SIMON MALLAL, M.B.B.S.

PROFESSOR, MEDICINE AND PATHOLOGY MICROBIOLOGY/IMMUNOLOGY

MAJOR E.B. STAHLMAN CHAIR IN INFECTIOUS DISEASES

DIRECTOR, CENTER FOR TRANSLATIONAL IMMUNOLOGY AND INFECTIOUS DISEASES

DIRECTOR, INSTITUTE FOR IMMUNOLOGY AND INFECTIOUS DISEASES, MURDOCH UNIVERSITY, WESTERN AUSTRALIA

Simon Mallal completed his training in Internal Medicine, Clinical Immunology and Pathology and led the development of HIV services and one of the first computerized cohort studies in Western Australia before undertaking a post-doctoral fellowship in Infectious Diseases at Johns Hopkins Medical School.

Dr. Mallal has undertaken clinical practice management altering research throughout his career, which has informed and directed his basic science research. This has had impacts over time in the domains of: reproductive endocrinology (1978 – 82), genetic disease association studies (1987 – present), immune restoration disease in HIV (1994 onwards), improved efficacy of antiretroviral therapy (1988 onwards), mitochondrial toxicity and metabolic complications of antiretroviral therapy (1997 on), use of pharmacogenetic tests to avoid drug hypersensitivity (2002 on) and HIV and Hepatitis C adaptation to HLA restricted immune responses to support vaccine immunogen design and potential eradication approaches.

Dr. Mallal's group discovered the association between HLA-B*5701 and abacavir hypersensitivity in 2002 and he and his colleagues championed the international collaborative efforts to guide pharmacogenetic screening through the T1 to T4 phases of translation over the next seven years. The impact on clinical and healthcare practice and policy in these domains has been important, as has the development of new multidisciplinary capacity and approaches to translational medicine. This culminated in the establishment of a purpose-built translational medicine Institute in Western Australia, which he leads.

Dr. Mallal serves on several international scientific committees and advisory boards and received the Western Australian Premiers Science Award in 2006.

He first visited Vanderbilt as a Pfizer Visiting Professor in 2002 and continued to actively collaborate with colleagues here until he joined the Faculty in 2013.

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VANDERBILT CUTTING-EDGE DISCOVERY

BORDEN LACY, PH.D.
JAMES CROWE, JR., M.D.
SIMON MALLAL, M.B.B.S.

FROM BENCH TO BEDSIDE

MAY 22, 2014
4:00 P.M.
208 LIGHT HALL

VANDERBILT UNIVERSITY
MEDICAL CENTER

BORDEN LACY, PH.D.

ASSOCIATE PROFESSOR, DEPARTMENTS OF PATHOLOGY, MICROBIOLOGY, AND IMMUNOLOGY AND BIOCHEMISTRY, VANDERBILT UNIVERSITY MEDICAL CENTER

Borden Lacy started her independent faculty career at Vanderbilt in 2006 and is currently an Associate Professor in the Department of Pathology, Microbiology, and Immunology and the Department of Biochemistry. Her research program is focused on developing mechanistic insights into the way bacterial protein toxins contribute to infectious disease.

Dr. Lacy conducted graduate training in the method of X-ray crystallography, elucidating the first crystal structure of botulinum neurotoxin in the laboratory of Professor Ray Stevens. She then spent six years as a postdoctoral fellow in Professor John Collier's group at Harvard Medical School. While there, she made contributions toward the understanding of anthrax toxin cellular entry through studies aimed at receptor-binding, pore formation, and enzymatic protein delivery.

Since joining Vanderbilt, Dr. Lacy has developed three programs to further investigate the structure and function of bacterial protein toxins: a study of the complexes that contribute to the oral bioavailability of botulinum neurotoxin, an investigation of the receptor-binding and pore forming properties of the Helicobacter pylori vacuolating toxin, VacA, and an effort to understand the structures and distinct virulence properties of the Clostridium difficile toxins. Common questions involve understanding how a toxin is delivered from the bacterium to the host, how the toxin recognizes specific cells and tissues within the body, what cellular functions are perturbed by the presence of the toxin, and how the toxin can be targeted for therapeutic development. Providing answers to these questions is done through a combination of structural, biochemical, and cell-based functional methods.

Dr. Lacy has received a number of awards and honors, including postdoctoral fellowships from the Helen Hay Whitney Foundation and the Charles King Trust. She is currently a Burroughs Wellcome Investigator in the Pathogenesis of Infectious Disease, and in 2014, she will receive the Margaret C. Etter Early Career Award from the American Crystallographic Association.

JAMES CROWE, JR., M.D.

DIRECTOR, VANDERBILT VACCINE CENTER

ANN SCOTT CARELL CHAIR

PROFESSOR, DEPARTMENTS OF PEDIATRICS AND PATHOLOGY, MICROBIOLOGY AND IMMUNOLOGY, VANDERBILT UNIVERSITY MEDICAL CENTER

Jim Crowe came to Vanderbilt in 1995 for a final year of training, in clinical infectious diseases, and then joined the faculty in 1996 in Pediatrics. He is a viral immunologist and a board-certified pediatric infectious diseases specialist. He founded the Vanderbilt Vaccine Center in 2004 and has served as its director since.

Dr. Crowe's laboratory has a broad portfolio of work in the area of viral immunology and cell biology, with the goal to discover mechanisms important to development of new vaccines. The laboratory studies the molecular, genetic and structural basis for development of antibodies in humans that neutralize viruses. These investigators use state-of-the-art laboratory techniques in viral immunology in projects that also rely heavily on bioinformatics approaches with high throughput sequencing, and molecular modeling of structures.

Dr. Crowe has received a number of awards and honors. He is a Fellow of the AAAS, and ASCI, the American Academy of Microbiology, AAP, IDSA, APS and other elected societies. His work has been published in over 170 publications in high-quality journals including *Nature*, *Science*, *Nature Medicine*, *Proceedings of the National Academy of Sciences USA*, the *New England Journal of Medicine*, and *JAMA*. He has been the recipient of investigator awards from the March of Dimes, American Society for Microbiology, Pediatric Infectious Diseases Society, and Society for Pediatric Research. He was awarded the Daland Prize of the American Philosophical Society (2002), the Oswald Avery Award of the IDSA (2005), the E. Mead Johnson Award for Excellence in Pediatrics (2006), the Outstanding Investigator Award of the American Federation for Medical Research (2007) and the 2010 Norman J. Siegel Award of the American Pediatric Society (2010). He has received numerous Vanderbilt recognitions, including graduate Teacher of the Year award (2005 and 2008), Postdoctoral Mentor of the Year (2012), and the Chancellor's Research Award (2007).

He directs a number of service cores, including the Vanderbilt Advanced Technologies for Genomics Core, the Flow Cytometry and Cell Sorting Core, and the Immunology Core. The Vaccine Center he directs has an extensive network for research and educational programs in South America.