Post-Doctoral Clinical Research Outcomes Fellowship Program in Antimicrobial Stewardship 
Rhode Island Infectious Diseases (RIID) Research Program

Veterans Affairs Medical Center (VAMC), Providence, RI 
Funded Fellowship, in conjunction with, 
University of Rhode Island (URI) College of Pharmacy, Kingstown, RI 
and the 
Warren Albert School of Medicine, Brown University, Providence, RI

Fellowship Director: Kerry LaPlante, Pharm.D.

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Program Description:
The outcomes research division offers a fellowship focused on clinical outcomes and antimicrobial stewardship. The program is located in the State of Rhode Island, at the Providence Veterans Affair Medical Center in conjunction with the University of Rhode Island College of Pharmacy.

The program is directed by Kerry LaPlante, Pharm.D. who has over 10 years of experience in infectious diseases, and has authored more than 88 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 of Medicine at the Warren Alpert Medical School at Brown University. Her clinical practice site and research program is at the Providence VAMC where she serves as an infectious diseases pharmacotherapy specialist consultant.

Clinical Goals:

- To become an independent pharmacy practitioner with a wealth of knowledge of the epidemiology and treatment of infectious diseases.
- To successfully serve healthcare organizations as the ultimate resource for information about anti-infectives including leadership in formulary decision-making for anti-infectives.
Research Goals:

- To contribute to clinical, humanistic and economic outcomes analyses through infectious diseases pharmacy research.
- To employ knowledge acquired through experiential training, conduct infectious diseases practice research using effective research design and management skills by formulating a hypothesis, creating a feasible design for research projects, and utilizing appropriate statistical methods to interpret data.
- To effectively present the results of research, successfully employ accepted manuscript style for final research report, and secure publication of research results.

Essential functions:

1. Maintain up-to-date knowledge in infectious diseases pharmacotherapy, and provide expert consultation with other healthcare professionals in development of pharmacotherapy plans for patients as appropriate.

2. Participate in objective evaluation and dissemination of medication use trends and pharmacoeconomic/clinical outcomes information for appropriate areas throughout the system.

3. Coordinate, support, and participate in research, research protocol review, and research development related to the specialty area. Prepare grant proposals for funding of research. Publish original research articles, and present at local and national functions relevant to practice area.

4. Master understanding, application, and relevance of an ASP to an organization and ultimately in the delivery of safe, effective patient care.

5. Promote and develop the application of antimicrobial stewardship strategies to reinforce practice infrastructure within Providence VAMC

6. Teach pharmacy, medical, nursing, and other personnel where appropriate. Co-precept clinical clerkship students and residents participating in practical experience training programs.

7. Perform other functionally-related duties as assigned.

THE OUTCOMES FELLOWSHIP - BACKGROUND

The Outcomes Research Division began in 2008, and is focused on Pharmacoepidemiologic Research, including a major focus upon Comparative Effectiveness, Outcomes, Risk Factors and Infectious Disease Epidemiologic Research. A larger focus of this program is in the area of antimicrobial stewardship.

Associate Director of Outcomes Research
Division: Aisling Caffrey, M.S., Ph.D.
Assistant Professor of Pharmacoepidemiology, College of Pharmacy, University of Rhode Island and Investigator, Infectious Diseases Research, Providence VA Medical Center
Fellowships: Two-year funded fellowships in Antimicrobial Stewardship are available to a post graduate Pharm.D.

Associate Director of Clinical Medical Training

Antimicrobial Stewardship and Outcomes research fellowship
During the two-year program, the fellow will be responsible for providing Clinical Infectious Diseases Pharmacotherapy, Pharmacokinetics, and Antimicrobial Stewardship services to the VAMC hospital and Infectious Diseases consult team for approximately 4 months per year (25% effort). In order to provide a well-rounded clinical experience, there is opportunity for the fellow to participate on the Antimicrobial-Sub Committee, and Infection Control Committee at the Providence VAMC. Participation on these committees is not required, but will be based upon current research projects in areas of Antimicrobial Stewardship and Infection Control.

The fellow is responsible for the development and completion of a research project and for the submission of research proposals to the VAMC Institutional Review Board (IRB; human), Safety Committee, and Research and Development Board (R&D).

General Description/ Educational Purpose of Fellowship 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 research 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 R.Ph. with clinical inpatient internal medicine experience, or Ph.D., M.D. or D.O.
- For the Clinical Research Outcomes fellowship, applicants are encouraged to have completed a general practice or specialty residency with a strong focus on inpatient medicine.
- Licensed pharmacist (or eligible) in the state of Rhode Island.
Biography
Kerry L. LaPlante, Pharm.D., Program Director

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
  - Outcomes Research
  - Risk Factors Research
  - Drug Utilization Research
  - Drug Safety Research
  - Infectious Disease Epidemiologic Research

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 Rhode Island Infectious Diseases Research Program, and an Infectious Diseases Pharmacotherapy Specialist, at the Providence Veterans Affairs 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 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 data systems.

Her laboratory is located at the Veterans Affairs Medical Center in Providence, Rhode Island and is funded by the 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 England, 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. 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.
Dr. Morrill, Pharm.D. graduated from the University of Connecticut School of Pharmacy in 2011, and subsequently completed a PGY-1 pharmacy practice residency at the Providence Veterans Affairs Medical Center (PVAMC). She is currently an Antimicrobial Stewardship Fellow at the PVAMC and University of Rhode Island, under the direction of Kerry LaPlante, Pharm.D. Dr. Morrill rounds daily with the Providence VA Medical Center Antimicrobial Stewardship Team. Dr. Morrill audits all inpatient antimicrobial use at the PVAMC. Other daily stewardship responsibilities include development and dissemination of educational initiatives, development and ongoing review and update of local treatment guidelines/clinical pathways, and documentation and analysis of stewardship interventions, antibiotic usage and patient outcomes. Dr. Morrill serves as the pharmacy representative to the Infection Control Committee, Pharmacy and Therapeutics Committee, and Antibiotic Subcommittee. Additionally, Dr. Morrill is a member of the Educational Subcommittee of the VA National Antimicrobial Stewardship Taskforce. Dr. Morrill assists in precepting and instructing University of Rhode Island College of Pharmacy APPE students and has provided didactic lectures to second year professional students. Dr. Morrill has submitted three protocols that have been approved by the PVAMC Institutional Review Board and the Research and Development Committee. Lastly, Dr. Morrill has assisted in writing three grants and multiple papers for submission to peer-reviewed journals.

Travel and presentations:
Dr. Morrill has presented her research on AMS at New England Pharmacists convention (September 2012) where she was awarded 1 place in a resident/student competition, MAD-ID (May 2012) where she was awarded a $500 travel scholarship, ICAAC in San Francisco (September 2012), and has submitted her research to ECCMID in Berlin(April 2013).

Additional Research
- Addressing Educational and Coordination Barriers for Adult Pneumococcal Disease Prevention in Rhode Island
- The Effects of Obesity on the Comparative Effectiveness of Linezolid and Vancomycin in methicillin-resistant Staphylococcus aureus Pneumonia.
- Burden of pneumococcal disease in a national cohort of adults 50 years and older: focus on incidence and prevalence of disease comorbidities

Non-peer reviewed publications:
- Morrill HJ, LaPlante KL. Overcoming barriers to antimicrobial stewardship through the utilization of pharmacy residents and students. MAD-ID Newsletter. Fall 2012.

Peer Reviewed Manuscripts in progress:
- Morrill HJ, Dworkin JD, LaPlante KL. Use of medical and pharmacy trainees as a conduit for an antimicrobial stewardship program at a small teaching hospital.
- Caffrey AR, Morrill HJ, Laplante KL. Predictors of Clinical Success among a National Veterans Affairs (VA) Cohort with Methicillin-Resistant Staphylococcus aureus (MRSA) Pneumonia.
- Caffrey AR, Morrill HJ, Laplante KL. Comparative effectiveness of linezolid and vancomycin among a national cohort of Veterans Affairs (VA) patients with methicillin-resistant Staphylococcus aureus (MRSA) pneumonia.
The organizing themes of Dr. Caffrey's research program include pharmacoepidemiologic methodology and infectious disease pharmacoepidemiology. Multiple treatment options often exist for the same medical condition. Unfortunately, selecting the most appropriate therapy can be complicated by limited efficacy and effectiveness data. National initiatives have focused on the identification and implementation of evidence-based healthcare practices that optimize positive clinical outcomes. However, bias is a major concern in clinical trials and observational studies evaluating comparative effectiveness and safety, particularly selection bias and confounding as they affect the comparability of patients in different treatment groups. Dr. Caffrey's work focuses on identifying and implementing advanced analytic methods to control for confounding by indication in comparative effectiveness research.

Dr. Caffrey is Director of Outcomes Research for the Rhode Island Infectious Diseases (RIID) Research Program of the Providence Veterans Affairs Medical Center and University of Rhode Island College of Pharmacy, where she is engaged in interdisciplinary infectious diseases research. Dr. Caffrey applies advanced epidemiologic and pharmacoepidemiologic methods to the study of infections caused by dangerous bacterial pathogens. There is a critical need for active comparator trials and comparative effectiveness research in light of present day efforts to increase antimicrobial drug development and extend the life of the current antimicrobial pipeline as multi-drug resistance increases. As such, the objective of her research program is to quantify the benefits and harms of antibiotics in real-world clinical practice.

Dr. Caffrey earned an M.S. degree in Epidemiology with a concentration in Infectious Diseases from the State University of New York at Albany in 2005, as well as a B.A. in Psychology and Spanish Linguistics in 2003. She went on to pursue her Ph.D. in Pharmacoepidemiology and Pharmacoconomics from the University of Rhode Island in 2009. She then completed a Post-Doctoral Fellowship in Infectious Disease Pharmacoepidemiology at the Providence VA Medical Center in Rhode Island, during which she led the development of numerous research projects and successfully applied for a Veterans Affairs New England Healthcare System Early Career Development Award. She was recognized for her post-doctoral work in infectious diseases by the American Society of Microbiology as an Infectious Disease Fellow of the 50th Interscience Conference on Antimicrobial Agents and Chemotherapy in 2010. She has authored 8 original research publications and 22 poster and platform presentations at international meetings.