johnson WD Jr., Fitzgerald DW. Urogenital schistosomiasis in women of reproductive age in Tanzania's Lake Victoria region. Am J Trop Med Hyg. 2011;84:364-69.

10. **Dupnik KM**, Martins MMC, Souza MTS, Jeronimo SMB, Nobre ML. Nodular secondary syphilis simulating lepromatous leprosy. Lepr Rev. 2012;83:389-93.

11. **Dupnik KM,** Nascimento EL, Rodrigues-Neto JF, Keesen T, Fernandes MZ, Duarte I, and SMB Jeronimo. New challenges in the epidemiology and treatment of visceral leishmaniasis in periurban areas. Drug Dev Res. 2011;72:451-62.

12. Dzikowski R, **Frank M,** Deitsch K. Mutually exclusive expression of virulence genes by malaria parasites is regulated independently of antigen production. PloS Pathog. 2006;2(3):e22.

**13.** Fierer DS, Dieterich DT, Fiel MI, Branch AD, **Marks KM, Fusco DN,** Hsu R, Smith DM, Fierer J. Rapid progression to decompensated cirrhosis, liver transplant, and death in HIV-infected men after primary hepatitis C virus infection. Clin Infect Dis. 2013;56(7):1038-43.

**14.** Fontana J, **Alexander EL,** Salvatore M. Translational research in infectious disease: current paradigms and challenges ahead. Transl Res. 2012;159(6):430-53.

**15.** **Frank M,** Deitsch K. Activation, silencing and mutually exclusive expression within the var gene family of Plasmodium falciparum. Int J Parasitol. 2006;36(9):975-85.

**16.** **Frank M,** Dzikowski R, Amulic B, Deitsch K. Variable switching rates of malaria virulence genes are associated with chromosomal position. Mol Microbiol. 2007;64(6):1486-98.

**17.** **Frank M,** Dzikowski R, Costantini D, Amulic B, Berdougo E, Deitsch K. Strict pairing of var promoters and introns is required for var gene silencing in the malaria parasite Plasmodium falciparum. J Biol Chem. 2006;281(15):9942-52.

**18.** **Frank M, Kirkman L,** Costantini D, Sanyal S, Lavazec C, Templeton TJ, Deitsch KW. Frequent recombination events generate diversity within the multi-copy variant antigen gene families of Plasmodium falciparum. Int J Parasitol. 2008;38(10):1099-09.

**19.** **Fusco DN, Downs JA, Satlin MJ, Pahuja M,** Ramos L, Barie PS, Fleckenstein L, Murray HW. Non-oral treatment with ivermectin for disseminated strongyloidiasis. Am J Trop Med Hyg. 2010;83(4):879-83.

**20.** **Fusco D,** Liu X, Savage C, Taur Y, Xiao W, Kennelly E, Yuan J, Cassileth B, Salvatore M, Papanicolaou GA. Echinacea purpurea aerial extract alters course of influenza infection in mice. Vaccine. 2010;28(23):3956-62.

**21.** **Fusco DN, Alexander EL, Weisenberg SA,** Mediavilla JR, Kreiswirth BN, Schuetz AN, Jenkins SG, Rhee KY. Clinical failure of vancomycin in a dyalisis patient with methicillin-susceptible vancomycin-heteroresistant S. aureus. Diagn Microbiol Infect Dis. 2009;65(2):180-83.

**22.** **Gardiner DF, Rhee KY.** An unusual cause of ST segment elevation. Brugada syndrome. Clin Infect Dis. 2006;42(6):826-27,885-86.

**23.** Gold B, Pingle M, Brickner SJ, Shah N, Roberts J, Rundell M, Bracken WC, Warrier T, **Somersan S**, Venugopal A, Darby C, Jiang X, Warren JD, Fernandez J, Ouerfelli O, Nuermberger EL, Cunningham-Bussel A, Rath P, Chidawanyika T, Deng H, Realubit R, Glickman JF, Nathan CF. Nonsteroidal anti-inflammatory drug sensitizes Mycobacterium tuberculosis to endogenous and exogenous antimicrobials. Proc Natl Acad Sci USA. 2012 ;109(40):1604-11.

**24.** Heinberg A, Siu E, Stern C, Lawrence EA, Ferdig MT, **Deitsch** KW, **Kirkman** LA. Direct evidence for the adaptive role of copy number variation on antifolate susceptibility in Plasmodium falciparum. Mol Microbiol. 2013;88(4):702-12.

**25.** Huang Y, Chen A, Li X, Chen Z, Zhang W, Song Y, Gurner D, **Gardiner D,** Basu S, Ho DD, Tsuji M. Enhancement of HIV DNA vaccine immunogenicity by the NKT cell ligand, alpha-galactosylceramide. Vaccine. 2008;26(15):1807-16.

**26.** **Jacobs S,** George A, Papanicolaou GA, Lacouture ME, Tan BH, Jakubowski AA, Kaltsas A. Disseminated Mycobacterium marinum infection in a hematopoietic stem cell transplant recipient. Transpl Infect Dis. 2012;14:410-14.

**27.** Kaltsas A, **Simon M,** Unruh LH, Son C, Wroblewski D, Musser KA, Sepkowitz K, Babday NE, Kamboj M. Clinical and laboratory characteristics of Clostridium difficile infection in patients with discordant diagnostic test results. J Clin Microbiol. 2012;50:1303-07.

**28.** **Kirkman LA, Deitsch KW.** Antigenic variation and the generation of diversity in malaria parasites. Curr Opin Microbiol. 2012;15(4)456-62.

**29.** Kreisel D, Arora N, **Weisenberg SA**, Saqi A, Krupnick AS, Demetriades AM, Iakovou C, Conetta R, Lee PC. Tuberculosis presenting as an endobronchial mass. J Thorac Cardiovasc Surg. 2007;133(2):582-84.

**30.** Lazzarini LC, Spindola SM, Bang H, Gibson AL, **Weisenberg S**, da Silva Carvalho W, Augusto CJ, Huard RC, Kritski AL, Ho JL. **RD$^{Rio}$** Mycobacterium tuberculosis infection is associated with a higher frequency of cavitary pulmonary disease. J Clin Microbiol. 2008;46(7):2175-83.

**31.** **Marks KM,** Petrovic LM, Talal AH, Murray MP, Gulick RM, Glesby MJ. Histological findings and clinical characteristics associated with hepatic steatosis in patients coinfected with HIV and hepatitis C virus. J Infect Dis. 2005;192(11):1943-49.

**32.** **Mathad JS**, Gupta A. Tuberculosis in pregnant and postpartum women: epidemiology, management, and research gaps. Clin Infect Dis. 2012;55(11):1532-49.

**33.** Mbabazi PS, Andan O, Fitzgerald DW, Chitsulo L, Engels D, **Downs JA.** Examining the relationship between urogenital schistosomiasis and HIV infection. PLoS Negl Trop Dis. 2011;5(12):e1396.

**34.** Moura MLN, **Dupnik KM**, Sampaio GAA, Nóbrega PF, Jeronimo AK, do Nascimento-Filho JM, Miranda Dantas RL, Queiroz JW, Barbosa JD, Dias G, Jeronimo SM, Souza MC, Nobre ML. Active surveillance of Hansen's disease (leprosy): Importance for case finding among extra-domiciliary contacts. PLoS Negl Trop Dis. 2013;7(3):e2093.

**35.** **Morgan DJ, Caskey MF,** Abbehusen C, Oliveira-Filho J, Araujo C, Porto AF, Santos SB, Orge GO, Joia MJ, Muniz AL, Siqueira I, Glesby MJ, Carvalho E. Brain magnetic resonance imaging white matter lesions are frequent in HTLV-I carriers and do not discriminate from HAM/TSP. AIDS Res Hum Retroviruses. 2007;23(12):1499-04.

**36.** **Morgan DJ, Weisenberg SA,** Augenbraun MH, Calfee DP, Currie BP, Furuya EY, Holzman R, Montecalvo MC, Phillips M, Polsky B, Sepkowitz KA. Multidrug-resistant Acinetobacter baumannii in New York City – 10 years into the epidemic. Infect Control Hosp Epidemiol. 2009;30(2):196-97.

**37.** Msango L, **Downs JA,** Kalluvya SE, Kidenya BR, Kabangila R, Johnson WD, Fitzgerald DW, Peck RN. Renal dysfunction among HIV-infected patients starting antiretroviral therapy in Mwanza, Tanzania. AIDS. 2011;25:1421-25.

**38.** **Pahuja M,** Grobler A, Glesby MJ, Karim F, Parker G, Gumede S, Naidoo K. Effects of a reduced dose of stavudine on the incidence and severity of peripheral neuropathy in HIV-infected adults in South Africa. Antivir Ther. 2012;17(4):737-43.

**39.** Poetker SK, Porto AF, Giozza SP, Muniz AL, **Caskey MF**, Carvalho EM, Glesby MJ. Clinical manifestations in individuals with recent diagnosis of HTLV type I infection. J Clin Virol. 2011;5(51):54-58.

**40.** **Rhee KY, Gardiner DF, Charles M.** Decreasing in vitro susceptibility of clinical Staphylococcus aureus isolates to vancomycin at the New York Hospital: quantitative testing redux. Clin Infect Dis. 2005;40(11):1705-06.

**41.** **Rhee KY,** Erdjument-Bromage H, Tempst P, Nathan CF. S-nitroso proteome of Mycobacterium tuberculosis: Enzymes of intermediary metabolism and antioxidant defense. Proc Natl Acad Sci USA. 2005;102(2):467-72.

**42.** **Rhee KY, Gardiner DF.** Clinical relevance of bacteriostatic versus bactericidal activity in the treatment of gram-positive bacterial infections. Clin Infect Dis. 2004 ;39(5):755-56.

**43.** **Rhee KY,** Soave R, Maltz C. Methicillin-resistant Staphylococcus aureus as a cause of antibiotic-associated diarrhea. J Clin Gastroenterol. 2004;38(3):299-00.

**44.** **Satlin MJ,** Calfee DP, Chen L, Fauntleroy KA, Wilson SJ, Jenkins SG, Feldman EJ, Roboz GJ, Shore TB, Helfgott DC, Soave R, Kreiswirth BN, Walsh TJ. Emergence of carbapenem-resistant Enterobacteriaceae as causes of bloodstream infections in patients with hematologic malignancies. Leukemia and Lymphoma. 2013;54(4):799-06.

**45.** **Satlin MJ,** Hoover DR, Glesby MJ. Glycemic control in HIV-infected patients with diabetes mellitus and rates of meeting american diabetes association management guidelines. AIDS Patient Care STDS. 2011;25(1):5-12.

**46.** **Satlin MJ,** Kubin CJ, Blumenthal JS, Cohen AB, Furuya EY, Wilson SJ, Jenkins SG, Calfee DP. Comparative effectiveness of aminoglycosides, polymyxin B, and tigecycline for clearance of carbapenem-resistant Klebsiella pneumoniae from the urine. Antimicrob Agents Chemoter. 2011;55(12):5893-99.

**47.** Severe P, Leger P, **Charles M,** Noel F, Bonhomme G, Bois G, George E, Kenel-Pierre S, Wright PF, Gulick R, Johnson WD Jr, Pape JW, Fitzgerald DW. Antiretroviral therapy in a thousand patients with AIDS in Haiti. N Engl J Med. 2005;353(22):2325-34.

**48.** **Shirley DK,** Kaner RJ, Glesby MJ. Effects of smoking on non-AIDS-related morbidity in HIV-infected patients. Clin Infect Dis. 2013;57(2):275-82.

**49.** **Siegel L,** Gulick RM. New antiretroviral agents. Current Infectious Disease Reports. 2007;9(3):243–51.

**50.** **Simon MS,** Weiss D, Gulick RM. Invasive meningococcal disease in men who have sex with men. Ann Intern Med. 2013;159(4):300-01.

**51.** **Weisenberg SA,** Butterfield TR, Fischer SM, Rhee KY. Suitability of silica hydride stationary phase, aqueous normal phase chromatography for untargeted metabolomic profiling of Enterococcus faecium and Staphylococcus aureus. J Sep Sci. 2009;32(13):2262-65.

**52.** **Weisenberg SA,** Gibson AL, Huard RC, Kurepina N, Bang H, Lazzarini LC, Chiu Y, Li J, Ahuja S, Driscoll J, Kreiswirth BN, Ho JL. Distinct clinical and epidemiological features of tuberculosis in New York City caused by the RD (Rio) Mycobacterium tuberculosis sublineage. Infect Genet Evol. 2012;12(4)664-70.

**53.** **Weisenberg SA, Morgan DJ,** Espinal-Witter R, Larone DH. Clinical outcomes of patients with Klebsiella pneumoniae carbapenemase-producing K. pneumoniae after treatment with imipenem or meropenem. Diagn Microbiol Infect Dis. 2009;64(2):233-35.

**54.** **Weisenberg SA,** Schuetz AN, **Alexander EL,** Eiss B, Behta M, Laiman L, Larone DH, Jenkins SG, Rhee KY. Endemic Acinetobacter baumanii in a New York hospital. PLoS ONE. 2012;6:e28566.

## ID DIVISION CURRENT RESEARCH AND TRAINING GRANTS
## 2013 – 2014

*Selected current research and training grants of the faculty and fellows in the Division of Infectious Diseases are listed below. There are opportunities for fellows to participate in these research projects, as well as with investigators at Rockefeller University or Memorial Sloan-Kettering Institute.*

**1.** A Combined Metabolic and Genomics Approach to Vancomycin Resistance in *Enterococcus faecium.* **E Alexander.** WMC CTSC Pilot Award. 2012-2013.

**2.** Enacting the Behavioral and Social Sciences in the Clinical Setting: Institution-Wide Teaching Effective Team-Based Patient Care. **S Ball.** NIH R25 subcontract. 2011-2015.

**3.** Phase III, Randomized, Double-Blind, Placebo-Controlled Study of the Efficacy, Safety, and Tolerability of a Single Infusion of MK-6072 (Human Monoclonal Antibody to C. *difficile* toxin B), and MK-3451A (Human Monoclonal Antibodies to C. *difficile* toxin A and B) in Patients Receiving Antibiotic Therapy for C. *difficile* Infection (MODIFY II). **DP Calfee.** Merck. 2012-2014.

**4.** Pathogenesis of Leishmaniasis: Host, Parasite and Vector – Tropical Medicine Research Center (TMRC). **E Carvalho; WD Johnson.** NIH P50 AI30639. 1991-2017.

**5.** DNA Repair and Recombination within the var Gene Family of P. falciparum. **K Deitsch,** L Kirkman. ROI AI099327. 2012-2017.

**6.** Female Urogenital Schistosomiasis and Mucosal Immunity. **J Downs.** Weill Cornell Department of Medicine Seed Grant for Innovative Research. 2012-2013.

**7.** Postdoctoral Fellowship in Tropical Infectious Diseases. **K Dupnik.** Burroughs Wellcome Fund/American Society of Tropical Medicine and Hygiene. 2012-2014.

**8.** Natural History and Pathogenesis of HPV/HIV Co-infection in Haiti. **DW Fitzgerald; WD Johnson.** NIH R01 CA142422. 2010-2013.

**9.** Global Health Research and Training in HIV and Tuberculosis. **DW Fitzgerald; WD Johnson.** NIH K24 AI098627-02. 2012-2016.

**10.** Consortium for Fogarty Global Health Scholars. **DW Fitzgerald; WD Johnson.** NIH/Fogarty R25 TW009337. 2012-2017.

**11.** NY/NJ AIDS Education and Training Center (AETC). **MJ Glesby.** Health Research Services Administration (HRSA), CU H4A HA00071. 2002-2015.

**12.** The Women's Interagency HIV Study (WIHS/subcontract). **MJ Glesby**. NIH UO1 AI35004. 2003-2017.

**13.** Influenza Clinical Trials Site. **MJ Glesby; RM Gulick, M Salvatore, TJ Wilkin.** NIH Division of Clinical Research. 2009-2014.

**14.** Doxycycline for COPD in HIV-Infected Patients. **MJ Glesby;** R Kaner. NIH R34 HL117352. 2012- 2014.

**15.** Endothelial Progenitor Cells and the Pathogenesis of Cerebral Malaria. **L Golightly.** NIH R01. 2011-2015.

**16.** Multiplexed Detection of Food and Waterborne Pathogens. **LM Golightly;** F Barany, **D Larone**. NIH U01 AI075470. 2007-2013.

**17.** HIV Adherence Bottle Interventional Trial (HABIT) Study. New York City Economic Development Corporation and AdhereTech. **RM Gulick.** 2013-2014.

**18.** Pathogenesis of Infectious Diseases Training. **RM Gulick; MJ Glesby.** NIH T32 AI07613. 1999-2014.

**19.** H1N1 Influenza - Observational Studies in Inpatients and Outpatients. **RM Gulick; MJ Glesby, M Salvatore, TJ Wilkin.** NIH-funded INSIGHT Clinical Trials Network. 2009-2014.

**20.** Clinical Trials for HIV Infection and HIV-Related Diseases. **RM Gulick; MJ Glesby, K Marks, M Vogler, TJ Wilkin**. Multiple Sources. 1999-2014.

**21.** Cornell HIV Clinical Trials Unit (AIDS Clinical Trials Group and HIV Prevention Trials Network). **RM Gulick; MJ Glesby, K Marks, M Vogler, TJ Wilkin.** NIH U01 AI69419. 2007-2013 (competitive renewal pending).

**22.** AIDS International Training and Research Program. **WD Johnson**. NIH D43 TW000018. 1988-2013.

**23.** Innovative Approaches for TB Control in Brazil. **WD Johnson**. NIH 5U2RTW006885. 2005-2015.

**24.** Clinical Scholar in Microbiology and Infectious Diseases. **L Kirkman.** William Randolph Hearst Foundation. 2012-2015.

**25.** Genetic Diversity in Virulence Genes of Plasmodium falciparum. **L Kirkman**. 1K08 AI076635. 2008-2013.

**26.** Drug Screening and In Vitro Cultivation of Babesia. **L Kirkman.** CTSC UL1 RR024996. 2013-2015.

**27.** Health Information Technology to Reduce Healthcare-Associated Infections: HIT-HAI. E Larson; **DP Calfee.** NIH R01. 2012-2016.

**28.** Diagnosis of Tuberculosis and Th1 Immune Response in Pregnant Women in TB Endemic Countries. **J Mathad.** WMC CTSC KL2 Global Health Fellowship. 2013-2015.

**29.** Immunochemotherapy in Visceral Leishmaniasis. **H Murray.** NIH R01 AI083219. 2010-2015.

**30.** Caribbean, Central South America Network: CCASAnet (IEDEA). **JW Pape.** NIH U01 AI06992303-04. 2007-2017.

**31.** Improvement of Integrated HIV Clinical-Based Services. **JW Pape.** U2G GH000545-02. 2011 – 2016.

**32.** Haiti AIDS Research Training: Models to Implementation (ICOHRTA). **JW Pape; DW Fitzgerald, WD Johnson.** U2R TW006896-13. 2004-2014.

**33.** International Clinical Trials Unit (Haiti CTU). **JW Pape; DW Fitzgerald, WD Johnson.** NIH U01 AI069421. 2006-2013.

**34.** Haiti AIDS Research Training: Models to Implementation (ICOHRTA). **JW Pape; DW Fitzgerald, WD Johnson.** U2R TW006896-13. 2004 – 2014.

**35.** AIDS International Training and Research Program (AITRP). **JW Pape; DW Fitzgerald, WD Johnson.** D43 TW000018-25. 1998 – 2014.

**36.** Haiti Research Training Program in the Prevention of AIDS Cervical Cancer. **JW Pape; DW Fitzgerald, WD Johnson.** D43 TW009606-01. 2013 – 2018.

**37.** Decoding the roles of critical genes of unknown function in M. tuberculosis. **KY Rhee.** NIH/NIAID. 2013-2018.

**38.** Enzymes of Intermediary Metabolism in *Mycobacterium tuberculosis*: Anti-Mycobacterial Targets of Nitric Oxide. **KY Rhee.** Burroughs Wellcome Career Award in the Biomedical Sciences. 2005-2013.

**39.** Metabolomics Approaches to TB Drug Development. **KY Rhee.** Bill and Melinda Gates Foundation TB Drug Accelerator. 2010-2015.

**40.** Tuberculosis Latency. **KY Rhee.** Bill and Melinda Gates Foundation, Grand Challenges. 2011-2014.

**41.** Urinary Biomarkers for TB Diagnosis. **KY Rhee.** Lura Cook Hull Trust. 2010-2013.

**42.** Targeted Vector Delivery for Rapid Protection from Infectious Diseases. **M Salvatore.** Feldstein Medical Foundation. 2012-2013.

**43.** Carbapenem-Resistant Enterics in Patients with Hematologic Malignancies. **M Satlin**. WMC CTSC KL2 Career Award. 2012-2013.

**44.** Clinical Trial of Anti-herpes Zoster Vaccine in Adult Autologous Haematopoietic Stem Cell Transplant (HCT) Recipients. **M Satlin; T Walsh, R Soave, D Helfgott, S, Jacobs, R Petraitiene.** GlaxoSmith-Kline. 2012-2013.

**45.** Development of Educational Initiatives for Families and Children with Infections Complicating Hematological Malignancies and Transplantation. **T Walsh.** Save Our Sick Kids Foundation. 2012-2013.

**46.** Development of New Methods for Diagnosis of Mucormycosis. **T Walsh.** Henry Schueler Foundation Scholar. 2012-2017.

**47.** Development of New Strategies for Treatment and Prevention of Life-Threatening Fungal and Bacterial Infections in Immunocompromised Children. **T Walsh.** Sharpe Family Foundation Scholar in Pediatric Infectious Diseases. 2013-2015.

**48.** Clinical Studies of Isavuconazole in Aspergillosis, Candidiasis, and Uncommon Fungal Pathogens. **T Walsh; D Helfgott, S Jacobs, M Satlin, R Soave.** Astellas. 2012-2013.

**49.** Deferasirox for Pulmonary Aspergillus in Rabbits. **T Walsh; R Petraitiene, V Petraitis.** Novartis. 2011-2013.

**50.** Pharmacokinetics and Pharmacodynamics of ASP 9726 (antifungal) vs. Caspofungin B in Rabbits. **T Walsh; R Petraitiene, V Petraitis.** Astellas. 2011-2013.

**51.** Pharmacokinetics and Pharmacodynamics of ASP 9726 (antifungal) vs. Voriconazole or Amphotericin B in Rabbits. **T Walsh; R Petraitiene, V Petraitis.** Astellas. 2011-2013.

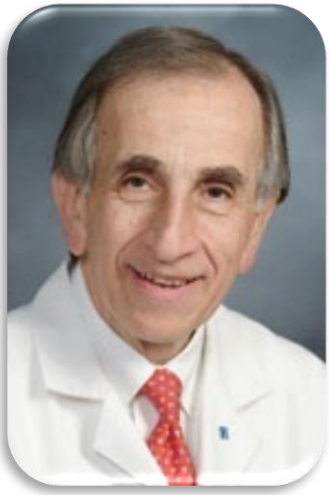
**52.** Pharmacokinetics/Pharmacodynamics of Drugs in Ventilator-Associated Pneumonia. **T Walsh; D Helfgott, S Jacobs, R Petraitiene, M Satlin, R Soave.** Broad Agency Agreement (BAA), NIAID. 2012-2016.

**53.** AIDS Malignancy Consortium (subcontract). **TJ Wilkin.** NIH U01 CA121947. 2010-2015.

**54.** EraMune: Clinical Trial on HIV Eradication (subcontract). **TJ Wilkin.** OrVACS/Northwestern University. 2010-2013.

ela2005@med.cornell.edu

**Elizabeth L. Alexander, MD** Assistant Professor of Medicine. Dr. Alexander received her M.D. from Weill Cornell Medical College where she was a B.H. Kean Fellow in International Medicine. She completed her residency training in internal medicine at the Mount Sinai Hospital and her infectious disease training at the New York-Presbyterian Hospital/Weill Cornell Medical Center, where she trained in the laboratory of Dr. Kyu Rhee. Dr. Alexander continues to work extensively with Dr. Rhee in the Division of Infectious Diseases as well as Dr. Alexander Tomasz at the Rockefeller University. Her research focuses on the use of the mass-spectrometry based technique of metabolomics to investigate the molecular mechanisms underlying increasing vancomycin resistance in *Staphylococcus aureus* and *Enterococcus faecalis.* Dr. Alexander is the recipient of an NIH/Weill Cornell Medical College Clinical and Translational Science Center KL2 Award (2010) and a Weill Cornell Medical College Clinical and Translational Science Center Pilot Award.



brauseb@hss.edu

**Barry Brause, MD** Professor of Clinical Medicine and Director of Infectious Diseases at Hospital for Special Surgery. Dr. Brause's clinical research has focused on musculoskeletal infections and particularly on infections associated with indwelling foreign materials and prostheses. Dr. Brause has taken part in major national meetings and workshops as an invited participant including the National Institute of Arthritis and Musculoskeletal Disease, the American Dental Association, Council on Dental Therapeutics and the Infectious Diseases Society of America/ Interscience Conference on Antimicrobial Agents and Chemotherapy. He has authored chapters on bone and joint infections in the last five editions of Principles and Practice of Infectious Diseases and on "Osteomyelitis" in three recent editions of Cecil-Textbook of Medicine. Dr. Brause is a Fellow of the Infectious Diseases Society of America (FIDSA), the American College of Physicians (FACP) and a member of the Society for Healthcare Epidemiology of America (SHEA).

dpc9003@med.cornell.edu

**David Calfee, MD, MS** Associate Professor of Medicine and Public Health and Chief Hospital Epidemiologist. Dr. Calfee trained in internal medicine and infectious diseases at the University of Virginia, and received his MS in health evaluation sciences (epidemiology) at the University of Virginia. His research and clinical interests focus on the epidemiology and prevention of healthcare-associated infections, including the clinical and molecular epidemiology and prevention of transmission of multidrug-resistant bacteria. Recent clinical studies include a multicenter, cluster-randomized study of the benefits of universal gown and gloving for the prevention of healthcare-associated infections and transmission of multidrug-resistant organisms. He is also the site principal investigator for a study of the use of monoclonal antibodies against C. *difficile* toxins A and B for the prevention of recurrence of C. *difficile* infection.

**Jennifer A. Downs, MD, MSc** Assistant Professor of Medicine. Dr. Downs received her M.D. from Weill-Cornell Medical College. She completed her Internal Medicine residency training at Columbia University College of Physicians and Surgeons, followed by her Infectious Diseases fellowship at New York-Presbyterian Hospital-Weill Cornell Medical College. Her research focuses on urogenital schistosomiasis in women of reproductive age in Tanzania, where she has worked since 2007. Her research in Tanzania has been recognized by the Infectious Diseases Society of America Fellowship Award in International Infectious Diseases (2009), an NIH/Weill Cornell Medical College Clinical and Translational Science Center KL2 Award (2010-2012), and the Cornell Department of Medicine Outstanding Junior Faculty Investigator Award (2011).

jna2002@med.cornell.edu

**Daniel W. Fitzgerald, MD** Associate Professor of Medicine and Co-Director, Center for Global Health. Dr. Fitzgerald trained in internal medicine and infectious diseases at the Massachusetts General Hospital. His areas of interest include HIV/AIDS and tuberculosis clinical and translational studies in Haiti and Tanzania, studies on HIV induced chronic inflammation and HPV related cervical cancer in Haiti, studies of new diagnostic tests for tuberculosis, and studies on HIV mucosal immunity and schistosomiasis in Tanzania. Other interests include improving informed consent and empirical studies to inform ethical guidelines for the conduct of clinical research in resource-poor countries. The training of clinician scientists in the United States, Haiti, and Tanzania is an integral part of his research activity. He is Chair of the Cornell International Education Committee, which oversees international medical student electives.

dfitzgerald@gheskio.org

**Marshall J. Glesby, MD, PhD** Professor of Medicine and Public Health and Associate Chief, Division of Infectious Diseases. Dr. Glesby trained in internal medicine and in infectious diseases at Johns Hopkins and also received a Ph.D. in clinical investigation from the Johns Hopkins School of Hygiene and Public Health. His research interests include metabolic and cardiopulmonary complications in HIV-infected patients, viral co-infections in HIV, and HTLV-I infection. Current projects include interventions for insulin resistance and increased visceral fat in HIV-infected patients, and clinical epidemiology of HTLV-I infection in Brazil. He has ongoing translational projects in these areas in collaboration with basic scientists. Dr. Glesby also directs the HIV/AIDS Clinical Trials Unit at Weill Cornell and serves on the Adult Translational Research and Multi-Institutional/ Disciplinary Advisory Committees of the Weill Cornell Clinical & Translational Science Center.

mag2005@med.cornell.edu

**Linnie M. Golightly, MD** Associate Professor of Clinical Medicine and Microbiology. Dr. Golightly trained in internal medicine at Harlem Hospital and in infectious diseases and molecular parasitology at Harvard University. Dr. Golightly's current research interests include: (1) Pathogenesis of cerebral malaria as mediated by microvascular damage/repair. These studies are in collaboration with Dr. Ben Gyan at the NMIMR in Ghana. (2) Development of a cell phone-imaging probe for diagnosing cerebral malaria. The project is in collaboration with Dr. Alberto Bilenca of the Ben-Gurion University in Israel. (3) Development of a cholera prophylactic using commensal bacteria genetically engineered to express cholera quorum signals. This project is in collaboration with Dr. John March of Cornell University.

lgolight@med.cornell.edu

**Roy (Trip) M. Gulick, MD, MPH** Professor of Medicine and Chief of Division of Infectious Diseases. Dr. Gulick trained in internal medicine at Columbia and in infectious diseases at Harvard, and received his MPH in clinical trial design from the Harvard School of Public Health. His research focuses on clinical trials of antiretroviral therapies for treatment and prevention of HIV infection. Dr. Gulick currently serves as Principal Investigator of the Cornell Clinical Trials Unit of the NIH-sponsored AIDS Clinical Trials Group (ACTG). He also serves as co-chair of the U.S. Department of Health and Human Services Panel for Clinical Practices for Treatment of HIV Infection (DHHS Guidelines Panel), and is a Board Member of the International Antiviral Society-USA. Current projects include evaluating treatment strategies for both antiretroviral therapy-naïve and -experienced HIV-infected patients, and exploring antiretroviral therapy as a prevention strategy (PREP, pre-exposure prophylaxis).

rgulick@med.cornell.edu

**Barry J. Hartman, MD** Clinical Professor of Medicine. Dr. Hartman completed his medicine and infectious disease fellowship training at Cornell. Dr. Hartman did his basic research in the Alexander Tomasz laboratory of the Rockefeller University in New York City studying the mechanism for methicillin-resistance in the Staphylococcus aureus. His current focus is clinical care and education and his interests include antibiotics and antibiotic resistance, surgical infections and endocarditis. He has received several teaching awards from students and house staff. He has been the Formulary & Therapeutics Committee Chairman and Co-Chairman at the New York-Presbyterian Hospital for the past 20 years.

bjh2001@med.cornell.edu

**David C. Helfgott, MD** Assistant Clinical Professor of Medicine. Received his B.A. at the University of Pennsylvania and his M.D. at the Yale School of Medicine. Dr. Helfgott did his internship and residency at The New York Hospital and his Infectious Diseases fellowship at Cornell University Medical College. During his fellowship, Dr. Helfgott was involved in the study of inflammatory cytokines, and he continued this research as an Assistant Professor of Medicine at Cornell University Medical College for several years after completing his fellowship. Since 1994, Dr. Helfgott has been involved in direct patient care and teaching as an Assistant Attending Physician at The New York-Presbyterian Hospital and an Assistant Clinical Professor of Medicine at Weill Cornell Medical College. Among other clinical activities, Dr. Helfgott has been the infectious diseases consultant to the leukemia service at The New York Presbyterian Hospital/Weill Cornell Medical College and has been involved in clinical research studying antifungal therapy in patients with acute leukemia.

dah2006@med.cornell.edu

**Stephen G. Jenkins, PhD** Professor of Pathology and Laboratory Medicine. Professor of Pathology in Medicine. Dr. Jenkins received his Ph.D. in Medical Microbiology from the University of Vermont. He completed his postdoctoral residency in Clinical and Public Health Microbiology at the Mount Sinai Medical Center in Milwaukee, WI. Dr. Jenkins' current research focuses on the epidemiology and detection of antimicrobial resistance as well as the rapid diagnosis of Infectious Diseases and related antibiotic resistance mechanisms. He currently serves as a voting member of the Subcommittee on Antimicrobial Susceptibility Testing of the Clinical and Laboratory Standards Institute (CLSI) and is Chairman of the Methodology Working Group for that organization. In addition, he is a member of the Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) Program Committee.

stj2005@med.cornell.edu

**Warren D. Johnson, Jr., MD** The B.H. Kean Professor of Tropical Medicine, Director of the Center for Global Health, and the former Chief of the Division of International Medicine and Infectious Diseases. Dr. Johnson's career has been committed to research and training in infectious diseases, particularly in resource poor countries. His interests have included studies of AIDS, tuberculosis, schistosomiasis, and leishmaniasis. His research has received uninterrupted NIH and foundation support in Brazil (1969-2017), Haiti (1979-2015), including a NIH Merit Award (1990), and in Tanzania (2006-2015). He has chaired numerous NIH Research Committees and served on the NIH and the NIAID National Advisory Councils. He also served as a Director of the ABIM, Chair of the ABIM Infectious Diseases Subspecialty Board, and as a Councilor of the IDSA. He is a member of the Brazilian National Academy of Science. Dr. Johnson was honored by having the GHESKIO medical center in Haiti named for him.

wdjohnso@med.cornell.edu

**Laura A. Kirkman, MD** Assistant Professor of Medicine and ID Fellowship Associate Program Director. Dr. Kirkman received her M.D. from Albert Einstein College of Medicine with distinction in research. She completed her clinical training in internal medicine at Yale-New Haven Hospital and her infectious disease training at the New York-Presbyterian-Weill Cornell Medical Center followed by a postdoctoral fellowship in the laboratory of Dr. Kirk Deitsch in the Department of Microbiology and Immunology. Dr. Kirkman's current research focuses on the DNA repair mechanisms in the human malaria parasite, *Plasmodium falciparum,* and how DNA damage and repair in the parasite relates to diseases pathogenesis. Specifically examining the generation of genetic diversity in genes that encode the key proteins implicated in antigenic variation and the generation of drug resistance. A new area of research is the study of the closely related parasite Babesia, specifically looking at effectiveness of current drug regimens used for treatment. Dr. Kirkman is the recipient of an NIH K08 grant.

lak9015@med.cornell.edu

**Kristen M. Marks, MD, MS** Assistant Professor of Medicine and ID Fellowship Program Director. Dr. Marks received internal medicine and ID fellowship training at New York-Presbyterian Hospital, where she focused her clinical training and research on HIV and hepatitis virus infections and completed Weill Cornell's Masters Degree in Clinical Investigation. Her current research focuses on improving treatment outcomes in patients with HIV and hepatitis virus co-infections and includes studies of acute HCV as well as new treatment strategies for chronic HCV. She also serves as a co-investigator in the Cornell HIV/AIDS Clinical Trials Unit and Center for Study of Hepatitis C.

markskr@med.cornell.edu

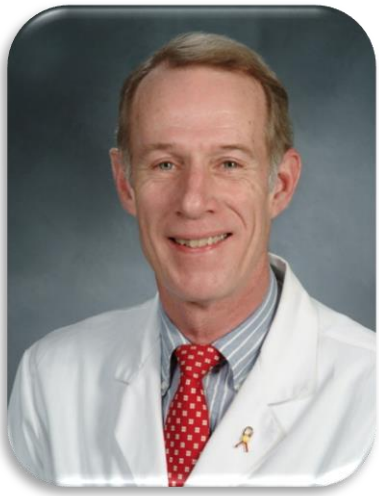
**Andy O. Miller, MD** Assistant Professor of Clinical Medicine and Assistant Attending Physician at the Hospital for Special Surgery. Dr. Miller received his B.Sc. at Yale College and his M.D. at Harvard Medical School. He then trained in Internal Medicine at Columbia-Presbyterian and in Infectious Diseases at NYU. From 2007 to 2010 he was an ID consultant and HIV primary care doctor at Bronx-Lebanon Hospital. Dr. Miller provides consultative ID services to patients at both HSS and NYH, and participates in divisional education of ID fellows. He is developing collaborative clinical research programs to study outcomes of patients with surgical bone/joint infections and patients receiving new biologic agents for rheumatologic disease.

milleran@hss.edu

**Anne Moscona, MD** Professor of Pediatrics and of Microbiology and Immunology, Vice Chair for Research of Pediatrics at Weill Cornell Medical Center, and Director of the Division of Pediatric Infectious Diseases. She received her undergraduate degree in Biochemistry and Molecular Biology from Harvard University in 1978, her M.D. from Columbia University College of Physicians and Surgeons in 1982 and completed her residency and fellowship training at the Mount Sinai School of Medicine. Renowned for her research in paramyxovirus biology, Dr. Moscona is active in training faculty, fellows, medical students and graduate students in pediatric infectious diseases and in virology research. Her infectious diseases and basic virology studies bridge clinical pediatrics and basic pathogenesis research, with a focus on translating fundamental virology to future therapeutics. Her honors include election to the American Society of Clinical Investigation (ASCI) and Fellowship in the American Academy of Microbiology.

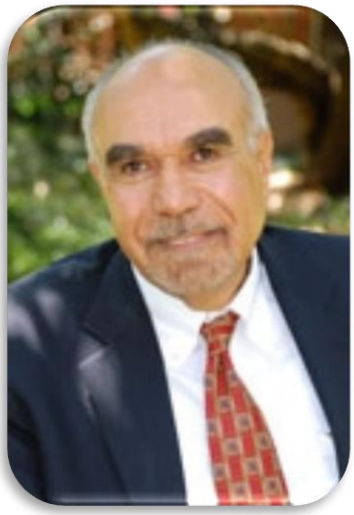
anm2047@med.cornell.edu

**Henry W. Murray, MD** The Arthur R. Ashe Professor of Medicine. He is an expert in macrophage activation, immunopathogenesis of infection caused by intracellular pathogens, in particular, *Leishmania*, and the chemo- and immunochemotherapy of leishmaniasis. Dr. Murray's long-term, NIH-supported research is currently focused on immunoregulation of the host response to antileishmanial chemotherapy in experimental visceral leishmaniasis (kala-azar). This work has in part formed the basis of experimental treatment trials in Indian patients at the internationally-recognized kala-azar clinical trials unit he co-directed in Bihar State, India. Dr. Murray received the Squibb Award (1989) from the Infectious Diseases Society of America for outstanding achievement in infectious diseases, and previously was Chief of the Division of Infectious Disease (1983-1995) and Associate Chairman of Medicine for Clinical Research (1995-2007). Dr. Murray is currently Director of the Arthur Ashe Endowment for the Defeat of AIDS, Editor of the travel medicine web site, Tropimed U.S., and co-chairs the Department of Medicine's Quality Assurance Committee.



hwmurray@med.cornell.edu

**Jean W. Pape, MD** Professor of Medicine. Dr. Pape, a graduate of Columbia (BS, 1971) and Weill Cornell (MD, 1975), completed his medicine and ID training at Cornell prior to returning to his native Haiti in 1980. In 1982, he founded GHESKIO, the first institution in the world dedicated to the fight against AIDS. He has made significant public health impacts contributing to a 50% decrease in the national infantile mortality and a similar decrease in the national HIV seroprevalence. He currently directs NIH-supported HIV vaccine and therapy trials in Haiti as well as the largest AIDS and tuberculosis treatment centers in the Caribbean. Dr. Pape is the recipient of numerous awards including: the French "Legion d'Honneur," election to the Institute of Medicine, the Carlos Slim Health Award for Life Achievement in Research, Gates Global Health and the Clinton Global Initiative awards. In 2010, he directed GHESKIO's response to the catastrophic earthquake and the major cholera epidemic including the successful introduction of the oral cholera vaccine.

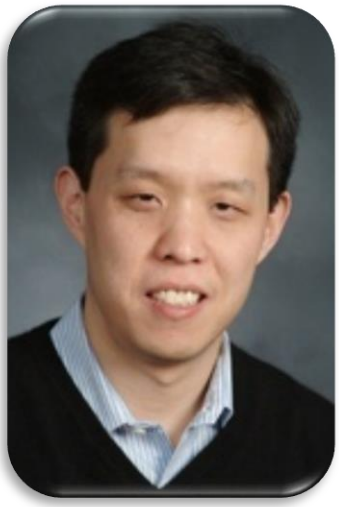


jwpape@gheskio.org

**Robert N. Peck, MD** Assistant Professor in Medicine and Pediatrics. Dr. Peck received his MD from Vanderbilt University, where he was Alpha Omega Alpha, as well as a Candy Robinson Scholar; he also received the Award of Excellence in Infectious Diseases. He completed a combined medicine/pediatrics residency program at Harvard/ Massachusetts General Hospital and the Children's Hospital in Boston. Dr. Peck currently supervises and teaches Weill Cornell medical students and NYPH residents and fellows rotating through Bugando University College of Health Sciences (BUCHS) and Bugando Medical Center (BMC). He also participates in the teaching and training of BUCHS medical students and interns, as well as the development of the BUCHS/BMC internal medicine and pediatrics residency programs. Dr. Peck is involved in collaborative clinical and operational research related to HIV and cardiovascular diseases. He is based full-time in Mwanza, Tanzania, at BUCHS and BMC.

rnp2002@med.cornell.edu

**Kyu Y. Rhee, MD, PhD** Associate Professor of Medicine and Microbiology and Immunology. He received his M.D. and Ph.D. from the University of California, Irvine through a medical scientist training program. He then received clinical training in internal medicine and infectious diseases at the New York Presbyterian-Weill Cornell Medical Center where he also completed a postdoctoral fellowship in the laboratory of Dr. Carl Nathan (Department of Microbiology and Immunology). Dr. Rhee's current research focuses on biochemical approaches to drug target discovery against *M. tuberculosis*, the causative agent of tuberculosis, using novel mass spectrometry-based tools. In more recent work, Dr. Rhee has extended his work to translational studies of multidrug resistant gram-positive and gram-negative pathogens. Work in his laboratory is currently funded by grants from the NIH, Bill & Melinda Gates Foundations, Burroughs Wellcome Foundation, and the Lura Cook Hull Trust.



kyr9001@med.cornell.edu

**Richard B. Roberts, MD** Professor of Medicine (Emeritus); Adjunct Professor, Rockefeller University. Dr. Roberts served as Chief of the Division of Infectious Disease, Vice Chairman of the Department of Medicine, and Associate Dean at the Medical College. He received multiple prior teaching awards from both medical students and the medical housestaff. Dr. Roberts served as Director of the Annual Infectious Diseases Seminars held in Salzburg, Austria for 14 years. In recognition of his service, Dr. Roberts held the American Austrian Foundation Humes Visiting Professorship at the University of Vienna, was inducted as an Honorary Member in Poland's Society of Epidemiology and Infectious Diseases (the first American to be honored), and was decorated with the Austrian Cross of Honor for Science and Art First Class by the Austrian government. His recent research interests include the molecular epidemiology of multidrug resistant gram-positive pathogens.

barg@mail.rockefeller.edu

**Mirella Salvatore, MD** Assistant Professor of Public Health in the Division of Community and Public Health Programs, and Assistant Professor of Medicine in the Division of Infectious Diseases at Weill Cornell Medical College. Dr. Salvatore completed her M.D. summa cum laude at the Catholic University Medical School in Rome, Italy. In the United States she completed Internal Medicine Residency training and Infectious Diseases fellowship at Mount Sinai School of Medicine. Since her postdoctoral fellowship in the laboratories of Adolfo Garcia-Sastre, also at Mount Sinai School of Medicine, she has focused her research interest on host responses to influenza virus infection and influenza vaccines. Her laboratory focuses on the use of integrase-defective lentiviral based influenza vaccines. She is also involved in translational studies aiming to evaluate the immune responses to influenza vaccination in opioid users.

mis2053@med.cornell.edu

**Michael J. Satlin, MD** Instructor in Medicine. Dr. Satlin received his M.D. from the University of Virginia School of Medicine. He completed residency training in internal medicine and fellowship training in infectious diseases at Weill Cornell Medical College. He is a member of the newly formed Transplantation-Oncology Infectious Diseases Program and provides infectious diseases supportive care to immunocompromised hosts. Dr. Satlin's research interests are in the epidemiology, diagnosis, and treatment of multidrug-resistant gram-negative bacterial infections in immunocompromised hosts. He is the recipient of a NIH/Weill Cornell Medical College Clinical and Translational Science Center KL2 Award (2012-2014).

mjs9012@med.cornell.edu

**Bruce R. Schackman, PhD** Associate Professor of Public Health and Chief of the Division of Health Policy in the Department of Public Health, Associate Professor of Public Health in Medicine in the Division of Infectious Diseases. He holds an MBA and a doctorate in health policy from Harvard University. Dr. Schackman's expertise is in economic evaluation of health interventions conducted alongside clinical trials and cohort studies, cost-effectiveness and comparative effectiveness simulation modeling, and implementation science research– particularly relating to treatment of infectious diseases and substance abuse. His current research includes economic evaluations of HIV and Hepatitis C screening and treatment and quality of life in opioid dependence treatment. He also collaborates with researchers at the GHESKIO Center in Port-au-Prince, Haiti and has taught in cost-effectiveness analysis at Weill Cornell and in Haiti. He is a member of the AIDS Clinical Trials Group and National Drug Abuse Clinical Trials Network.

brs2006@med.cornell.edu

**Audrey N. Schuetz, MD, MPH** Associate Director of the Clinical Microbiology Laboratory. Dr. Schuetz is Assistant Professor of Pathology and Laboratory Medicine and Internal Medicine. She obtained her M.D. from Emory and completed Anatomic and Clinical Pathology at Emory. She is board-certified through the American Board of Pathology in Anatomic and Clinical Pathology, and in Medical Microbiology. She is also boarded by the American Board of Medical Microbiology. Dr. Schuetz' interests in Microbiology primarily lie in mycology and in antimicrobial susceptibility testing of various organisms, including bacteria and fungi, as well as molecular typing of human pathogens. Having pursued an MPH in Global Health during medical school, she is also interested in public health-related projects and international affairs, such as laboratory-related inspections and surveys overseas. She was awarded a Yale/Johnson & Johnson grant used in aiding a clinic laboratory in Borneo, Indonesia with general laboratory set-up, including infectious disease serology and malaria and tuberculosis testing.

ans9112@med.cornell.edu

**Harjot K. Singh, MD, ScM** Assistant Professor of Medicine. Dr. Singh completed a combined internal medicine/pediatrics residency program at the University of Rochester, and her infectious disease training at Johns Hopkins Hospital. She currently works full-time at the Center for Special Studies (CSS) in HIV care. She coordinates the HIV elective for ID fellows and medical students. Dr. Singh's research interest is in quality improvement for HIV-infected patients. Ongoing projects include prevention of medication errors in patients being treated for HIV-associated lymphoma, evaluating use of tropism testing in a clinical setting, optimizing MMR vaccination, and comparing diagnostic tests for latent tuberculosis among HIV-infected patients in the CSS Cohort.

has9032@med.cornell.edu

**Rosemary Soave, MD** Associate Professor of Medicine. Dr. Soave completed training in Internal Medicine and Infectious Diseases including a year as Chief Medical Resident at MSKCC. She subsequently studied the enteric infections of HIV infected patients with a particular emphasis on the pathogenesis, detection, and treatment of Cryptosporidiosis, Cyclospora, and other coccidial diseases. She then expanded her clinical and research interests to include the epidemiology, diagnosis, treatment and immunopathogenesis of selected viral, fungal and bacterial infections in hematopoietic stem cell and solid organ transplant recipients. She provides expert comprehensive infectious diseases care to patients receiving autologous and allogeneic hematopoietic stem cell transplantation, as well as recipients of renal, pancreatic, and liver allografts. She is currently studying viral respiratory tract infections and the use of Fludase for Parainfluenza infections as well as the impact of HHV-6, and EBV reactivation in stem cell transplant recipients.

rsoave@med.cornell.edu

**Ole Vielemeyer, MD** Assistant Professor of Medicine and Director of ID Associates & Travel Medicine. Dr. Vielemeyer obtained his M.D. degree from the University of Leipzig Medical School in Germany. After postgraduate training in Germany, he moved to the U.S. to complete a residency in Internal Medicine at Rochester. He then obtained dual fellowship training in Infectious Diseases and Medical Microbiology at Yale. Prior to joining WCMC/NYP, he worked at Drexel College of Medicine in Philadelphia, seeing inpatient and outpatient general ID consults with fellows and running the infection control program at Hahnemann University Hospital. Dr. Vielemeyer currently performs general infectious diseases consultative services in the in- and outpatient settings, including travel health advice. Aside from his passion for travel medicine and teaching, his interests lie in developing clinical research projects aimed at improving the transition from inpatient to outpatient care of patients with chronic infections, especially those needing outpatient parenteral antibiotic therapy.

olv9006@med.cornell.edu

**Mary A. Vogler, MD** Associate Professor of Medicine. Dr. Vogler trained in internal medicine at the University of Connecticut School of Medicine and in infectious diseases at New York University School of Medicine where she served on the faculty prior to coming to Weill Cornell. Dr. Vogler serves as an HIV/AIDS primary care provider in the Center for Special Studies both for HIV-infected adults and adolescents. She also participates actively as an investigator in the NIH-funded Cornell HIV/AIDS Clinical Trials Unit (CCTU) and in the Fogarty international research programs. Her area of expertise is in the area of HIV-infected women, including pregnancy and mother-to-child transmission. She received the AIDS Clinical Trials Group (ACTG) Women's Health Investigator award in 2007.

mav9046@med.cornell.edu

**Thomas Walsh, MD** Professor of Medicine, Pediatrics, Microbiology & Immunology, and Director of the Transplantation-Oncology Infectious Diseases Program. Dr. Walsh completed ten post-doctoral years of laboratory investigation, clinical research and patient care leading to boards in Medicine, Infectious Diseases and Oncology and laboratory expertise in pharmacology, host defenses, and mycology. Following a distinguished career in the Pediatric Oncology Branch of the National Cancer Institute, Dr. Walsh joined Weill Cornell to direct the new Transplantation-Oncology I.D. Program. The mission of the Program is to provide leading edge multidisciplinary clinical care, translational research and training in diagnosis, treatment and prevention of life-threatening infections in immunocompromised patients with transplantation or cancer. Current investigations include antimicrobial pharmacology, immunopharmacology of innate host defense, and molecular diagnosis of emerging pathogens in immunocompromised patients.

thw2003@med.cornell.edu

**Timothy J. Wilkin, MD, MPH** Associate Professor of Medicine. Dr. Wilkin received his undergraduate degree in Mathematics at the University of Texas at Austin and attended medical school at Ohio State University. He went on to complete his residency in Internal Medicine at the University of Chicago Hospitals. He received fellowship training in Infectious Diseases at Columbia University and was supported by an Individual National Research Service Award from the National Institutes of Health. While at Columbia, he completed a Master's of Public Health with a concentration in Patient-Oriented Research. He was recruited to the faculty of Weill Cornell Medical College in 2002. He received a K23 Grant (Mentored Patient-Oriented Research Career Development Award) from the National Institutes of Health to study human papillomavirus infection and anal dysplasia in HIV-positive and HIV-negative men. He is an active clinical researcher in the AIDS Clinical Trials Group and the AIDS Malignancy Consortium. His current work focuses on HPV vaccination and the treatment of HPV-associated dysplasia in HIV-infected populations.

tiw2001@med.cornell.edu

***Research Training Faculty***

*ID Fellows have the opportunity to work in laboratories or programs within the Division of Infectious Diseases, other divisions in the Department of Medicine (e.g. GI, Immunology), other Departments at WCMC (Microbiology and Immunology, Pathology, Public Health), as well as Memorial Sloan-Kettering Cancer Institute, and the Rockefeller University, including the Aaron Diamond AIDS Research Center.*

## RESEARCH TRAINING FACULTY IN OTHER DEPARTMENTS & INSTITUTIONS

| Faculty Name | Research Specialty | Web Link |
|---|---|---|
| Francis Barany, PhD<br>Weill Cornell Dept. of Microbiology and Immunology | Coferons (new class of antibacterials); Detection of blood-borne pathogens | http://weill.cornell.edu/research/fbarany/ |
| Jean-Laurent Casanova, MD, PhD<br>Rockefeller University | Genetic determinants of infectious diseases | http://rockefeller.edu/research/faculty/labheads/Jean-LaurentCasanova/ |
| Ethel Cesarman, MD, PhD<br>Weill Cornell<br>Dept. of Pathology | KSHV-HHV8 and EBV pathogenesis/ HIV-related malignancies | http://weill.cornell.edu/research/ecesarman/ |
| Kirk W. Deitsch, PhD<br>Weill Cornell<br>Dept. of Microbiology and Immunology | Malaria gene expression and antigenic variation | http://weill.cornell.edu/research/kdeitsch/ |
| Sabine Ehrt, PhD<br>Weill Cornell<br>Dept. of Microbiology and Immunology | Molecular mechanisms of *M. tuberculosis* virulence | http://weill.cornell.edu/research/sehrt/ |
| Michael Glickman, MD<br>Memorial Sloan-Kettering Cancer Center | Immunology *M. tuberculosis* | http://www.mskcc.org/research/lab/michael-glickman |
| John Moore, PhD<br>Weill Cornell<br>Dept. of Microbiology and Immunology | HIV-1 entry and its inhibition by antibodies and drugs | http://weill.cornell.edu/research/researcher/jpmoore/ |
| Carl F. Nathan, MD<br>Weill Cornell<br>Dept. of Microbiology and Immunology | Host-pathogen relations and drug discovery for *M. tuberculosis* | http://www.med.cornell.edu/research/cnathan/ |
| Michel Nussenzweig, MD, PhD<br>Rockefeller University | Molecular aspects of adaptive and innate immune responses | http://www.rockefeller.edu/research/faculty/labheads/MichelNussenzweig/ |
| Eric Pamer, MD<br>Memorial Sloan-Kettering Cancer Center | Listeria; Microbiome | http://www.mskcc.org/research/lab/eric-pamer |
| Charles Rice, PhD<br>Rockefeller University | Hepatitis C virus | http://www.rockefeller.edu/labheads/rice/rice.php |
| Dirk Schnappinger, PhD<br>Weill Cornell<br>Dept. of Microbiology and Immunology | *M. tuberculosis* | http://weill.cornell.edu/research/dschnappinger/ |
| Alexander Tomasz, PhD<br>Rockefeller University | Structure and function of gram positive bacterial cell walls | http://www.rockefeller.edu/research/faculty/labheads/AlexanderTomasz/ |

## ANTIBIOTIC DEVELOPMENT:

**Biochemical Approaches to Drug Target Identification.** *Rhee*. A defining interest of our laboratory is the identification and validation of new antibiotic targets. Unlike the case for virtually every other field of medicine, infectious diseases is the only discipline to become progressively less and less effective over time. In large part, this is due to the fact that bacteria replicate far faster and more abundantly than the hosts they infect. As a result, resistance has become the inevitable fate of every antibiotic ever developed. This problem has been further compounded by the fact that no new mechanistic classes of antibiotics have emerged in the last 40 years. While the reasons for this are multifactorial, it is a commonly overlooked fact that virtually all antibiotics in clinical use were discovered with little foresight and often serendipitously. As a result, we lack sufficient knowledge of what defines a good drug target and how to develop new antibiotics from it. We aim to address this deficiency by applying novel mass spectrometry-based metabolomics approaches to gain insight into the underlying biology of the microbes we wish to target and their responses perturbation at the pharmacologically relevant level of metabolites. Current efforts focus chiefly on *Mycobacterium tuberculosis*, *Staphylococcus aureus* and *Enterococcus faecium*.

de Carvalho LPS, Fischer SM, Marrero J, Nathan C, Ehrt S, **Rhee KY.** Metabolomics of Mycobacterium tuberculosis reveals compartmentalized co-catabolism of carbon substrates. Chem Biol. 2010;17:1122-31.

de Carvalho LPS, Zhao H, Dickinson CE, Arango N, Lima CD, Fischer S, Ouerfelli O, Nathan C, **Rhee KY.** Activity-based metabolomic profiling of enzymatic function: identification of Rv1248c as a mycobacterial 2-hydroxy-3-oxoadipate synthase. Chem Biol. 2010;17:323-32. *feature article

Chakraborty S, Gruber T, Barry CE, Boshoff HI, **Rhee KY**. Para-aminosalicylic acid acts as an alternative substrate of folate metabolism in Mycobacterium tuberculosis. Science. 2013;339:88-91.

Eoh H and **Rhee KY**. Multifunctional essentiality of succinate metabolism in adaptation to hypoxia in Mycobacterium tuberculosis. Proc Natl Acad Sci USA. 2013;110:6554-59.

Marrero J, **Rhee KY,** Pethe K, Schnappiner D, Ehrt S. Gluconeogenic carbon flow of TCA cycle intermediates is critical for Mycobacterium tuberculosis to establish and maintain infection. Proc Natl Acad Sci, U.S.A. 2010;107:9819-24.

**Rhee KY,** de Carvalho LPS, Bryk R, Ehrt S, Marrero J, Park S-W, Schnappiner D, Venugopal A, Nathan C. Central carbon metabolism in Mycobacterium tuberculosis: an unexpected frontier. Trends Microbiol. 2011;19:307-14.

Wei JR, Krishnamoorthy V, Murphy KC, Kim J-H, Schnappinger D, Alber T, Sassetti CM, **Rhee KY**, Rubin EJ. Antibiotic targets vary in their sensitivity to inhibition by depletion. Proc Natl Acad Sci, USA. 2011;108:4176-81.

**ENTERIC PATHOGENS:**

**Quorum Sensing Based Cholera Prophylactic.** *Golightly, March.* In collaboration with Dr. John March of Bio-Engineering at Cornell University in Ithaca, a novel cholera prophylactic is being developed. Cholera uses cell-to-cell signaling to coordinate its growth and virulence in the human gut. Strains of commensal bacteria that naturally reside in the gut are being engineered to express chemical signals used by cholera to abort the colonization process and allow the pathogen to pass through the G.I. system without causing symptoms. The prophylactic would be administered to those at risk of exposure to prevent the development of disease. Ultimate testing is planned in Haiti in collaboration with colleagues at Groupe Haïtien d'Etude du Sarcome de Kaposi et des Infections Opportunistes (GHESKIO) in Port-au-Prince. The project is part of a Bill and Melinda Gates Foundation Grand Challenges Explorations to Create New Ways to Protect Against Infectious Disease.

**Multiplexed Detection of Food and Waterborne Pathogens.** *Barany, Golightly, Larone.* The ability to rapidly detect food and waterborne pathogens is of utmost importance in preventing outbreaks associated with contamination of our nation's food and water supply. Existing detection systems have a limited ability to simultaneously screen a single sample for multiple agents. To meet this need we will use the ligase detection reaction (LDR) combined with PCR, and Universal Array detection. The new technology is an extension of our prior development of assays for distinguishing blood-borne bacterial and viral pathogens. The new PCR/LDR assays will detect category B bacterial, viral, and protozoan food and water-borne pathogens in stool specimens. The assay will be validated using samples obtained from the NYPH/Cornell as well as collaborators in Haiti (GHESKIO) and Ghana (NMIMR).


Das S, Pingle MR, Muñoz-Jordán J, Rundell MS, Rondini S, Granger K, Chang GJ, Kelly E, Spier EG, **Larone D**, Spitzer E, **Barany F, Golightly LM.** Detection and serotyping of dengue virus in serum samples by multiplex reverse transcriptase PCR-ligase detection reaction assay. J Clin Microbiol. 2008;46:3276-84.

Granger K, Rundell MS, Pingle M, Shatsky R, **Larone DH, Golightly LM, Barany F,** Spitzer E. Multiplex-PCR-LDR-CE assay for the simultaneous detection of drug resistance and toxin genes for Staphylococcus aureus, Enterococcus faecalis and Enterococcus faecium. J Clin Microbiol. 2010;48(1):277-80.

Pingle MR, Granger K, Feinberg P, Shatsky R, Sterling B, Rundell M, Spitzer E, **Larone D, Golightly LM, Barany F.** Multiplexed identification of blood-borne bacterial pathogens by use of a novel 16S rRNA gene PCR-ligase detection reaction-capillary electrophoresis assay. J Clin Microbiol. 2007;45:1927-35.

Pingle M, Rundell M, Das S, **Golightly LM, Barany F.** PCR/LDR/universal array platforms for the diagnosis of infectious disease. Methods Mol Biol. 2010;632:141-57.

Rondini S, Pingle MR, Das S, Tesh R, Rundell MS, Hom J, Stramer S, Turner K, Rossmann SN, Lanciotti R, Spier EG, Muñoz-Jordán J, **Larone D,** Spitzer E, **Barany F, Golightly LM.** Development of multiplex PCR-ligase detection reaction assay for detection of West Nile virus. J Clin Microbiol. 2008;46:2269-79.

**HEPATITIS:**

**Clinical Studies of Viral Hepatitis.** *Marks, Glesby.* Hepatitis C infection is the leading cause of end stage liver disease and need for liver transplantation in this country. Studies have shown that patients with HIV/HCV coinfection have an accelerated course of progression to cirrhosis and end stage liver disease compared to patients with HCV infection alone. Strategies for improving treatment outcomes are needed for this population. Current studies being conducted at Cornell focus on initial treatment of HCV infection as well as treatment of refractory disease. CCTU investigators are conducting an ACTG study utilizing the protease inhibitor, boceprevir, as part of HCV treatment (ACTG 5294). Additional direct-acting antivirals being studied in coinfected patients at Cornel include daclatasvir, faldaprevir, simeprevir, and telaprevir. Completed studies include an epidemiologic investigation of risk factors for hepatic steatosis in HIV/HCV coinfection, a pilot study examining the safety and efficacy of treatment of acute HCV infection in HIV-infected patients, as well as additional clinical trials conducted with the ACTG. The Center for the Study of Hepatitis C, a multidisciplinary center involving Rockefeller University, Weill Cornell Medical College, and New York Presbyterian Hospital, provides additional opportunities for translational research, access to a serum and tissue bank, and collaboration with experts in the field of virology and hepatitis treatment (e.g. Drs. Ira Jacobson, Charlie Rice).


Bambha K, Pierce C, Cox C, French AL, Tien PC, Sharp GB, Augenbraun M, **Glesby MJ,** Villacres MC, Plankey M, Strickler HD, Gange SJ, Peters MG. Assessing mortality in women with hepatitis C virus and HIV using indirect markers of fibrosis. AIDS. 2012;26(5):599-07.

Branch AD, Kang M, Hollabaugh K, Wyatt CM, Chung RT, **Glesby MJ.** In HIV/hepatitis C virus co-infected patients, higher 25-hydroxyvitamin D concentrations were not related to hepatitis C virus treatment responses but were associated with ritonavir use. Am J Clin Nutr. 2013;98(2):423-29.

Fierer DS, Dieterich DT, Fiel MI, Branch AD, **Marks KM,** Fusco DN, Hsu R, Smith DM, Fierer J. Rapid progression to decompensated cirrhosis, liver transplantation, and death in HIV-infected men after primary HCV infection. Clin Infect Dis. 2012; 56:1038-43.

Hua L, Andersen JW, Daar ES, **Glesby MJ,** Hollabaugh K, Tierney C. Hepatitis C virus/HIV coinfection and responses to initial antiretroviral treatment. AIDS. 2013. [epub ahead of print]

Martinez AD, Dimova R, **Marks KM,** Beeder AB, Zeremski M, Kreek MJ, Talal AH. Integrated internist-addiction medicine-hepatology model for hepatitis C management for individuals on methadone maintenance. J Viral Hepat. 2012;19(1):47-54.

Talal AH, Liu R-C, Zeremski M, Dimova R, Dove L, Pearce D, Hassanein T, Doonguah L, Aboulafia D, Rodriguez J, Bonilla H, Galpin J, Aberg JA, Johnston B, **Glesby MJ, Jacobson IM**. Randomized trial comparing dose reduction and growth factor supplementation for management of hematological side effects in HIV/HCV patients receiving pegylated-interferon and ribavirin. J Acquir Immune Defic Syndr. 2011;58:261-68.

**HIV/AIDS:**

**Observational Studies.** *Glesby, Gulick, Jacobs, Marks, Merrick, Siegel, Singh, Vaamonde, Vogler, Wilkin.* The Center for Special Studies (HIV clinic) at New York-Presbyterian-Weill Cornell Center uses an electronic medical records system that is an invaluable resource for clinical research. Over 10,000 records of HIV-infected patients dating back to 1991 are available. Completed projects include case-control studies of osteonecrosis, diabetes mellitus, and polycythemia in HIV-infected patients, a retrospective review of the safety and efficacy of antiretroviral regimens containing three protease inhibitors, temporal trends in hospital admission diagnoses, and hepatic steatosis. Ongoing studies are focusing on MMR vaccination, malignancies, and use of the HIV tropism assay. Other projects utilize data from the Women's Interagency HIV Study (WIHS, a cohort study of women with or at high risk for HIV infection) through ongoing collaboration. Fellows have the opportunity to design, conduct, and analyze studies using the databases.

**Marks KM**, Clarke RM, Bussel JB, **Talal AH, Glesby MJ**. Risk factors for thrombocytopenia in the era of potent antiretroviral therapy. JAIDS**.** 2009;52:595-99.

Tien PC, Schneider MF, Cox C, Cohen M, Karim R, Lazar J, Young M, **Glesby MJ.** HIV, highly active antiretroviral therapy and lipoprotein particle concentrations in the Women's Interagency HIV Study. AIDS. 2010;24:2809-17.

Vorkas CK, **Vaamonde CM, Glesby MJ.** Testosterone replacement therapy and polycythemia in HIV-infected patients. AIDS. 2012;26:243-45.


**Clinical Trials of HIV/AIDS.** *Glesby, Gulick, Marks, Vogler, Wilkin.* The Cornell HIV/AIDS Clinical Trials Unit (CCTU) designs and conducts clinical trials in HIV-infected individuals and those at risk for HIV. The CCTU participates actively in studies sponsored by four NIH-funded networks: the AIDS Clinical Trials Group (ACTG), the HIV Prevention Network (HPTN), the International Network for Strategic Initiatives in Global HIV Trials (INSIGHT), and the NIH-funded AIDS Malignancy Consortium (AMC). Other studies are sponsored by the New York City Economic Development Corporation and the pharmaceutical industry. Current clinical investigation centers on two broad areas: (1) antiretroviral agents and strategies for treatment and prevention; and (2) treatment and prevention of HIV-related complications, including co-infections and complications of antiretroviral therapy. Additional areas of investigation are pharmacokinetics of HIV drugs and HIV-infected women's health. Current specific projects include studies of the initiation of antiretroviral therapy (INSIGHT START study); novel adherence interventions (investigator-initiated HABIT study); studies of investigational antiretroviral drugs (dolutegravir; tenofovir pro-drug); observational study of HIV reservoirs (ACTG 5231); novel pre-exposure prophylaxis (PrEP) regimens (HPTN 069/ACTG 5303); treatment of HPV-associated anal dysplasia (AMC 076); prevention of HIV-related complications (HPV vaccine in ACTG A5298); safety, efficacy, and pharmacokinetics of boceprevir and novel oral antiviral regimens in chronic and acute HCV/HIV co-infection

(ACTG 5294, 5327); novel diagnostic method for tuberculosis (ACTG A5295); observational study of aging in HIV (ACTG 5322); CMV and immune activation (investigator-initiated study); and, doxycycline for COPD in HIV (NIH R34). Future ACTG studies are aimed at novel approaches to functional HIV cure. There are opportunities for fellows to participate in all aspects of HIV/AIDS clinical trials. Fellows may spend their fellowship research year(s) conducting HIV/AIDS clinical research as part of the clinical trials unit under the mentorship of one of the HIV clinical trials investigators, and participate in the K30 program (Masters Degree Program in Clinical Investigation).


**Glesby MJ,** Albu J, Chiu YL, Ham K, Engelson E, He Q, Muthukrishnan V, Ginsberg HN, Donovan D, Ernst J, Lesser M, Kotler DP. Recombinant human growth hormone and rosiglitazone for abdominal fat accumulation in HIV-infected patients with insulin resistance: a randomized, double-blind, placebo-controlled, factorial trial. PLoS One. 2013;8(4):e61160.

**Gulick RM,** Lalezari J, Goodrich J, et al. Maraviroc for previously treated patients with R5 HIV-1 infection. N Engl J Med. 2008;359:1429-41.

Shikuma C, Ribaudo HJ, Zheng Y, **Gulick RM,** Meyer WA, Tashima KT, Bastow B, Kuritzkes D, **Glesby M.** Change in high-sensitivity C-reactive protein (hsCRP) levels following initiation of efavirenz-based antiretroviral regimens in HIV-infected individuals. AIDS Res Hum Retroviruses. 2011;27:461-68.

**Vogler, MA,** Patterson K, Kamemoto L, Park JG, Watts H, Aweeka F, Klingman KL, Cohn SE. Contraceptive efficacy of oral and transdermal hormones when co-administered with protease inhibitors in HIV-1-infected women pharmacokinetic results of ACTG trial A5188. JAIDS. 2010;55:473-82.

**Wilkin TJ**, Lalama CM, McKinnon J, Gandhi RT, Lin N, Landay A, Ribaudo H, Fox L, Currier JS, Mellors JW, **Gulick R,** Tenorio AR. A pilot trial of adding maraviroc to suppressive antiretroviral therapy for suboptimal CD4+ T-cell recovery despite sustained virologic suppression: ACTG A5256. J Infect Dis. 2012;206-534-42.

**Wilkin TJ,** Su Z, Krambrink A, Long J, Greaves W, Gross R, Hughes MD, Flexner C, Skolnik PR, Coakley E, Godfrey C, Hirsch M, Kuritzkes DR, **Gulick RM.** Three-year safety and efficacy of vicriviroc, a CCR5 antagonist, in HIV-1-infected treatment-experienced patients. JAIDS. 2010:15;54:470-76.


**Influenza Clinical Research Studies.** *Glesby, Gulick, Kaner, Berlin, Salvatore.* The CCTU is a site for observational studies of influenza in outpatients and inpatients conducted through the NIH-funded INSIGHT network and is participating in clinical trials of influenza through the NIH's Influenza Research Collaboration and pharmaceutical sponsored trials in collaboration with Robert Kaner and David Berlin in the Pulmonary division.

## HOSPITAL EPIDEMIOLOGY AND INFECTION CONTROL:

**Healthcare-Associated Infections.** *Calfee, Shuman.* The Hospital Epidemiology Program at New York Presbyterian Hospital-Weill Cornell Medical Center has research activities ranging from traditional epidemiologic studies of infection control risk factors and outcomes to intervention trials of infection control policies and procedures. The primary goal of the research program is to improve patient safety by reducing the risk of healthcare-associated infections. Observational studies can be carried out utilizing infection control surveillance data, clinical microbiology data, and a robust hospital-based clinical database, which can be queried electronically. Previous and ongoing projects have studied patient-oriented and systems-based factors associated with transmission of multidrug-resistant organisms, device-related infections, and procedure-related infections. In addition, the program has the potential for performing individual and cluster randomized trials of infection control interventions at Weill Cornell and in collaboration with Columbia University Medical Center. Fellows, residents, and students interested in epidemiologic research can choose from a wide variety of large or small projects depending on their needs. For fellows interested in a career in hospital epidemiology, there is opportunity to receive intensive training in this exciting field by participating in the Masters of Science in Clinical Investigation Program, or the Graduate Program in Clinical Epidemiology and Health Services and through direct participation in the Hospital Epidemiology Program.


**Calfee DP, Jenkins SG.** Use of active surveillance cultures to detect asymptomatic colonization with carbapenem-resistant *Klebsiella pneumoniae* among intensive care unit patients. Infect Control Hosp Epidemiol. 2008; 29:966-68.

Greene MT, Chang R, Kuhn L, Rogers MA, Chenoweth CE, **Shuman E,** Saint S. Predictors of hospital-acquired urinary tract-related bloodstream infection. Infect Control Hosp Epidemiol. 2012;33:1001-17.

Koll B, Ruiz RE, **Calfee DP**, Jalon HS, et al. Prevention of hospital-onset *Clostridium difficile* infection in the New York metropolitan region using a collaborative intervention model. J Healthc Qual. Epub January 7, 2013.

Patel G, Huprikar S, Factor SH, **Jenkins SG, Calfee DP.** Outcomes of carbapenem-resistant *Klebsiella pneumoniae* infection and the impact of antimicrobial and adjunctive therapies. Infect Control Hosp Epidemiol. 2008; 29:1099-06.

Patel G, **Jenkins SG,** Mediavilla JR, Kreiswirth BN, Radbill B, Salgado CD, **Calfee DP.** Clinical and molecular epidemiology of methicillin-resistant *Staphylococcus aureus* among patients in an ambulatory hemodialysis center. Infect Control Hosp Epidemiol. 2011; 32:881-89.

**Satlin MJ,** Kubin CJ, **Blumenthal JS, Cohen AB,** Furuya EY, **Wilson SJ, Jenkins SG, Calfee DP.** Comparative effectiveness of aminoglycosides, polymyxin B, and tigecycline for clearance of carbapenem-resistant *Klebsiella pneumoniae* from the urine. Antimicrob Agents Chemother. 2011; 55:5893-99.

**Shuman EK,** Washer LL, Arndt JL, Zalewski CA, Hyzy RC, Napolitano LM, Chenoweth CE. Analysis of central line-associated bloodstream infections in the intensive care unit after implementation of central line bundles. Infect Control Hosp Epidemiol. 2010;31:551-53.

Swaminathan M, Sharma S, Blash S, Patel G, Banach DB, Phillips M, LaBombardi V, Anderson K, Kitchel B, Srinivasan A, **Calfee DP.** Prevalence and risk factors for acquisition of carbapenem-resistant Enterobacteriaceae in the setting of endemicity. Infect Control Hosp Epidemiol. 2013;34:809-17.

**HUMAN PAPILLOMAVIRUS (HPV):**

**Human Papillomavirus Vaccination in HIV-1-Infected Men**. *Wilkin.* Anal carcinoma is increased among HIV+ and HIV- men who have sex with men. Similar to the cervix, premalignant lesions of the anus (squamous intraepithelial lesions or SIL) are readily detectable by screening cytology and have high-risk types of human papillomavirus as the most important cofactor. This study evaluated the safety and immunogenicity of the quadrivalent HPV vaccine in HIV-1-infected men. The study found that the vaccine was safe and highly immunogenic. An extension of the clinical trial will evaluate whether this vaccine induces immune memory.

Stier EA, Goldstone SE, Einstein MH, Jay N, Berry JM, **Wilkin T,** Lee JY, Darragh TM, Costa MD, Panther L, Aboulafia D, Palefsky JM. Safety and efficacy of topical Cidofovir to treat high-grade perianal and vulvar intraepithelial neoplasia in HIV-positive men and women. AIDS. 2013; 27(4): 545-51.

**Wilkin T**, Lee JY, Lensing SY, Stier EA, Goldstone SE, Berry JM, Jay N, Aboulafia D, Cohn DL, Einstein MH, Saah A, Mitsuyasu RT, Palefsky JM. Safety and immunogenicity of the quadrivalent human papillomavirus vaccine in HIV-1-infected men. J Infect Dis. 2010; 202:1246-53.

**Wilkin TJ,** Lee JY, Lensing SY, Stier EA, Goldstone SE, Berry JM, Jay N, Aboulafia DM, Einstein MH, Saah A, Mitsuyasu RT, Palefsky JM. High grade anal intraepithelial neoplasia among HIV-1-infected men screening for a multi-center clinical trial of a human papillomavirus vaccine. HIV Clinical Trials. 2013; 14(2):75-79.

**A Randomized Clinical Trial of HPV Vaccination in HIV-1-Infected Men and Women.** *Wilkin.* This ongoing double-blind, placebo-controlled trial is evaluating the efficacy of the quadrivalent HPV vaccine for prevention of anal HPV infection and high grade anal dysplasia. This is being conducted by the AIDS Clinical Trials Group in the US and Brazil. This study will also test whether the vaccine protects against oral HPV infection.

**Human Papillomavirus Test and Treat in HIV-Infected Women**. *Wilkin.* Cervical cancer is a major cause of morbidity and mortality in areas of the world without access to cervical cancer screening. Implementation of cytology-based screening is difficult in areas with limited resources. This clinical trial investigates a promising alternative screening strategy: a direct test for high-risk HPV types with immediate cryotherapy for those women detected with HPV. This project is being conducted at clinical trials sites in Africa, Peru, India and Haiti. This study randomizes women to a conventional cytology-based cervical cancer screening or a novel HPV test-and-treat strategy. This is funded in part by a PEPFAR/NIH collaboration.

**A Randomized Clinical Trial of Topical Therapy for Anal Dysplasia.** *Wilkin.* The standard treatment of high grade anal dysplasia are surgical treatments, which have associated morbidity and high failure rates. This study will compare two topical therapies (5-fluorouracil cream or imiquimod cream) to close observation for treatment of high grade anal dysplasia. This study is being conducted by the AIDS Malignancy Consortium, which is sponsored by the National Cancer Institute.

## LEISHMANIASIS:

**Visceral Leishmaniasis: Immunoregulation of Host Response to Antileishmanial Chemotherapy and Immunochemotherapy.** *Murray.* Various host immunologic mechanisms, largely T [Th1] cell-dependent, regulate the in vivo capacity to respond to antileishmanial chemotherapy. Using pentavalent antimony and amphotericin B as two distinct pharmacologic probes in *L. donovani*-infected mice, this project is examining the host mechanisms that determine or can enhance initial in vivo host responsiveness to chemotherapy and/or regulate subsequent prevention of posttreatment relapse. The work is focused on the interaction of antileishmanial chemotherapy with amplified cytokine-induced macrophage activation, chemokine-induced granuloma assembly, CD4 and CD8 cell responses, activating and deactivating mechanisms (cytokines, receptors, intracellular signaling) and immunologic effects induced by chemotherapy itself. The goal of the project is to employ immunochemotherapy to improve treatment-induced outcome in visceral leishmaniasis, both the initial host response to chemotherapy and the long-term prevention of relapse in this intracellular protozoal infection.


**Murray HW.** Accelerated control of visceral Leishmania donovani infection in IL-6$^{-/-}$ mice. Infect Immun. 2008; 76:4088-91.

**Murray HW**, Tsai CW, Liu J, Ma X. Responses to Leishmania donovani in mice deficient in IL-12, IL-12/IL-23 or IL-18. Infect Immun. 2006; 74:4370-74.

**Murray HW**, Tsai CW, Liu J, Ma X. Visceral Leishmania donovani infection in IL13$^{-/-}$ mice. Infect Immun. 2006; 74:2487-90.

**Murray HW**, Xiang Z, Ma X. Responses to *Leishmania donovani* in mice deficient in both phagocyte oxidase and inducible nitric oxide synthase. Am J Trop Med Hyg. 2006; 74:1013-15.

**Murray HW,** Zhang Y, Zhang Y, Raman V, Reed SG, Ma X. Regulatory actions of TLR2 and TLR4 in experimental Leishmania donovani infection in the liver. Infect Immun. 2013;81:2318-26.

**MALARIA:**

**Endothelial Progenitor Cells and the Pathogenesis of Cerebral Malaria.** *Golightly, Gyan.* Despite its virulence, the pathophysiologic basis of *P. falciparum* disease and cerebral malaria are poorly understood. Sequestration of infected red blood cells (iRBCs) in the microvasculature is a major pathologic finding in *P. falciparum* infections. The repair of microvasculature damaged by infection may occur either by the proliferation or migration of local endothelial cells, or the recruitment of bone marrow-derived circulating endothelial progenitor cells (EPCs). We hypothesize that *P. falciparum* infection results in an imbalance between microvascular damage and repair. Cerebral malaria occurs when circulating EPCs are diminished and damaged endothelial cells cannot be replaced. To test this hypothesis, EPC levels and markers of bone marrow activation in *P. falciparum*-infected patients with different degrees of disease severity are being compared with normal uninfected controls. These studies are being performed in collaboration with the Noguchi Memorial Institute for Medical Research in Accra, Ghana.


Desruisseaux MS, Machado FS, Weiss LM, Tanowitz HB, **Golightly LM**. Cerebral malaria, a vasculopathy. Am J Pathol. 2010;176(3):1075-78.

Gyan B, Quarm Goka B, Adjei GO, Tetteh JKA, Kusi KA, Aikins A, Dodoo D, Lesser ML, Sison CP, Das S, Howard ME, Milbank E, Fischer K, Rafii S, Jin D, **Golightly LM**. Cerebral malaria is associated with low levels of circulating endothelial progenitor cells in African children. Am J Trop Med Hyg. 2009;80:541-46.


**A Non-invasive Cell Phone Imaging Probe for Diagnosing Malaria.** *Golightly, Bilenca.* Cerebral malaria is a major cause of morbidity and mortality particularly in young children. There are currently no tests to determine which of those infected will develop the syndrome or recover. In collaboration with Dr. Alberto Bilenca at the University of the Negev in Israel, a cell phone imaging system that can non-invasively detect malaria parasites in the blood is being developed. The system uses a polarized laser to detect hemozoin crystals indicative of malaria parasite infection, as well as micro-obstructions in the circulatory system that result from the infection and have been postulated to be indicative of disease severity. Ultimately, human testing of the device is planned in Ghana in collaboration with colleagues at the NMIMR. This project is part of a Bill and Melinda Gates Foundation Grand Challenges Explorations to Create Low-Cost Cell Phone-Based Applications for Priority Global Health Conditions.

**Genetic variation in the human malaria parasite, *Plasmodium falciparum*.** *Kirkman.* Malaria, a vector borne disease, causes great morbidity and mortality in tropical and subtropical regions of the world. Crucial to the continuing burden of disease is the parasite's ability to evade clearance in the host; both the ability to evade the host immune system by changing surface proteins inserted into the host red blood cell, a process termed antigenic variation, and the ability to develop drug resistance. Underlying both is the ability of this eukaryotic pathogen, with a haploid genome for most of its lifecycle, to generate and incorporate DNA mutations. We aim to study malaria DNA recombination and repair in the context of disease pathogenesis focusing on antigenic variation and the development of drug resistance.

**Antigenic Variation:** After invading a red blood cell the malaria parasite modifies its host cell in different ways. Parasite proteins are inserted into the host red cell and bind to receptors on host endothelial cells, a process termed cytoadherence and is one of the key pathogenic and virulence factors of *P. falciparum* infections. A surface protein termed *Plasmodium falciparum* erythrocyte membrane protein 1 (PfEMP1) was identified as the protein responsible for cytoadherence. This protein is encoded by the large multi-copy gene family termed *var*. There is great diversity within this gene family and the mechanisms creating this diversity are a focus of our work. To better understand the generation of genetic diversity within this multi-copy gene family we are manipulating the parasite genome to determine how the parasite repairs damaged DNA.

**Drug Resistance:** We are studying the mechanisms by which a parasite becomes resistant to antimalarials by focusing on the ways in which the parasites acquire mutations in DNA. Using genetically modified parasites we are studying the ability of the parasite to generate point mutations and gene duplications that have been previously associated with drug resistance in the field. We are able to manipulate both copy number and specific sequence in order to further study the interplay of different pathways implicated in parasite drug resistance.

**A Search for More Effective Treatments for Babesiosis.** *Kirkman***:** Babesiosis is a tickborne zoonotic disease found worldwide. This once relatively obscure disease has been gaining recognition in the New York region as "the local malaria." We have started working with *Babesia divergens* in initial drug screening assays and are considering ways to further our studies using the local parasite, *Babesia microti*.


Frank M, **Kirkman L**, Constantini D, Sanyal S, Lavazec C, Templeton T and Deitsch K. Frequent recombination events generate diversity within the multi-copy variant antigen gene families of *Plasmodium falciparum.* Int J Parasitol. 2008;38:1099-09.

**Kirkman L,** Deitsch KW. Antigenic variation and the generation of diversity in malaria parasites. Curr Opin Microbiol. 2012 ;15(4):456-62.

Heinberg A, Siu E, Stern C, Lawrence EA, Ferdig MT, Deitsch KW, **Kirkman L.** Direct evidence for the adaptive role of copy number variation on antifolate susceptibility in *Plasmodium falciparum*. Mol Microbiol. 2013 ;88(4):702-12.


## TRANSPLANTATION-ONCOLOGY INFECTIOUS DISEASES:

**Translational Research:** *Walsh, Soave, Helfgott, Satlin, Jacobs, Petraitiene, Petraitis, Katragkou.* Infectious diseases are important causes of morbidity and mortality in immunocompromised patients with cancer and those undergoing transplantation. The mission of the transplantation-oncology infectious diseases program is to develop new strategies for diagnosis, treatment, and prevention of life-threatening infections in immunocompromised children and adults with transplantation and neoclassic diseases through multidisciplinary translational research. The tools of this research include epidemiology, pathogenesis, antimicrobial pharmacology, immunopharmacology, molecular diagnostic microbiology, and studies of innate host defenses.

Following the observations at the bedside, we work systematically through in vitro systems, laboratory animal models, phase I-II clinical trials, and, where applicable to multicenter phase III clinical trials. Our clinical trials are conducted with consortia composed of seasoned clinical investigators with expertise in immunocompromised patients. Among the pediatric and adult patient populations studied within the Program are those hematological malignancies, aplastic anemia, myelodysplasia, hematopoietic stem cell transplantation, and solid organ transplantation. Our strategy for translational research is predicated on an iterative process of bedside to bench to bedside with an emphasis on the critical role of the physician-scientist in this process. These studies are conducted in collaboration with our colleagues in Pediatrics, Oncology, Hematology, Nephrology, Hepatobiliary Surgery, Clinical Microbiology, Pharmacology, and Microbiology & Immunology. We have a long and successful tradition of mentoring the future leaders in the field of infections in immunocompromised patients.

**Invasive Fungal Infections:** Recognizing the severe morbidity and mortality cause by invasive mycoses, the study of invasive fungal infections with specific emphasis on *Candida* spp., *Aspergillus* spp., the Mucorales (Zygomycetes), and emerging pathogens such as *Fusarium* spp., and *Scedosporium* spp., is a critical element of our mission. We conduct translational research in three major areas of medical mycology: antifungal pharmacology (Dr. Petraitis), molecular diagnosis (Dr. Petraitiene), and innate host defenses (Dr. Katragkou). Among the recent advances in 2012-2013, are the identification of the critical role of antifungal therapy in improving survival in patients with severe aplastic anemia, the combination antifungal therapy of *Candida* biofilms, transcriptional profiles and immunomodulatory activity of lipid formulations of amphotericin B on human monocytes, development and validation of the first multispecies PCR system for *Aspergillus* spp to be made available in a U.S. reference laboratory, plasma pharmacokinetics of posaconazole, largest case series of *Candida* osteomyelitis (collaboration with Hospital for Special Surgery), in vitro and in vivo interspecies analysis of virulence in experimental pulmonary mucormycosis: correlation with circulating molecular biomarkers, sporangiospore germination and hyphal metabolism. Ongoing clinical trials include pharmacokinetic studies of novel triazoles (Dr. Helfgott) and diagnostic biomarkers in immunocompromised children and adults (Dr. Petraitiene).

**Resistant Bacterial Infections:** The Program is developing new strategies for pharmacodynamically rational methods for administration of existing antibacterial agents, as well as development of new antimicrobial compounds against multidrug resistant bacterial pathogens, particularly *Pseudomonas aeruginosa,* carbapenem-resistant Enterobacteriaciae, and MRSA. Dr. Satlin is currently characterizing the epidemiology of carbapenem-resistant Enterobacteriaciae in patients with hematological malignancies, as well as investigating molecular diagnostic approaches to rapid identification of resistant bacteria as a guide to management of critically-ill patients. As a logical extension of these studies, we also are conducting clinical trials in *Pseudomonas aeruginosa* ventilator-associated pneumonia and multidrug resistant Gram-negative bacteremia.

**Viral Infections:** In an effort to better understand the epidemiology of community associated respiratory viruses, Dr. Jacobs is characterizing the epidemiology and risk factors for development of human rhinovirus (HRV) respiratory tract infections in HSCT recipients., as well as pursuing an ongoing prospective observational study characterizing the molecular epidemiology of these HRV infections. Dr. Soave is implementing a protocol trial for a novel antiviral agent against parainfluenza viral respiratory tract infection. Studies of other parainfluenza compounds in collaboration with Dr. Moscona in Pediatrics will provide our patients with new agents that may improve outcome from these serious infections in our immunocompromised population. The epidemiology of respiratory viral infections in these patients continues to evolve and will be the subject of further study. Finally, the Program is also initiating studies of the efficacy and the immunologic response of antiviral vaccines.


Cornely OA, **Helfgott D**, Langston A, Heinz W, Vehreschild JJ, Vehreschild MJ, Krishna G, Ma L, Huyck S, McCarthy MC. Pharmacokinetics of different dosing strategies of oral posaconazole in patients with compromised gastrointestinal function and who are at high risk for invasive fungal infection. Antimicrob Agents Chemother. 2012;56:2652-58.

Gamaletsou MN, Kontoyiannis DP, Sipsas NV, Moriyama B, **Alexander E**, Roilides E, **Brause B**, **Walsh TJ**. *Candida* osteomyelitis: analysis of 216 pediatric and adult cases. Clin Infect Dis. 2012;55(10):1338-51.

**Jacobs SE**, Lamson D, St George K, **Walsh TJ.** The human rhinoviruses. Clin Microbiol Rev. 2013;26:135-62.

Moriyama B, Jarosinski P, Figg WD, Henning SA, Danner RL, Penzak SR, Wayne AS, **Walsh TJ.** Pharmacokinetics of intravenous voriconazole in obese patients: implications of CYP2C19 homozygous poor metabolizer genotype. Pharmacotherapy. 2013;33(3):e19-22.

**Petraitis V, Petraitiene R,** Antachopoulos C, Hughes JE, Cotton MP, Kasai M, Harrington S, Gamaletsou MN, Bacher JD, Kontoyiannis DP, Roilides E, **Walsh TJ.** Increased virulence of *Cunninghamella bertholletiae* in experimental pulmonary mucormycosis: correlation with circulating molecular biomarkers, sporangiospore germination and hyphal metabolism. Medical Mycol. 2013;51:72-82.

**Satlin MJ, Calfee DP,** Chen L, Fauntleroy KA, Wilson SJ, **Jenkins SG,** Feldman EJ, Roboz GJ, Shore TB, **Helfgott DC, Soave R,** Kreiswirth BN, **Walsh TJ.** Emergence of carbapenem-resistant Enterobacteriaceae as a cause of bloodstream infections in patients with hematologic malignancies. Leuk Lymphoma. 2013;54(4):799-06.

Simitsopoulou M, Peshkova P, Tasina E, Katragkou A, Kyrpitzi D, Velegraki A, **Walsh TJ,** Roilides E. Species-specific and drug-specific differences in susceptibility of *Candida* biofilms to echinocandins: characterization of less common bloodstream isolates. Antimicrob Agents Chemother. 2013;57(6):2562-70.

Zhao Y, **Petraitiene R, Walsh TJ,** Perlin DS. A real-time PCR assay for rapid detection and quantification of *Exserohilum rostratum,* a causative pathogen of fungal meningitis from injection of contaminated methylprednisolone. J Clin Microbiol. 2013;51:1034-36.

## INTERNATIONAL PROGRAMS

### BRAZIL:

*The collaboration between Cornell University and the Federal University of Bahia started in 1964 and may be the longest collaboration of its type in the world today. To date, over 20 Cornell faculty members and ~120 students and fellows have participated in the program, and over 250 peer reviewed journal publications have emerged from the research. The program has been funded by the Commonwealth Fund and the Rockefeller Foundation, and since 1979, by the NIH. The current NIH funding supports our Tropical Medicine Research Center and a research training program in infectious diseases in Salvador, Brazil.*

**Cutaneous Leishmaniasis and HTLV-I:** *Carvalho, Glesby, Johnson.* This is a multi-disciplinary research program with investigators from Brazil and the United States. We seek to define the pathogenesis of these diseases and to develop intervention measures. Research is conducted at field study sites in the state of Bahia, Brazil, the Federal University of Bahia, and the Division of Infectious Diseases at Cornell. We are working to identify host and parasite factors that determine the outcome of leishmania infection. Based on the immunological studies previously performed, clinical trials have been performed using immunomodulatory agents combined with antimony therapy in cutaneous and mucosal leishmaniasis. Ongoing studies are also investigating the spectrum and natural history of subclinical and clinical disease in HTLV-I infection in relation to cytokine profiles and co-infections.


Jirmanus L, **Glesby MJ,** Guimarães LH, Lago E, Rosa ME, Machado PR, **Carvalho EM**. Epidemiological and clinical changes in American Tegumentary Leishmaniasis in an area of Leishmania (Viannia) Braziliensis transmission over a 20 year period. Am J Trop Med Hyg. 2012; 86:426-33.

Newlove T, Guimarães LH, **Morgan DJ,** Alcantara L, **Glesby MJ, Carvalho EM,** Machado PR. Antihelminthic therapy and antimony in cutaneous leishmaniasis: a randomized, double-blind, placebo-controlled trial in patients co-infected with helminths and Leishmania braziliensis. Am J Trop Med Hyg. 2011; 84:551-55.

Poetker SKW, Porto AF, Giozza SP, Muniz AL, **Caskey MF, Carvalho EMC, Glesby MJ.** Clinical manifestations in individuals with recent diagnosis of HTLV type I infection. J Clin Virol. 2011; 51:54-58.

Schnorr D, Muniz AC, Passos S, Guimaraes LH, Lago EL, Bacellar O, **Glesby MJ, Carvalho EM.** IFN- γ production to leishmania antigen supplements the leishmania skin test in identifying exposure to L. braziliensis infection. PloS Negl Trop Dis. 2012;6(12):e1947.

Sundberg MA, Costa D, Orge G, Castro NM, Muniz A, **Glesby MJ, Carvalho EM.** Helminthic infection and the risk of neurologic disease progression in HTLV-1. J Clin Virol. 2012; 53:251-55.

**Hansen's Disease (Leprosy) and Visceral Leishmaniasis:** *Dupnik, Johnson.* In collaboration with the Federal University of Rio Grande do Norte (UFRN), we are investigating the immunologic profile of the pathologic immune reactions (reversal reaction and erythema nodosum leprosum) of leprosy. An ongoing prospective study of these reactions uses a translational approach to address our primary research objectives of: (1) understanding the pathogenesis of complex immune responses to mycobacterial infection; (2) identifying a predictive biomarker for reactions; and (3) identifying novel therapeutic targets for treatment of reactions. Additional projects related to leprosy based at UFRN include characterization of the clinical profile of reactions, genetic susceptibility to leprosy, elucidation of risk of medication intolerance during leprosy treatment, and community and epidemiologic studies. UFRN laboratory facilities allow for flow cytometry, sequencing and qPCR, and immunohistochemical studies to be completed.

**Dupnik KM,** Martins MMC, Souza MTS, Jeronimo SMB, Nobre ML. Nodular secondary syphilis simulating lepromatous leprosy. Lepr Rev. 2012;83:389-93.

Moura MLN, **Dupnik KM,** Sampaio GAA, Nóbrega PF, Jeronimo AK, do Nascimento-Filho JM, Miranda Dantas RL, Queiroz JW, Barbosa JD, Dias G, Jeronimo SM, Souza MC, Nobre ML. Active surveillance of Hansen's disease (leprosy): Importance for case finding among extra-domiciliary contacts." PLoS Negl Trop Dis. 2013;7(3):e2093.

**HAITI:**

*The Cornell program in Haiti began in 1980 with the establishment of a unit for the study and treatment of infantile diarrhea at the State University Hospital in Port au Prince. The Cornell team began its AIDS research in 1982 and was instrumental in the formation of Groupe Haitien d'Etude du Sarcome de Kaposi et des Infections Opportunistes (GHESKIO). Since 1983, Cornell and GHESKIO have had uninterrupted NIH support resulting in over 130 publications, including the first detailed description of AIDS in a developing country (NEJM, 1983). Cornell-GHESKIO conducts NIH-sponsored HIV and tuberculosis clinical trials. With support from the U.S. Presidents Emergency Program for AIDS Relief (PEPFAR), GHESKIO provides AIDS, TB, and other services to ~500,000 persons annually. Despite ongoing political turmoil, deteriorating economic conditions, devastating earthquakes, and cholera epidemics, GHESKIO has never once closed its doors and continues to provide uninterrupted care free of charge. In 2010, GHESKIO received the Gates Award as the most outstanding global health institution in the world.*

**Research at GHESKIO: HIV/AIDS, Tuberculosis, and STDs**

Through clinical and operational research, GHESKIO seeks to define treatment and prevention models for HIV/AIDS and related diseases that are appropriate and effective for Haiti. GHESKIO's initial work defined the etiology of severe diarrhea and dehydration in Haitian infants. GHESKIO introduced oral rehydration therapy which resulted in a decrease in the hospital infant mortality rate from >40% to <1% within two years. Nationwide expansion of the GHESKIO program is estimated to have resulted in a 50% decrease in infant mortality in Haiti by the mid-1980s.

GHESKIO documented the first cases of AIDS in Haiti in 1982 and published a comprehensive description of AIDS in a tropical resource-poor setting in 1983 (*NEJM 1983*). The story of HIV/AIDS in Haiti has since been inseparable from that of GHESKIO. GHESKIO has been the major source of information on the evolving AIDS epidemic in Haiti and a partner with the government and other organizations in combating the epidemic for over 30 years. The GHESKIO research program has evolved from early observational studies to large clinical trials and its designation as an NIH clinical trials unit. In 1983, GHESKIO received its initial funding from the National Institutes of Health to define the epidemiology, natural history, risk factors, and associated co-infections of HIV/AIDS. Since then, GHESKIO's consistent research productivity has been recognized by uninterrupted support from the National Institutes of Health, a MERIT award in 1990, and 25 new or competitive renewal grants. GHESKIO also conducts research with support from the World Health Organization and the French Government's National Agency for AIDS Research.

In 2003, GHESKIO was asked by the Haitian Government to expand its integrated prevention and care model to a network of public and private hospitals throughout the country as a part of the Haitian HIV Care and Prevention Network supported by the Global Fund against AIDS, TB and Malaria and from PEPFAR. GHESKIO provides training, supervision, administrative support, financial oversight, and continuing quality control for all HIV and TB clinical services provided at these sites. Haiti has a total of 38,029 patients on ART (2012), with 40% of them treated at GHESKIO and in its Network.

**HIV/AIDS:** *Fitzgerald, Gulick, Johnson, Pape.* Ongoing research projects include a randomized controlled clinical trial of early vs. late antiretroviral therapy for AIDS patients (NIH-sponsored CIPRA study; 2003 – 2010). The research is focused on finding the optimal time to start antiretroviral therapy in patients with CD4 counts between 200 and 350 cells/ml. GHESKIO is a member of an international collaboration of scientists and educators searching for an effective and safe HIV vaccine (NIH-sponsored HIV Vaccine Trials Network; 2001 – 2013). GHESKIO Director Dr. Jean Pape is the Principal Investigator of the HIV Vaccine Trials Network in Haiti and GHESKIO investigators conduct clinical trials of promising new HIV vaccine candidates. GHESKIO also is a member of an international group of scientists dedicated to developing treatment strategies for HIV and related disorders (NIH-sponsored AIDS Clinical Trials Group; 2002 – 2013). GHESKIO conducts clinical trials to evaluate the efficacy of antiretroviral treatment for HIV infected individuals in resource-limited countries. Research continues to evaluate the efficacy and feasibility of other AIDS prevention and treatment programs. GHESKIO investigators are evaluating the cost-effectiveness of HIV prevention and care services to maximize efficiency and demonstrate the feasibility of treatment programs in developing countries.

Buchbinder SP, Mehrotra DV, Duerr A, **Fitzgerald DW,** Mogg R, Li D, Gilbert PB, Lama JR, Marmor M, Del Rio C, McElrath MJ, Casimiro DR, Gottesdiener KM, Chodakewitz JA, Corey L, Robertson MN; Step Study Protocol Team. Efficacy assessment of a cell-mediated immunity HIV-1 vaccine (the Step Study): a double-blind, randomised, placebo-controlled, test-of-concept trial. Lancet. 2008;372:1881-93.

Charles M**,** Noel F, Leger P, Severe P, Riviere C, Beauharnais CA, Miller E, Rutledge J, Bang H, Shealey W, D'Aquila RT, **Gulick RM, Johnson WD Jr,** Wright PF, **Pape JW, Fitzgerald DW**. Survival, plasma HIV-1 RNA concentrations and drug resistance in

HIV-1-infected Haitian adolescents and young adults on antiretrovirals. Bull World Health Organ. 2008;86:970-77.

George E, Beauharnais CA, Brignoli E, Noel F, Bois G, De Matteis Rouzier P, Altenor M, Lauture D, Hosty M, Mehta S, Wright PF, **Pape JW.** Potential of a simplified p24 assay for early diagnosis of infant human immunodeficiency virus type 1 infection in Haiti. J Clin Microbiol. 2007;45:3416-18.

Kimmel AD, Charles M, Deschamps MM, Severe P, Edwards AM, **Johnson WD, Fitzgerald DW, Pape JW, Schackman BR.** Lives saved by expanding HIV treatment availability in resource-limited settings: the example of Haiti. J Acquir Immune Defic Syndr. 2013;63(2):e40-48.

Leger P, Charles M**,** Severe P, Riviere C, **Pape JW, Fitzgerald DW.** 5-year survival of patients with AIDS receiving antiretroviral therapy in Haiti. N Engl J Med. 2009;361:828-29.

Severe P, Jean Juste MA, Ambroise A, Eliacin L, Marchand C, Apollon S, Edwards A, Bang H, Nicotera J, Godfrey C, **Gulick RM, Johnson WD, Pape JW, Fitzgerald DW.** Early versus standard antiretroviral therapy for HIV infected adults in Haiti. N Engl J Med. 2010;363:257-65.

Severe P, Leger P, Charles M**,** Noel F, Bonhomme G, Bois G, George E, Kenel-Pierre S, Wright P, **Gulick R, Johnson WD, Pape JW, Fitzgerald DW.** Antiretroviral therapy in a thousand patients with AIDS in Haiti. N Engl J Med. 2005;353:2325-34.

**TUBERCULOSIS:** *Fitzgerald, Johnson, Pape, Ocheretina.* GHESKIO currently treats over 1,500 patients with active tuberculosis as well as patients with multi-drug resistant tuberculosis (MDR-TB). Research includes studies of the interactions between HIV and tuberculosis and optimal treatment for co-infected patients, new diagnostic tests for tuberculosis, and the epidemiology of multi-drug resistant tuberculosis in Haiti.

As a consequence of the earthquake, the TB incidence in Port-au-Prince doubled and an outbreak of MDR-TB resulted. The earthquake destroyed the three major tuberculosis sanatoria in the Port-au-Prince area, and most out-patient treatment centers. The Haitian National TB Program estimates that at least 3,000 TB patients in Port-au-Prince stopped their medications and dispersed to crowded refugee camps, where TB transmission accelerated in poorly ventilated and crowded tents. In response GHESKIO dramatically scaled up its TB program. GHESKIO opened a 100-bed TB tent field hospital in May 2010 and increased its TB treatment capacity from 600 to 1,700 patients per year. This year GHESKIO will open a 30 bed hospital for treating MDRTB patients.

Joseph P, Severe P, Ferdinand S, Goh KS, Sola C, Haas DW, **Johnson WD,** Rastogi N, **Pape JW, Fitzgerald DW.** Multidrug-resistant tuberculosis at an HIV testing center in Haiti. AIDS. 2006;20:415-18.

Koenig SP, Riviere C, Leger P, Joseph P, Severe P, Parker K, Collins S, Lee E, **Pape JW, Fitzgerald DW.** High mortality among patients with AIDS who received a diagnosis of tuberculosis in the first 3 months of antiretroviral therapy. Clin Infect Dis. 2009;48:829-31.

**Ocheretina O,** Merveille YM, Mabou MM, Escuyer VE, Dunbar SA, **Johnson WD, Pape JW, Fitzgerald DW.** Use of Luminex MagPlex magnetic microspheres for high-throughput spoligotyping of Mycobacterium tuberculosis isolates in Port-au-Prince, Haiti. J Clin Microbiol. 2013;51:2232-37.

Shigyo K, **Ocheretina O,** Merveille YM, **Johnson WD, Pape JW, Nathan CF, Fitzgerald DW.** Efficacy of nitazoxanide against clinical isolates of Mycobacterium tuberculosis. Antimicrob Agents Chemother. 2013;57(6):2834-37.

**SEXUALLY TRANSMITTED DISEASES:** *Fitzgerald, Johnson, Pape.* Studies of sexually transmitted diseases include the evaluation of rapid syphilis diagnostics for the elimination of congenital syphilis in Haiti (2002 – 2011); the goal of this project is to improve syphilis screening throughout the country to reduce deaths due to congenital syphilis. Support is from the United Nations Development Program, the World Bank, and the World Health Organization's Special Program for Research and Training in Tropical Disease. STD studies also include NIH sponsored research on the natural history of HIV and HPV co-infection and AIDS related cervical cancer.

**Fitzgerald DW,** Bezak K, **Ocheretina O,** Riviere C, Wright TC Jr, Milne GL, Zhou XK, Du B, Subbaramaiah K, Byrt E, Goodwin M, Rafii A, Dannenberg AJ. The effect of HIV and HPV co-infection on cervical COX-2 expression and systemic prostaglandin E2 levels. Cancer Prev Res. 2012;5(1):34-40.

Herring AJ, Ballard RC, Pope V, Adegbola RA, Changalucha J, **Fitzgerald DW,** Hook EW 3rd, Kubanova A, Mananwatte S, **Pape JW,** Sturm AW, West B, Yin YP, Peeling RW. A multi-centre evaluation of nine rapid, point-of-care syphilis tests using archived sera. Sex Transm Infect. 2006;82 Suppl 5:v7-12.

**Schackman BR,** Neukermans CP, Fontain SN, Nolte C, Joseph P, **Pape JW, Fitzgerald DW.** Cost-effectiveness of rapid syphilis screening in prenatal HIV testing programs in Haiti. PLoS Med. 2007;4:e183.

**COMMUNITY HEALTH:** *Fitzgerald, Johnson, Pape.* GHESKIO's support to the surrounding areas that were devastated by the earthquake has strengthened its relationship with neighboring communities. The "City of God", adjacent to GHESKIO, is home to over 100,000 people living on less than $1/day. The comprehensive services that GHESKIO was providing for its AIDS/TB patients and their families have now been extended to this community. GHESKIO has also trained over 800 community members as "Health Agents" to advocate for sanitation and access to clean water, and to survey the community for infectious diseases and refer patients to the GHESKIO clinic. The City of God community has partnered with GHESKIO to claim ownership over their rebuilding and development goals.

The cholera epidemic is a recent example of GHESKIO's capacity and commitment to community health. The first report of cholera in Haiti occurred on October 19, 2010, only 10 months after the massive earthquake. Following its emergence in central Haiti, cholera spread to all 10 Departments of Haiti within 100 days, and by December 2012 there were 629,300 cases and 7,824 deaths - the largest cholera epidemic in recent history.

GHESKIO immediately established an emergency cholera treatment center in Port au Prince, and to date has treated over 10,500 patients with a mortality rate of <0.3%. GHESKIO launched a comprehensive cholera program in neighboring City of God, including provision of chlorinated water, building of latrines, and establishing rehydration posts and a 250-bed tent hospital. Community health workers were trained about symptoms of cholera, how to make rehydration fluids, and when to refer patients to GHESKIO. A permanent 100-bed cholera treatment center was built at GHESKIO in 2013.

The oral cholera vaccine (Shancol) was introduced into the City of God by GHESKIO in April 2012, and 50,000 volunteers had received two doses of the vaccine by July 2012. The demonstration trial was conducted with Partners in Health, Cornell, Harvard, and the Haitian Ministry of Health. GHESKIO conducted a door-to-door census of the City of God using hand-held communication devices. The experience in Haiti demonstrated that the many preconceptions and objections raised about the difficulty of delivering mass cholera vaccinations to a population can be overcome and that the vaccine can be delivered effectively to large numbers of people. The Haitian example provides a model for other countries to emulate in the years ahead.

**INDIA:**

*In 1994, we established the Kala-Azar Medical Research Center (KAMRC) in rural India, in Bihar State (the epicenter of India's visceral leishmaniasis epidemic), to test new treatments and develop new diagnostic and therapeutic approaches. Some of these new clinical approaches were the direct result of experimental work carried out in parallel in Leishmania-infected animals in our Weill-Cornell laboratory in New York City.*

*We also are excited to announce a new collaboration between Weill Cornell Medical College and Byramjee Jeejeebhoy Government Medical College (BJGMC) in Pune, India. BJGMC has received NIH funding for 20 years, producing over 100 publications in peer-reviewed journals. As an NIH international HIV clinical trials unit, research at BJGMC focuses on HIV and co-infections occurring in pregnant women and children. Since the collaboration began with Cornell in 2011, our fellows and students have conducted research on topics such as tuberculosis in pregnancy and dengue virus. BJGMC is currently conducting multiple trials as part of the NIH-sponsored International Maternal Pediatric Adolescent AIDS Trials Group (IMPAACT) and AIDS Clinical Trials Group (ACTG), including an HPV study chaired by Dr. Timothy Wilkin from Cornell.*

**Visceral Leishmaniasis in India: Clinical Trials at the Kala-Azar Medical Research and Treatment Center.** *Murray.* Visceral leishmaniasis (kala-azar) is a worldwide parasitic infection that involves the liver, spleen and bone marrow in children and adults. One-half of the world's 500,000 new cases occur in India. The treatment trials work at KAMRC has been remarkably successful, and initially more than 35 separate clinical trials were carried out in over 5,000 children and adults. For injectible treatments, we defined the usefulness of combination immunochemotherapy, short-course cost-effective treatment, and single-dose therapy using liposomal amphotericin B (heretofore, 21-28 days had been the usual prior treatment duration).

Equally important, we identified and tested miltefosine, the first effective oral therapy for this disease, representing, along with single-dose parenteral therapy, a second major breakthrough in treatment in kala-azar. In addition, we developed the concept of and tested short-course combination chemotherapy, using a single dose of a parenteral agent (liposomal amphotericin B) followed by 7 days of oral therapy (miltefosine). Separate results from a series of other trials have also demonstrated the sensitivity, specificity and clinical usefulness of rapid non-invasive diagnosis of kala-azar using fingerstick blood and the K39 antibody strip test. This reliable diagnostic method spares patients with kala-azar splenic or bone marrow aspiration. These advances form the cornerstone of diagnosis and treatment in 2013 in the National Kala-Azar Elimination Program on the Indian subcontinent.

**Murray HW.** Leishmaniasis in the United States: treatment in 2012. Amer J Trop Med Hyg. 2012;86:434-40.

**Murray HW,** Berman JD, Davies CR, Saravia NG. Advances in leishmaniasis. Lancet. 2005;366:1561-77.

Sundar S, Chakravarty J, Agarwal D, Rai M, **Murray HW.** Single-dose liposomal amphotericin B for Indian visceral leishmaniasis. N Eng J Med. 2010;362:504-12.
Sundar S, Chakravarty J, Rai VK, Agrawal N, Singh SP, Chauhan V, **Murray HW.** Amphotericin B treatment in Indian visceral leishmaniasis: response to 15 daily vs. alternate-day infusions. Clin Infect Dis. 2007;45:556-61.

Sundar S, Maurya R, Singh RK, Bharti K, Chakravarty J, Parekh A, Rai M, Kumar K, **Murray HW.** Rapid, noninvasive diagnosis in Indian visceral leishmaniasis: comparison of two strip formats in detection of anti-K39 antibody**.** J Clin Microbiol. 2006;44:251-53.

**Tuberculosis:** *Mathad.* The goal of the tuberculosis research program is to optimize the diagnosis, prevention and treatment of tuberculosis in mothers and children. Our longest ongoing study, conducted by researchers in the United States and in India, concerns the diagnosis of latent TB infection (LTBI) in pregnant women. It will improve our understanding of the immunology of pregnancy and help identify biomarkers for developing active TB postpartum. Other ongoing studies are investigating the use of GeneXpert, the interaction of TB and diabetes, and the effect of indoor air pollution on TB incidence in women and children. This year, we will also begin collecting samples for a national TB cohort study to assess host and microbial factors associated with poor response to TB treatment, progression from latent to active TB, and TB transmission.

**Mathad JS,** Gupta A. Tuberculosis in pregnant and postpartum women: epidemiology, management, and research gaps. Clin Infect Dis. 2012; 55: 1532-49.

**TANZANIA:**

*In 2006, a formal affiliation was established between WCMC and the Weill Bugando School of Medicine (WBSM) / Bugando Medical Center (BMC) in Mwanza, Tanzania. BMC is a 900-bed tertiary care center serving a population of ~13 million Tanzanians. WBSM was founded in 2003 with a first class of ten students, and now admits approximately 150 medical students per class, per year. WBSM has been renamed Weill Bugando in recognition of the support of Joan and Sanford Weill.*

*The goal of WCMC is to make WBSM/BMC the best medical school and teaching hospital in East Africa. The goal of the Weill Cornell collaboration is to aid in the development of the WBSM/BMC infrastructure and training programs by the exchange of faculty, fellows, residents and students. Long-term goals are to create a platform for self-sustaining research programs and clinical knowledge transfer as in our Haiti and Brazil programs. Each year since 2007, WCMC rotates approximately 40 senior teaching residents and fellows in medicine, pediatrics, surgery, and obstetrics and gynecology to Tanzania and brings 10 Tanzanian physicians to New York for clinical and research training. Three WCMC faculty members are based in Mwanza to serve as mentors, for both the Tanzanian and WCMC medical students and physicians at WBSM/BMC.*

**Research in Tanzania: HIV/AIDS, Schistosomiasis, and Non-Communicable Diseases.** *Downs, Fitzgerald, Johnson, Peck, Smart.* Since 2007, we have worked with Tanzanian colleagues to provide research training and to conduct clinical and operational research in Mwanza, Tanzania. Our goal is to seek effective methods of treatment, healthcare delivery, and disease prevention for Tanzanian patients. Specific areas of interest include: (1) HIV/AIDS and its associated co-infections, risk factors, and complications; (2) non-communicable diseases such as hypertension and renal dysfunction that are highly prevalent in the Tanzanian population; (3) schistosomiasis and mucosal immunity.


**Downs JA,** Mguta C, Kaatano GM, Mitchell KB, Bang H, Simplice H, Kalluvya SE, Changalucha JM, **Johnson WD, Fitzgerald DW.** Urogenital schistosomiasis in women of reproductive age in Tanzania's Lake Victoria region. Am J Trop Med Hyg. 2011;84(3)364-69.

**Downs JA,** Fuunay LD, Fuunay M, Mbago M, Mwakisole A, **Peck RN,** Downs DJ. "The body we leave behind:" a qualitative study of obstacles and opportunities for increasing uptake of male circumcision among Tanzanian Christians. BMJ Open. 2013;3:e002802.

**Downs JA,** Kabangila R, Verweij JJ, Jaka H, **Peck RN,** Kalluvya SE, Changalucha JM, **Johnson WD,** van Lieshout L, **Fitzgerald DW.** Detectable urogenital schistosome DNA and cervical abnormalities six months after single-dose praziquantel in women with *Schistosoma haematobium* infection. Trop Med Int Health. 2013;18(9):1090-06.

**Downs JA,** van Dam GJ, Changalucha JM, Corstjens PLAM, **Peck RN,** de Dood CJ, Bang H, Andreasen A, Kalluvya SE, van Lieshout L, **Johnson WD, Fitzgerald DW.** Association of schistosomiasis and HIV infection in Tanzania. Am J Trop Med Hyg. 2012;87(5)868-73.

Efraim L, **Peck RN,** Kalluvya SK, Kabangila R, Mazigo HM, Mpondo B, Bang HB, Todd J, **Fitzgerald DW, Downs JA.** Schistosomiasis and impaired response to antiretroviral therapy among HIV-infected patients in Tanzania. JAIDS. 2013;62(5):e153-56.

Hau DK, DiPace JI, **Peck RN, Johnson WD.** Global health training during residency: the Weill Cornell Tanzania experience. Journal of Graduate Medical Education. 2011;3:421-24.

Msango L, **Downs JA,** Kalluvya SE, Kidenya BR, Kabangila R, **Johnson WD Jr., Fitzgerald DW**, **Peck RN.** Renal dysfunction among HIV-infected patients starting antiretroviral therapy in Mwanza, Tanzania. AIDS. 2011;25(11)1421-25.

**Peck RN,** Luhanga A, Kalluvya S, Todd J, **Fitzgerald DW, Downs JA.** Predictors of tuberculosis in first six months after initiation of antiretroviral therapy: a case-control study. Int J Tuberc Lung Dis. 2012;16(8):1047-51.

**Peck RN,** Green E, Mtabaji J, Majinge C, **Smart L, Downs JA, Fitzgerald DW.** Hypertension-related diseases as a common cause of hospital mortality in Tanzania: a 3-year prospective study. J Hypertens. 2013. (in press)

Wajanga BM, Kalluvya S, **Downs JA, Johnson WD, Fitzgerald DW, Peck RN.** Universal screening of Tanzanian HIV-infected adult inpatients with the serum cryptococcal antigen to improve diagnosis and reduce mortality: an operational study. J Int AIDS Soc. 2011; 14:48.