

Potential Research Concepts for VetSRA Summer 2024

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
Department: Biomedical Sciences		
Dr. Paul Bernard	pbernard@upei.ca	<i>Do deficits in auditory communication underlie social abnormalities associated with autism? Funded by the National Institute of Health (NIH)</i> It is unknown if abnormal auditory communicative function contributes to the social deficits associated with autism spectrum disorders. A behavioral testing paradigm to thoroughly assess auditory communicative deficits associated with neurodevelopmental disorders is lacking. Goal: We will develop a behavioural test battery to assess auditory communication in clinically relevant rodent models of autism. Our studies may suggest that targeting auditory processing is a viable strategy to rescue social deficits associated with autism.
Dr. Paul Bernard	pbernard@upei.ca	<i>Ultrasonic vocalizations: A non-invasive ethologically relevant tool to assess home cage welfare in rats</i> We propose to monitor rat ultrasonic vocalization frequency and call pattern, as an ethologically sensitive measure to assess rat welfare in various levels of home cage enrichment. We will compare this novel method of assessing home cage rodent stress/welfare to a traditional metric of rodent stress; fecal cortisol levels. Demonstrating that ultrasonic vocalizations can be used to assess home cage wellbeing will be a major advance in laboratory animal care.
Department: Companion Animals		
Dr. Stephanie Hamilton	smhamilton@upei.ca	<i>The "greening" of Clinical Skills V (junior surgery)</i> This project will quantify the environmental impact of live animal labs at AVC and then examine processes to improve the sustainability of the laboratory.
Department: Health Management		
Dr. J McClure	jmcclure@upei.ca	<i>Canadian Dairy Network for Antimicrobial Stewardship and Resistance (CaDNetASR)</i> The student would be involved in microbiology techniques in the lab as well as help with sample collection on dairy farms in PEI and Nova Scotia.

Dr. Martha Mellish	mmellish@upei.ca	<p><i>Prevalence of tracheal collapse and lungworm in working donkeys, Meru County, Kenya</i></p> <p>This study will compare findings of respiratory exams, using a flexible camera (endoscope) to visualize the airways of donkeys that pull carts and donkeys that carry water on their back. Data will be collected in January of 2024 in an effort to determine if there is a difference in the rate of respiratory disease in these groups potentially due to the different methods of harnessing.</p>
Dr. Emily John	ejohn@upei.ca	<p><i>Investigating anthelmintic resistance in sheep flocks on PEI</i></p> <p>Looking at current levels of parasite infestation and levels of parasite resistance to common dewormers that are used in Canada for sheep.</p>
Dr. Katy Proudfoot	kproudfoot@upei.ca	<p><i>Animal behaviour and welfare projects</i></p> <p>Research projects related to the welfare and behaviour of dairy cattle or teaching animals at AVC.</p>
Dr. Ben Stoughton	wbstoughton@upei.ca	<p><i>Biosecurity Strategies to Control the Prince Edward Island Equine Viral Arteritis Outbreak</i></p> <p>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 EVA antibodies and persistently infected stallions on PEI is unknown. Project aims include implementing outreach, surveillance, and mitigation strategies to aid the equine Standardbred breeding industry.</p>
Dr. Aimie Doyle	ajdoyle@upei.ca	<p><i>Comparison of chlorhexidine-based and alcohol-based antiseptics in horses undergoing hock arthroscopy</i></p> <p>This project is comparing the efficacy of 2 different surgical preparation methods in a clinical setting with hock arthroscopy. There would be opportunity for the VetSRA student to be in the surgical suite for sampling as well as in the lab, diluting, plating, and counting samples.</p>
Dr. Karen Overall	koverall@upei.ca	<p><i>Understanding when normal and abnormal behaviours diverge: Using physiological and behavioural measures to define developmental trajectories for problematic behaviour</i></p> <p>The goals are to learn (1) what the range of normal behaviours in the Atlantic Provinces dogs looks like, (2) when abnormal behaviours begin to diverge from normal and what that looks like so that we can begin to intervene early (25% of 3-month old pups have displayed worrisome behaviour), and (3) what effects source and early life exposure plays in later life and behaviour pathology.</p>

Dr. Kathleen MacMillan	kmacmillan@upei.ca	<p><i>Study assessing the effectiveness of an app developed for generating reports of equine welfare investigations</i></p> <p>This project includes the development of an app that would be used on-farm by veterinarians and inspectors investigating equine welfare complaints. The VetSRA student will be part of a research study designed to assess the effectiveness and ease of use of the app for generating a welfare report from mock welfare assessments. The template will be based on the requirements listed in the Code of Practice for the Care and Handling of Equines as referenced in the regulations of the PEI Animal Welfare Act.</p>
Dr. Krishna Thakur	kthakur@upei.ca	<p><i>Exploring factors affecting fish health on marine aquaculture farms in Newfoundland</i></p> <p>The aquaculture industry is constantly facing challenges that affect growth and productivity at marine farms. Anything from environmental issues (e.g. low oxygen events, algal blooms) to outbreaks from pathogens such as ISAV or sea lice have all impacted farms in Newfoundland. Further research is required to better understand the relationships between some of these factors and their potential to impact aquatic animal health, animal welfare and productivity of cultured aquatic species. This project will see students assist with research activities (and clinical activities) in Newfoundland in areas where aquaculture farms are active.</p>
Dr. Sonja Saksida Dr. Mark Fast	ssaksida@upei.ca mfast@upei.ca	<p><i>Environmental Enrichment for Stress Reduction in Land-Based Salmonid Aquaculture</i></p> <p>This study proposes to assess whether modifications to the fish tank environment, such as tank colour and the addition of toys, will result in a change in fish stress levels (as determined by evaluating cortisol and other analytes). This project will help us answer questions about which environmental modifications will decrease stress in groups of Atlantic salmon and are feasible to implement in a commercial setting.</p>
Dr. Sonja Saksida Dr. Mark Fast Dr. Katy Proudfoot	ssaksida@upei.ca mfast@upei.ca kproudfoot@upei.ca	<p><i>Optimizing rearing conditions for adult wolf fish</i></p> <p>This project proposes to assess water temperatures and lighting preferences of brood stock. This information will be used towards refining the culture environment for adult wolf fish.</p>
Department: Pathology and Microbiology		
Dr. Nina Germitsch	ngermitsch@upei.ca	<p><i>Lungworm infections in bobcats</i></p> <p>How prevalent are lungworm infections in bobcats? During this project a student dissects bobcat lungs and screens them for feline lungworms.</p>

Dr. Nina Germitsch	ngermitsch@upei.ca	<i>Emergence of Echinococcus multilocularis</i> What is the current <i>Echinococcus multilocularis</i> prevalence in the Maritimes? This project entails the screening of fox and coyote intestinal tracts for detection of <i>Echinococcus multilocularis</i> and other intestinal parasites.
Dr. Shivani Ojha Dr. Megan Jones	shojha@upei.ca mejones@upei.ca	<i>Salmonella in wildlife of Atlantic Canada</i> Identification and characterization of <i>Salmonella</i> species identified from fecal samples of wildlife submitted by Canadian Wildlife Health Cooperative (CWHC).
Dr. Shivani Ojha	shojha@upei.ca	<i>Isolation and characterization of bacteriophages against pathogens implicated in skin infections of canine species</i> Bacteriophages (virus that kill bacteria) targeting <i>Pseudomonas aeruginosa</i> and <i>Staphylococcus pseudintermedius</i> will be isolated from the environmental sources. The bacteriophages will be tested on clinical isolates of the target pathogens to examine their killing efficiency.
Dr. Shivani Ojha	shojha@upei.ca	<i>Detection of Salmonella species in veterinary specimens using a quantitative real-time PCR kit in combination with enrichment methods</i> The <i>Salmonella</i> detection commercial kit will be tested for its utility in detecting low numbers of <i>Salmonella</i> in veterinary samples. The protocol modifications and background 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 protocol. The validated method will be listed in molecular test method of bacteriology diagnostic laboratory, to offer the test to veterinary clinicians.
Dr. Melanie Buote	mabuote@upei.ca	<i>Investigation of previously-frozen wildlife tissue samples (canids, snowshoe hares, or others, depending on student interests) for nematode parasites</i> The project will also include completing tick surveillance at five (5) PEI sites in mid to late June.
Dr. Laura Bourque	lbouque@cwbc-rscf.ca	<i>Wildlife health surveillance in PEI Salmonids - Investigating the prevalence of Oomycosis in brook and rainbow trout</i> Student will conduct field investigations in selected PEI rivers over the course of the summer and document the prevalence of diseased brook and rainbow trout, with a particular focus on Oomycosis. Student will assist with project design for detecting and counting diseased fish, as well as assist with necropsy of dead and euthanized fish.