

◀ *P. falciparum* sporozoite in a mosquito midgut



# Infectious Diseases

Washington University in St. Louis  
SCHOOL OF MEDICINE

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## ID NEWS & NOTES



We are interested in your achievements, clinical and/or research activities, and other personal news since leaving WUSM. Please contact Dr. Gerald Medoff at [gmedoff@dom.wustl.edu](mailto:gmedoff@dom.wustl.edu) with any information you would like to share.

All division newsletters can be found at:  
ID Division Newsletters

## The Human Virome in Febrile Children

Gregory A. Storch, M.D.



Gregory Storch, M.D.  
Ruth L. Siteman  
Professor of Pediatrics

I have been working on defining viral causes of fever without a source in young children for several years. In the past, approximately 5% of children with high fever and no apparent source were bacteremic. However, since the introduction of vaccines for Haemophilus influenzae type b and Streptococcus pneumoniae, the percent of febrile children who have positive blood cultures is well under 1%. Approximately 5-10% of these children have bacterial urinary tract infections. The remainder are widely suspected to have viral infections, but the specific viruses that are involved are not well defined.

We began using panels of virus-specific PCR reactions plus high-throughput sequencing for comprehensive viral detection to define the range of viruses that are involved and to potentially detect novel viruses. This work was carried out in collaboration with David Jaffe and other colleagues in Pediatric Emergency Medicine as well as with George Weinstock, Kristine

Wylie, and others from The Genome Institute at Washington University. The work was funded initially as a "Demonstration Project" within the Human Microbiome Project, a major effort by the NIH to define the role of normal flora in human health and disease.

Our project was the only viral project within the Human Microbiome Project. We tested samples of blood and nasopharyngeal secretions, and indeed were able to show that approximately 75% of children with fever without a source had evidence of one or more pathogenic viruses. The most common viruses were adenoviruses, human herpesvirus 6, enteroviruses, and parechoviruses. In comparison, we also analyzed well children of the same age who were having ambulatory surgery, and found that the healthy children had many fewer pathogenic viruses. The difference was especially evident in the blood.

Interestingly, the healthy children often had viruses detected, including about 25% with rhinovirus or other picornaviruses. Overall however, most of the viruses detected in healthy children were viruses of uncertain virulence. We also found that approximately half of the children with viruses detected and no evidence of viral infection nevertheless received antibiotic therapy. We hope that our findings will increase awareness of the importance of viral infection in this clinical setting, and help decrease the unnecessary use of antibiotics. Our findings have now been published in two main papers (Colvin JM et al, Pediatrics December 2012 [<http://pediatrics.aapublications.org/content/early/2012/10/30/peds.2012-1391>] and Wylie KM et al, PLoS One 2012;7(6):e27735. Epub 2012 Jun 13.).

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Above image (*P. Falciparum*): CDC/Dr. Mae Melvin (PHIL #2704), 1973. == License(s). Masthead image: Ute Frevert; false color by Margaret Shear; Copyright: © 2005 Frevert et al.

## FEATURED COLLEAGUE



**Loreen A. Herwaldt, M.D.**  
Professor of Medicine  
and Epidemiology

I graduated from Grinnell College in 1973 and from the University of Wisconsin School of Medicine in 1977. I did my residency in Internal Medicine (1977-1980) and my fellowship in Infectious Diseases (1982-1987) at Washington University. Between my residency and fellowship I was an Epidemic Intelligence Service (EIS) Officer at the Centers for Disease Control and Prevention (1980-1982).

I joined the faculty of the University of Iowa College of Medicine in 1987 where I am currently a Professor in Internal Medicine. I have a joint appointment in the Epidemiology Department of the University of Iowa College of Public Health and I am the Hospital Epidemiologist at the University of Iowa Hospitals and Clinics.

My research investigates healthcare-associated infections, particularly *S. aureus* infections and surgical site infections. I am the PI on a grant from the Agency for Healthcare Research and Quality (AHRQ) to develop and test an algorithm for preoperative care of patients undergoing cardiac operations or hip or knee replacements. I am serving on the Interscience Conference on Antimicrobial Agents and Chemotherapy's (ICAAC) annual meeting planning committee. I am an active member of the Society for Healthcare Epidemiology of America (SHEA) and I previously served on the board of directors. I edited the first edition of the textbook, *A Practical Handbook for Hospital Epidemiologists*, for SHEA and I teach in the SHEA/CDC and the ESCMID/SHEA hospital epidemiology courses.

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## Human Virome continued

More recently we have begun to extend these studies to children whose immune systems are not normal, including children with primary immunodeficiencies, children who have had solid organ and hematopoietic stem cell transplants, children with HIV, and children receiving immunosuppressive medications. We obtain samples from these children when they are not having acute symptoms and when they are having fever. The children with fever are followed and additional samples are obtained after the febrile episode has resolved. In addition, we obtain samples from children before and after transplant. These samples are analyzed using the panels of virus-specific PCRs and high throughput sequencing to understand the composition of the virome in these children, how it is affected by their immune dysfunction, and how it relates to symptomatic illness. The study also involves development and improvement of methods for using high-throughput sequencing to detect known and novel viruses. This work was recently funded by a 5-year R01 grant from the National Institute of Allergy and Infectious Diseases.

*Loreen A. Herwaldt, M.D. continued from left column*

Mentoring medical students, graduate students, fellows, and faculty members is one of my favorite aspects of my job. So I was honored and delighted to receive the SHEA Mentor-Scholar Award in 2012.

I am also interested in the role of narrative in health care and in patient-clinician communication. In 1999-2000, I took a sabbatical during which I interviewed authors who had written about their experiences of illness. Subsequently, I published a book entitled *Patient Listening* that presents the author-patients' stories of getting healthcare. For the past 13 years, small groups of first year medical students have done an excerpt of *Patient Listening* as readers' theater for their classmates. More recently, I have enjoyed leading seminars for third year medical students on their inpatient internal medicine rotations during which the students create a poem about one of their patients. The students often gain new insights into their patients as they write their patients' stories in a different genre. I am on the editorial staff of the UICCOM's literary magazine, *The Examined Life* and I recently had a piece entitled "No Red Lights" published in *Pulse*, an online literature and medicine journal.

I live in Iowa City with my husband Marc Abbott and three rescue dogs. I enjoy reading, writing, cooking, knitting, and exercising. I am very grateful that Dr. Medoff came to Atlanta while I was an EIS officer, took me to dinner, and then offered me a fellowship when I told him I wanted to train in infectious diseases.

## Thank you....Leon Robison, M.D.

We thank Dr. Robison for his generous contribution to the Infectious Diseases Division to support fellows' education and curriculum development. We also recognize Dr. Robison as an exceptional role model and mentor for many of our faculty and fellows. His dedication to patient care, education and clinical infectious diseases is exemplary. To support the research, education and activities of the Infectious Diseases Division, please contact

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# Awards & Announcements

RECENT AWARDS		
PRINCIPAL INVESTIGATOR	AWARD	PROJECT TITLE
Carlos Santos, M.D.	KL2 Career Development Award	Determination of incidence, risk factors and outcomes of delayed-onset cytomegalovirus disease among solid-organ transplant recipients using a large administrative database
Michael Lane, M.D.	KL2 Career Development Award	Outcomes of 1 vs 2 stage revision for prosthetic joint infections
Steven Lawrence, M.D.	Pfizer	MEDIC (Multi - site Electronic Data-Infectious Diseases Consortium) project; We are one of 4 sites in a large multi-site database designed to study a broad range of infectious disease questions

## special recognition

Nigar Kirmani, M.D., the Course Master for the second year Infectious Diseases Course, is the recipient of a 2012 Distinguished Service Teaching Award from the Washington University School of Medicine. The Distinguished Service Teaching Awards (DSTAs) are presented by Washington University medical students to faculty and house staff in appreciation of exemplary service in medical student education. Dr. Kirmani has been the recipient of the Distinguished Service Teaching Award in 2005, 2006, 2009, 2010, and 2011.

Gary J. Weil, M.D., FASTMH received Fellowship status in the American Society of Tropical Medicine and Hygiene in November 2012. This honor recognizes sustained professional excellence in any phase of tropical medicine, hygiene, global health or related disciplines.

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## farewell.....from Nur Önen, M.D.

I am sorry to say I will be leaving the Infectious Diseases Division at the end of January 2013. I am off to start a new life in Germany with my family, as my partner is going back to Muenster in Northwest Germany to complete his Hematology-Oncology training, and I and our two children are following. Dr. Fraser has kindly offered me a one-year sabbatical after I leave, and this will allow me to continue my mentorship of our HIV research fellows and to continue my research.

I am very excited about moving to Germany, which is a great country, and to move closer to family in Scotland, Turkey and Berlin.

I am not yet fluent in German, so I will spend a substantial part of next year trying not to murder the language and once fluent enough, will present myself for an interview at the UniveristaetsKlinikum Muenster for a position there.

I will also enjoy spending more time with my partner and our two children, Elaria (almost 3) and Oscar (1), and traveling in and around Europe and the UK.

I will certainly miss everyone here in St. Louis. You really have a brilliant city and Washington University and Barnes Jewish Hospital are amazing institutions. I have been very happy working for the division and our wonderful AIDS Clinical Trials Unit. I have learned a great deal and have been very fortunate to work with a really fantastic group of people.

You are all great and I will miss you all.



# Welcome to our 2012 fellows



## **Faisal Alasmari, M.D.**

Originally from Saudi Arabia, Faisal graduated from College of Medicine and Medical Sciences, Abha. He then joined a four year internal medicine program (King Fahad National Guard Hospital) in Riyadh City. In 2009-2010 he moved to the U.S. and joined the Mayo Clinic in Rochester, MN., where he did a certificate degree in clinical and translational

science and conducted research about surgical site infections in cardiac surgery patients.

**Why did you choose an ID fellowship?** My focus in Infectious Disease fellowship would be infection control and hospital epidemiology and infection in immune-compromised patients like transplant patients.



## **Martin Prager, M.D.**

Martin is originally from Cali, Colombia. He completed medical school at the Universidad del Valle in 2006. Martin graduated top of his class and scored among the top ten in the national medicine examinations. After medical school he worked for three years at CIDEIM (Internal Center for Medical Research) in the area of

Cutaneous Leishmaniasis. His research topic was therapeutic and diagnostic alternatives for adult and pediatric populations affected by Cutaneous Leishmaniasis. In 2012, he completed his training in Internal Medicine at the University of Miami as part of the William J. Harrington Program.

**Why did you choose an ID fellowship?** I chose Infectious Diseases because I find fascinating the interaction between microorganisms and humans. My special interests are parasitic infections and medical microbiology.



## **Benjamin Thomas, M.D.**

Originally from Tennessee, Ben spent most of his adult life in Georgia, where he attended high school, college (Georgia Tech), and medical school (Mercer University School of Medicine). He completed his internal medicine residency at the University of Hawaii. During residency, he received awards for "Excellence in Ambulatory Medicine" and "Excel-

lence in Research". As a resident, he conducted a prospective study on severe cellulitis and necrotizing fasciitis as well as a retrospective

study on airborne isolation in tuberculosis patients. His research endeavors as a resident were fruitful and have so far resulted in publication of two case reports, two letters, and one clinical image.

**Why did you choose an ID fellowship?** I have an interest in hospital epidemiology, infection control, and antimicrobial stewardship and would like to pursue research in these areas as a fellow here.



## **Sergio Trevino Castillo, M.D.**

Sergio is originally from Monterrey, Mexico, where he graduated from the Escuela de Medicina Tec de Monterrey. He completed a residency in Internal Medicine at Baylor College of Medicine, in Houston, TX. At Baylor he received teaching and clinical awards including the "Dean of Education Teaching Excellence Award", "Outstanding

Resident Teacher Award", and "Clinical Excellence in Ambulatory Care Award". During his time there as a resident, he also was elected to become a member of the "Alpha Omega Alpha Honor Medical Society".

**Why did you choose an ID fellowship?** I chose Infectious Diseases as a specialty because of the diverse and complex nature of it. The result of the interaction between the host organism, the offending organism, and the antimicrobials we administer determine the outcome. I find this fascinating. I am very interested in Infection Prevention/Healthcare Associated Infections, and how environmental factors also play a role in that interaction.



## **Cristina Vazquez Guillamet, M.D.**

Originally from Bucharest, Romania, Cristina graduated from the Carol Davila University of Medicine and Pharmacy in Bucharest. She completed her residency at Yale University - Bridgeport Hospital and

a Critical Care Medicine fellowship at Stanford University. She has received two travel awards from the American Thoracic Society, winner of jeopardy in medical knowledge at AGS, and a residency award for outstanding leadership and scholarship.

**Why did you choose an ID fellowship?** I like the complicated, fast-paced medicine that is involved in caring for critically ill and transplant patients. It feels similar to discovering new entities in infectious diseases: new viruses, old ubiquitous fungi causing serious infections. I'm also interested in finding and understanding the differences between colonizers and true pathogens and improving empirical antibiotic therapy in critical situations.

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# Dr. Powderly to Co-direct ID Division

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## **William G. Powderly, M.D., FRCPI**

William G. Powderly, MD, will lead global health initiatives as a newly appointed deputy director of Washington University's Institute of Public Health. He also will serve as co-director of the Division of Infectious Diseases in the Department of Medicine at the School of Medicine.

Dr. Powderly, a highly regarded specialist in infectious diseases, has a long history with Washington University. He started his career at the School of Medicine in the 1980s and later served as co-director of the Infectious Diseases Division and Principal Investigator of the AIDS Clinical Trials Unit.

In 2004, Dr. Powderly returned to his native Ireland, becoming head of the Department of Medicine at University College Dublin School of Medicine. He was named dean of that medical school in 2005, and during his tenure there, Dr. Powderly has greatly expanded the medical school's international activities, especially in Malaysia and China.

Dr. Powderly has served in a number of leadership roles in his field, including as vice chair of the U.S. AIDS Clinical Trials Group and chair of its scientific steering committee. He has been a member of numerous advisory groups on HIV and infectious diseases for the National Institutes of Health (NIH) and the U.S. Centers for Disease Control and Prevention. He also was the first chairman of the HIV Medicine Association.

Dr. Powderly is the author of more than 300 scientific journal articles and book chapters on HIV and AIDS. He is a fellow of the Infectious Diseases Society of America, the Royal College of Physicians of Ireland, and the American Association for the Advancement of Science.

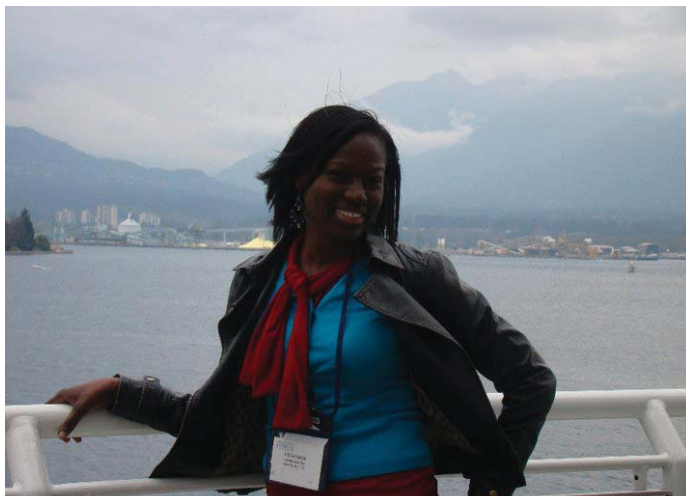
In coming back to Washington University, Dr. Powderly also will hold an endowed chair, the J. William Campbell Professorship, and lead the clinical activities of the infectious diseases faculty and fellows. His new appointments are effective Jan. 1, 2013.

Modified from the original publication in the Washington University *Record*



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## Welcome... Uzoamaka A. Eke, M.D.



### **Uzoamaka A. Eke, M.D., Instructor in Medicine**

I was born in South-Eastern Nigeria and received my medical degree from Nnamdi Azikiwe University, Nnewi, Anambra state, Nigeria. I subsequently moved to New York City where I completed my internal medicine residency training at Long Island College Hospital, Brooklyn followed by an infectious diseases (ID) fellowship at the University of Connecticut, which I completed in June 2012.

My coming to St. Louis was prompted by my husband's acceptance to the OB/GYN residency program at Washington University School of Medicine. It is so exciting for me to join the ID faculty here at Wash U. My research interests include MRSA susceptibility patterns including Vancomycin intermediate Staphylococcus aureus (VISA) as well as hetero-resistant VISA (hVISA), healthcare epidemiology and HIV. My main passion however is in taking care of patients.

I sincerely look forward to having a great time here.