



FOOD & WATERBORNE DISEASES INTEGRATED RESEARCH NETWORK
IMMUNOLOGY RESEARCH UNIT

Key Staff Members:

Principal Investigator	Title	FWD IRN Role
Marcelo B. Sztein, MD msztein@medicine.umaryland.edu	<ul style="list-style-type: none"> • Professor of Pediatrics, Microbiology & Immunology & Medicine • Leader, Center for Vaccine Development Immunology Group • Chief, Cellular Immunology Section and Flow Cytometry Core Laboratory 	<ul style="list-style-type: none"> • Research Unit PI • Emergency Response Plan (ERP) Coordinator • Project Leader
Investigators		
Karen L. Kotloff, MD	<ul style="list-style-type: none"> • Professor of Pediatrics and Medicine • Chief, Community Studies Section 	<ul style="list-style-type: none"> • Project leader
Marcela F. Pasetti, MD	<ul style="list-style-type: none"> • Assistant Professor of Pediatrics • Chief, Applied Immunology Unit 	<ul style="list-style-type: none"> • Project leader • ERP Team Leader for the measurement of antibody responses and isolation of serum specimens
Lance Simpson, PhD	<ul style="list-style-type: none"> • Thomas Jefferson University Jefferson Medical College Department of Medicine Professor 	<ul style="list-style-type: none"> • Project leader
Stefanie N. Vogel, PhD	<ul style="list-style-type: none"> • Professor, Department of Microbiology & Immunology & Medicine 	<ul style="list-style-type: none"> • Project leader
Research Unit Staff		
Rosangela Mezghanni, PhD	<ul style="list-style-type: none"> • Instructor, Cellular Immunology Section, CVD Immunology Group 	<ul style="list-style-type: none"> • ERP Team Leader for isolation and cryopreservation of cells in liquid N₂

General Information:

The Immunology Research Unit (IRU) is located at the Center of Vaccine Development (CVD), University of Maryland School of Medicine on the main campus of the University of Maryland, Baltimore, Maryland.

Current and Past FWD IRN Activities:

- Sensitivity of TLR4 polymorphisms to Shigella LPS (S. Vogel, project leader)
- Immunogenicity of Tularemia Live Vaccine Strain (LVS) in Rabbits (M. Sztein, project leader)
- Pharmacokinetic Studies on Botulinum Toxin (L. Simpson, project leader)



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- Cell-mediated immunity (CMI) studies using specimens obtained in the CVD TY35000 trail entitled: "Safely and immunogenicity of two does of live oral *Salmonella enterica* serovar Typhi vaccine strain CVD 909" (M. Sztejn, project leader)
- Completion of humoral immunity measurements using specimens obtained In the Transcutaneous CVD 1000 trail entitled: "Safety, tolerability, and immunogenicity of transcutaneous immunization with *Helcobacter pylori* recombinant urease plus *Echerichia coli* heat labile toxin adjuvant in healthy adults" (M. Sztejn, K. Kotloff, M. Pasetti, project leaders)

FWD IRN Mission and Expertise:

This Research Unit has capacity and extensive expertise in innate, humoral, and cell-mediated immunology in the context of infectious diseases. The RU has advanced technologies such as state-of-the-art Beckman-Coulter EPICS ELITE and MoFlow Cytomation polychromatic flow cytometry/cell sorter systems, and can measure antibody levels for several NIAID Category A and B priority pathogens in its biosafety level 2 facility.

The Immunology Research Unit has specific expertise to:

- Collect, store, and ship a large number of blood samples
- Cryopreserve cells and sera
- Perform measurements of serum IgM, IgG and IgA, to viral or bacterial antigens from Class A and B priority pathogens, as well as other infectious agents.
- Measure B cell responses, including serum and mucosal antibodies, antigen-specific antibody secreting cells, viral neutralizing antibodies, vibriocidal and bactericidal antibodies for enteric pathogens
- Measure a wide array of cell-mediated immune responses, including, among others, phenotypic and functional analysis of lymphocyte and antigen-presenting cell populations by polychromatic flow cytometry, proliferative responses and cytokine production to specific antigenic stimulation and cytotoxic T cell activity

Current Collaborators:

- Thomas Jefferson University
- Middle Atlantic Regional Center of Excellence for Biodefense and Emerging Infections

Links:

Center for Vaccine Development (CVD) (<http://medschool.umaryland.edu/CVD/>)