In Vitro Pharmacodynamics Fellowship in Infectious Diseases Pharmacotherapy

Post- Doctoral Fellowship Program
Rhode Island Infectious Diseases (RIID) Research Program

University of Rhode Island (URI) College of Pharmacy, Kingstown, RI
Veterans Affairs Medical Center (VAMC), Providence, RI
Warren Albert School of Medicine, Brown University, Providence, RI

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Research Building #35 - room 208
830 Chalkstone Avenue
Providence, RI 02908

Laboratory: Veterans Affairs Medical Center (151)
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830 Chalkstone Avenue
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Program Description:
The RIID Infectious Diseases Research Program is focused on the prevention, treatment, virulence inhibition and outcomes associated with drug resistant bacteria. The program is divided into two divisions, the in vitro division and the clinical outcomes division. The clinical outcomes division offers a fellowship focused on antimicrobial stewardship, whereas the in vitro component is laboratory based. The program is located in the State of Rhode Island, at the Providence Veterans Affair Medical Center and the College of Pharmacy at the University of Rhode Island.

The program is directed by Kerry LaPlante, Pharm.D. who has over 10 year experience, and has authored more than 75 peer-reviewed journal articles, abstracts and textbook chapters in this area of research. Dr. LaPlante is a tenured associate professor of pharmacy at the University of Rhode Island and an adjunct associate professor at the Warren Alpert Medical School at Brown University. Her clinical practice site is at the Providence VAMC where she serves as an infectious diseases pharmacotherapy specialist consultant.

IN VITRO FELLOWSHIP
The in vitro division was developed in 2004, and has received uninterrupted funding from the NIH, VA, Rhode Island foundation grants and investigator initiated research from pharmaceutical industry. The focus of the fellowship is in the treatment, virulence inhibition, control and prevention of methicillin-resistant Staphylococcus aureus (MRSA) and other pathogenic drug resistant bacteria. Laboratory experiments are directed towards discovery of new knowledge in biofilm prevention and treatment, Antibiotic Lock Therapy (ALT), pharmacodynamic interactions of combination therapy, infection control and decolonization of MRSA and high throughput screening of novel agents (natural products and synthetic) that possess antimicrobial activity.

The research environment is conducive to scholarly work. The fellow will receive formal training in both laboratory and clinically based research. Laboratory training will allow for the understanding and
implementation of in vitro infectious diseases research including but not limited to, pharmacodynamic and pharmacokinetic modeling, molecular technologies, and statistical analysis. All research will include development of a research project and experience in Investigational Review Board (IRB). The fellow is responsible for submitting research proposal to the VAMC Institutional Review Board (IRB; human), and Research and Development Board (R&D).

Affiliates: Leonard A. Mermel, DO, ScM, AM (Hon), FACP, FIDSA, FSHEA
Medical Director, Dept. of Epidemiology & Infection Control, Rhode Island Hospital and Professor of Medicine, Brown Medical School
Focus: Antimicrobial lock therapy, infection control and prevention.

David C. Rowley, PhD,
Associate Professor and Natural Products Chemist
University of Rhode Island, University of Rhode Island.
Focus: Natural products discovery and development isolated from marine organisms.

Current Trainees: Keiko Tarquinio, MD,
Pediatric Critical Care Medicine at Hasbro Children's Hospital
Award: Scholar in the Pediatric Critical Care Scientist Development Program
Title: Analysis of P. aeruginosa Biofilm on Nano-modified Endotracheal Tubes.
Funded January 2011-December 2012

Megan Luther, Pharm D
In vitro Pharmacodynamic Fellow (2012-14)

Fellowships available: Two year T-32 funded fellowships available to post graduate Pharm.D, PhDs and MD.

General Description/ Educational Purpose of Fellowship:

Two-year fellowships are available in both the in vitro program, and the outcomes component of this program. The program is designed to provide skills that are necessary to pursue a career in academia, clinical research and basic clinical practice focused in infectious diseases. The program integrates a formal hands-on laboratory experience (80%), teaching both in the classroom and experiential (10%), and practical clinical experience for the Infectious Disease Consult team (10%). A major focus of this program is in research design, development, analysis and writing for final publication. Fellows are responsible for submitting their research to national and international infectious diseases meetings and submitting their papers to peer reviewed journals for publication.

Teaching
The fellows will have several opportunities for teaching. The requirement will encompass classroom teaching at the University of Rhode Islands College of Pharmacy, Noon conference (given to Brown University medical students, interns, residents and staff), and assisting in precepting the 6th year Pharm.D. students during their Infectious Diseases experiential rotation.

Benefits
Fellows receive a competitive stipend that includes full medical and dental coverage (signal or family coverage). Additional benefits include paid membership in the Society of Infectious Diseases Pharmacy (SIDP) and American Society of Microbiology (ASM), book stipends, and paid expenses for professional meetings, fellow forums and conferences.
Qualifications

- Pharm.D. degree or RPh. with clinical inpatient internal medicine experience, Ph.D., MD or DO.
- For the Clinical Outcomes fellowship, applicants are encouraged to have completed a general practice or specialty residency with strong focus on inpatient medicine.
- Licensed pharmacist (or eligible) in the state of Rhode Island.
Biography
Kerry L. LaPlante, Pharm.D.

Associate Professor of Pharmacy with Tenure
University of Rhode Island (URI), College of Pharmacy, Department of Pharmacy Practice

Adjunct Clinical Associate Professor of Medicine
Warren Alpert Medical School of Brown University, Department of Medicine of the Division of Biology and Medicine and Infectious Diseases, Brown University, Providence, RI

Director of the Infectious Diseases Research Program and Infectious Diseases Pharmacotherapy Specialist, Providence Veterans Affairs Medical Center, Providence, RI

Research Expertise:
Infectious Diseases in vitro division (2004 present)
- Methicillin Resistant Staphylococcus aureus (MRSA)
- Biofilm and toxin production in MRSA
- Pharmacodynamic interactions of combination therapy
- Antibiotic lock Therapy (ALT)
- Infection control and decolonization of MRSA
- Investigating novel agents for activity against gram positive pathogens

Anti-infective Outcomes Research Division (2008 to present):
- Pharmacoepidemiologic Research
  - Comparative Effectiveness Research/Studies
  - Outcomes Research/Studies
  - Risk Factors Research/Studies
  - Drug Utilization Research/Studies
  - Drug Safety Research/Studies
  - Infectious Disease Epidemiologic Research/Studies

Research Summary: Dr. LaPlante is currently an Associate Professor of Pharmacy with tenure at the University of Rhode Island’s College of Pharmacy and an Adjunct Clinical Associate Professor of Medicine at the Warren Alpert Medical School of Brown University. She is also the Director of the Infectious Diseases Research Program, and an Infectious Diseases Pharmacotherapy Specialist, at the Providence Veterans Affairs (VA) Medical Center.

She completed her Doctor of Pharmacy (2002) and Post-Doctorial Fellowship (2004) in infectious diseases/pharmacotherapy at Wayne State University in Detroit Michigan. She is nationally recognized for her work in the treatment, virulence inhibition, control and prevention of methicillin-resistant *Staphylococcus aureus* (MRSA) where she has authored more than 75 peer-reviewed journal articles, abstracts and textbook chapters. Her program has recently expanded to include an outcomes component, which focuses on antimicrobial stewardship and comparative effectiveness research using the National Veterans Affairs Database databases.

Her laboratory is located at the Veterans Affairs Medical Center in Providence, Rhode Island and is funded by the National Institutes of Health (NIH), VA, and several investigator initiated grants from the pharmaceutical industry. Since her independent research career began in 2004 she has been successful at securing uninterrupted funding. She has published several book
chapters and over 30 papers and letters in peer-reviewed journals such as *Antimicrobial Agents and Chemotherapy*, *Expert Opinion in Pharmacotherapy*, *Diagnostic Microbiology and Infectious Disease*, *Pharmacotherapy*, *Bioorganic & Medicinal Chemistry*, *Journal of Hospital Infection* and *the New England Journal of Medicine*. Her research has been presented in Denmark, France, the Czech Republic and throughout the United States.

Dr. LaPlante also serves the profession as a section editor in Infectious Diseases, for the journal *Pharmacotherapy*; she also holds membership and participation in a number of organizations, and as a reviewer of manuscripts for *Antimicrobial Agents and Chemotherapy*, *The Journal of Antimicrobial Chemotherapy*, *Pharmacotherapy*, and *Diagnostic Microbiology and Infectious Diseases*. She serves her University and College as a Faculty Senator, and is Chairperson for the College’s Strategic Steering Committee. Dr. LaPlante is a member of many professional societies within pharmacy and infectious disease groups and serves as an expert consultant for several pharmaceutical and device related companies.
Dr. Kerry LaPlante’s multi-faceted research in infectious diseases centers on the treatment, virulence inhibition (toxin and biofilm), colonization and control of methicillin-resistant Staphylococcus aureus (MRSA). Improper use of antibiotics poses a critical threat to our ability to effectively treat infections. Antibiotic misuse—i.e. when antibiotics are given when they are not needed, are continued when they are no longer necessary, or are given as the wrong dose—leads to emergence and spread of resistant bacteria. Antimicrobial resistance is associated with serious consequences, including the development of healthcare-acquired infections. Each year, 1.7 million healthcare-acquired infections occur. Moreover, these infections are associated with billions of dollars in healthcare costs and tens of thousands of deaths each year. Dr. LaPlante’s research utilizes in vitro pharmacokinetic/pharmacodynamic modeling, antimicrobial stewardship, outcomes-based pharmacoepidemiology research, and evaluation of prospective antimicrobial drugs to hone the proper use of antibiotics.

Dr. LaPlante is Director of the Infectious Disease Research Program and Infectious Disease Pharmacotherapy Specialist at the Providence VAMC. Working closely with Medical Center leadership, she designed a Post-Doctoral Clinical Research Outcomes Fellowship Program in Antimicrobial Stewardship, one of only three in the country, and additionally directs an In Vitro Pharmacokinetic/Pharmacodynamic Research Fellowship. Dr. LaPlante is an Associate Professor of Pharmacy with Tenure at the University of Rhode Island, College of Pharmacy, and Adjunct Clinical Associate Professor of Medicine at the Warren Alpert Medical School of Brown University. She is nationally-recognized for her work in the treatment, control, and prevention of MRSA, where she has authored more than 88 peer-reviewed journal articles, textbook chapters, and abstracts presented at national and international meetings. She is published in peer-reviewed journals such as Antimicrobial Agents and Chemotherapy, Pharmacotherapy, Expert Opinion in Pharmacotherapy, and Diagnostic Microbiology and Infectious Disease and her research has been presented in Denmark, France, Czech Republic and throughout the United States.

Dr. LaPlante graduated in 1996 from Canisius College in Buffalo with a B.S. in Biology, and in 2002 from Wayne State University in Detroit with a B.S. in Pharmaceutical Sciences and a Doctorate of Pharmacy. She then completed the Infectious Diseases Pharmacotherapy Post-Doctoral Fellowship at Wayne State University and joined their faculty as a clinical instructor and research associate in 2002.