

## Potential Research Concepts for VetSRA Summer 2025

Faculty were invited to provide research ideas, and they are listed below. We will update this list as additional ideas are received by our office. Even if we have not received research ideas from a faculty member it does not mean that they are unavailable to supervise a student. Students are encouraged to reach out to any faculty member that does research in an area of the students' interest.

Faculty Mentor	Faculty Email Address	Research Topic
<b>Department: Biomedical Sciences</b>		
Dr. Jay Penney	<a href="mailto:jaypenney@upei.ca">jaypenney@upei.ca</a>	<b><i>Understanding a Parkinson's disease-causing mutation using stem cell-based models.</i></b> Mutations in the protein RAB32 were very recently identified to cause Parkinson's disease. This project will use human stem cell culture models to understand the effects of RAB32 mutations on microglia, an innate immune cell type found in the brain.
Dr. Paul Bernard	<a href="mailto:pbernard@upei.ca">pbernard@upei.ca</a>	<b><i>The impact of ultrasonic noise on animal welfare.</i></b> Environmental acoustics beyond the human hearing range ("ultrasonic noise") are pervasive in the home environment of most domesticated animals. This project seeks to: 1. Identify these acoustics. 2. Assess the impact of ultrasonic noise on animal welfare. 3. Develop mitigation strategies to minimize exposure.
<b>Department: Companion Animals</b>		
Dr. Oriana Raab Dr. Lara Cusack	<a href="mailto:oraab@upei.ca">oraab@upei.ca</a> <a href="mailto:lcusack@upei.ca">lcusack@upei.ca</a>	<b><i>Evaluation of bird collisions with windows on the University of Prince Edward Island Campus</i></b> Up to 42 million birds are estimated to die each year in Canada from collisions with windows. The University of Prince Edward Island has undergone expansion in recent years with the completion of several new buildings on campus. These structures, particularly the new school of medicine building, have design features linked to high frequencies of fatal bird collisions such as unobstructed reflective windows abutting bird habitat. The goal of this project will be to evaluate the incidence of bird collisions on campus, particularly during peak migration season.
<b>Department: Health Management</b>		
Dr. Ben Stoughton	<a href="mailto:wbstoughton@upei.ca">wbstoughton@upei.ca</a>	<b><i>Biosecurity Strategies to Manage the Prince Edward Island Equine Arteritis Virus Outbreak</i></b> Equine viral arteritis (EVA) is a contagious disease causing significant economic losses through abortions, death in young foals and persistent stallion infections. Currently, the prevalence of persistently infected stallions on PEI is high and most farms do not have herd immunity. Project aims include implementing outreach, surveillance, and mitigation strategies to aid the equine Standardbred breeding industry.

Dr. Caroline Ritter	<a href="mailto:carolineritter@upei.ca">carolineritter@upei.ca</a>	<p><b><i>Understanding antimicrobial use on dairy farms</i></b>  This project will analyze interviews that were conducted with dairy farmers and veterinarians. The focus of the interviews is decision-making around antimicrobial use for dry cow therapy and clinical mastitis, including the application of standard operating procedures.</p>
Dr. Jason Stull	<a href="mailto:jstull@upei.ca">jstull@upei.ca</a>	<p><b><i>Utility of ATP bioluminescence to inform effective cleaning and disinfection in small animal practice</i></b>  This project aims to determine the utility of a luminometer in measuring veterinary clinic environmental surface contamination to guide related infection control decisions. The student will work as part of a multidisciplinary team and be involved in all aspects of the project: study design, sample collection and processing, and data analysis and conclusions for implementing in clinical practice.</p>
Dr. Katy Proudfoot	<a href="mailto:kproudfoot@upei.ca">kproudfoot@upei.ca</a>	<p><b><i>Factors that affect sleep and cognition in dairy calves</i></b>  The student will aid in a research project assessing the effect of different factors, such as noise, on sleep and cognition in dairy calves. Students may help with on-farm data collection and/or watching videos on calf behaviour.</p>
Dr. Krishna Thakur	<a href="mailto:kthakur@upei.ca">kthakur@upei.ca</a>	<p><b><i>Exploring fish health issues related to aquaculture farms in Newfoundland</i></b>  A veterinary student will have the opportunity to choose from a number of data driven projects, ranging from helping on estimating diagnostic sensitivity and specificity for tests used in aquatic animal clinical decision making to understanding the dynamics of infectious disease spread among aquatic food animals. Concurrently, they will also get exposure to salmon production health management while spending several weeks of the program partnering with a NL Provincial Aquaculture Veterinarian.</p>
Dr. Javier Sanchez	<a href="mailto:jsanchez@upei.ca">jsanchez@upei.ca</a>	<p><b><i>Assessing Respiratory Pathogens in Dairy Farms</i></b>  This project will involve the molecular and phenotypic characteristics of respiratory pathogens. Genome sequencing and antimicrobial resistance analysis will be conducted to compare isolates from dairy farms in PEI.</p>
Dr. Sonja Saksia	<a href="mailto:ssaksida@upei.ca">ssaksida@upei.ca</a>	<p><b><i>One Coast Harmonization of Aquatic Health in Atlantic Canada</i></b>  A veterinary student will have the opportunity work on a multi-faceted research project involving AVC researchers, clinical aquaculture veterinarians and provincial government agencies while working towards developing best practices and regional harmonization in key areas of fish health management important to the growth and sustainability of salmon and shellfish aquaculture in Atlantic Canada.</p>

Dr. Bronwyn Crane	<a href="mailto:mbcrane@upei.ca">mbcrane@upei.ca</a>	<p><b><i>Behavioral evaluation of bulls during semen collection using electroejaculation and alternative techniques.</i></b></p> <p>The goal of this project is to better understand the effects of electroejaculation on pain and aversion in bulls through the use of facial expressions. Facial images of bulls before and during their semen collection by either electroejaculation or massage will be compared for the presence of specific expressions indicative of pain.</p>
<b>Department: Pathology and Microbiology</b>		
Dr. Lisane Ayalew	<a href="mailto:layalew@upei.ca">layalew@upei.ca</a>	<p><b><i>Characterization of Staphylococcus species isolated from canine pyoderma cases.</i></b></p> <p>Under this project the phenotypic and genotypic characteristics of Staphylococcus species isolated from the skin of healthy dogs and from dogs that developed pyoderma will be studied.</p>
Dr. Nina Germitsch	<a href="mailto:ngermitsch@upei.ca">ngermitsch@upei.ca</a>	<p><b><i>Lungworms in Nova Scotia foxes or coyotes</i></b></p> <p>The student will screen lungs and hearts of Nova Scotia foxes or coyotes to determine the lungworm infection rate.</p>
Dr. Nina Germitsch	<a href="mailto:ngermitsch@upei.ca">ngermitsch@upei.ca</a>	<p><b><i>In search of Echinococcus multilocularis in PEI wild canids</i></b></p> <p>The student will screen intestines of PEI wild canids to search for E. multilocularis.</p>
Dr. Nina Germitsch	<a href="mailto:ngermitsch@upei.ca">ngermitsch@upei.ca</a>	<p><b><i>Echinococcus canadensis in wild canids of Nova Scotia</i></b></p> <p>The student will screen intestines of Nova Scotia wild canids to search for E. canadensis.</p>
Dr. Shivani Ojha	<a href="mailto:shojha@upei.ca">shojha@upei.ca</a>	<p><b><i>Validation of a quantitative real-time PCR (qPCR) assay for the rapid detection of Salmonella species in feces and environmental samples of veterinary origin</i></b></p> <p>Salmonella species detection commercial kit will be tested for its utility in detecting low numbers of Salmonella in veterinary samples. The matrices of fecal samples of large animals (cattle and horse) and environmental samples (swiffer and drag swabs) will be used to validate the kit and the protocol. The validated method will be incorporated in the AVC bacteriology diagnostic services laboratory to offer it as Salmonella diagnostic test to the veterinary clinicians</p>
Dr. Shivani Ojha Dr. Megan Jones	<a href="mailto:shojha@upei.ca">shojha@upei.ca</a> <a href="mailto:mejones@upei.ca">mejones@upei.ca</a>	<p><b><i>The fecal microbiome of Atlantic Canada wildlife</i></b></p> <p>Molecular analyses of fecal microbiome of dead wildlife animal species will be performed using 16S rRNA and 18S rRNA sequences. It is thought that the findings of this study will aid in understanding the diversity and the role of gut microbiome in wildlife ecology, health, and conservation.</p>

Dr. Mark Fast	<a href="mailto:mfast@upei.ca">mfast@upei.ca</a>	<p><b><i>Dynamic Thermoregulation in fish</i></b></p> <p>Recently it has been shown that fish naturally respond to infection through dynamic changes in thermal selection. Specifically, this has promoted faster bacterial killing without any additional treatments, more efficient control of inflammation and improved capacity for tissue repair. Thus, thermoregulation offers a natural, drug-free, sustainable strategy for fish protection that is accessible to low-income countries. During the summer we will examine optimal temperature shifts for Atlantic salmon to respond to infection and vaccination, with an opportunity for the student to assess these responses using molecular immunology.</p>
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