

**2023 SJDAWC Funded Projects
(Alphabetical order of PI)**

PIs	Bernard P, Spears J, Bigelow, L
Project Title	The effect of common laboratory ultrasounds on rat behaviour and physiology
Project Summary	Our perception is dictated by our sensory capabilities, which capture only a fragment of the available information. Sensory capacities, including hearing, vary across species dictating a unique experience. Unfortunately, differences in hearing capacities can make it difficult to identify aberrant environmental sounds which may be a source of stress. The laboratory space is rife with ultrasounds emitted from a variety of sources including ventilation, electronics, and lighting, which unfortunately cannot be detected by the human ear without specialized equipment. These sounds may not only be causing stress to animals but may affect their communicative capacities, which includes vocalizing in the ultrasonic range. As a means of understanding the significance of ultrasounds in the environment, we propose to assess the effects of ultrasound exposure on behavioural and physiological markers of stress in the rat. Rats will be exposed to ultrasounds at frequencies commonly present within the laboratory space and tested using classic and novel assessments of anxiety. Behavioural anxiety assessments will be supplemented with physiological measurements including body temperature, corticosterone, and adrenal gland integrity. The results of this study will not only lead to improved validity of rodent research by the identification and assessment of a confounding variable, but it will also be beneficial to pet owners who may be inadvertently exposing their pets to ultrasounds.
Amount	\$9,418
Type of Application	Research

PIs	Gunn McQuillan H, Foley P, MacDonald R, MacLean R, MacLean M
Project Title	Medical and surgical care of homeless small animals
Project Summary	The PEI Humane Society and the Atlantic Veterinary College see hundreds of homeless cats and dogs every year with injuries or illnesses requiring veterinary care. These animals are either found wandering at large and brought in by good Samaritans or shelter staff and volunteers, surrendered by owners who can no longer care for their pets for a variety of reasons, or seized because of animal welfare investigations. The funding from this grant the faculty, staff, and students at the Atlantic Veterinary College and PEIHS can care for many of these animals and return them to a state of health, which allows them to be adopted into homes in the community. This project has the obvious benefit of caring for these animals, who would otherwise not receive the medical or surgical care they require and deserve. An underlying and perhaps more far-reaching benefit to this project is the fostering of desire to care for animals without owners among the faculty, staff, and veterinary students of the AVC. The PI's capture and review detailed data of the cases that present to the VTH, funds spent, and ultimate patient outcome. The staff and, possibly more importantly, students in the AVC VTH are aware of the role of the Sir James Dunn Animal Welfare Centre in supporting this project. The vet students serve as ambassadors for animal welfare as they leave the AVC. This experience and exposure have the potential to magnify the effect of every dollar generously provided by the Sir James Dunn Welfare Grant and continue the benefits throughout an even wider veterinary community with regards to animal welfare concerns for homeless animals.
Amount	\$25,000
Type of Application	Service

PIs	Saksida S, Fast M, Reynolds K, Whyte S
Project Title	Environmental enrichment for stress reduction in land-based salmonids aquaculture
Project Summary	Farmed Atlantic salmon are traditionally raised in tanks/raceways in early life-stages, and later stages grown in marine net-pens. There, however, is increasing interest in raising salmon completely on land in tanks at much higher densities. Knowledge of these tank environments has been generally skewed towards optimizing growth and reducing production costs and not necessarily welfare. The goals of this project are (1) determine if specific environmental modifications have an effect on overall salmon wellbeing, and (2) to determine whether these modifications are feasible and effective in commercial aquaculture settings. Several project objectives will help achieve these goals. Initially, lab studies conducted in AVC aquatic facilities will explore the effect of rearing environment modifications on fish welfare; specifically, the effect of rearing tank colour, and/or the addition of toys to the fish environment. Collected measurements will include those outlined in other published literature as well as novel measures of fish welfare (e.g. blood and fecal sampling for markers of stress, and video recordings of fish behaviour). Field trials will be conducted at commercial aquaculture facilities, with environmental modifications refined from the initial lab-based studies. Feedback on the field trials will allow for adjustment modifications for future improvements. Results will be shared with stakeholders in both academic and commercial aquaculture settings to develop recommendations and training programs. This project will help fill knowledge gaps on how salmon experience specific changes to their environment and help guide welfare-focused recommendations for those who work with salmon in various settings, both research and commercial.
Amount	\$99,900
Type of Application	Research

PIs	VanLeeuwen J, Hall D, Ritter C, Rao J, Muunda E
Project Title	Motivations and cost-effectiveness of improved cow comfort on smallholder dairy production systems in Kenya
Project Summary	Smallholder dairy production systems contribute significantly to the growth of low- and middle-income countries. However, farm management on smallholder dairies does not offer cows adequate living conditions, contributing to welfare issues such as joint injuries, lameness, and udder infections. Subsequently, this negatively impacts the animals' welfare, productivity, and the general performance of the farms. Resource constraints, lack of adequate knowledge about proper housing requirements and motivation issues may contribute to this challenge. Previous studies have shown positive effects of cow comfort interventions on animal welfare. However, there remains a significant research gap on the cost-effectiveness of cow comfort interventions in Kenyan smallholder dairy farms, and what incentives motivate farmers to improve the welfare of cows. The proposed project will include a baseline assessment of cow comfort and production on 300 smallholder farms, along with attitudes toward motivation to improve cow comfort. An intervention based on best management practices for cow comfort will be provided to 200 randomly allocated farms of the 300 farms. Factors that affect cow comfort, drivers of adoption (factors of farmer motivation) and their association to productivity will also be determined. The cost of achieving specific outcomes (e.g., improved cow comfort, increased milk production, reduced mastitis) will be calculated and compared across intervention groups. The 100 farmers in the control group will receive the intervention at the end of the study. The results will be disseminated to farmers and key stakeholders in dairy value chains in Kenya and globally through journal publications, conference presentations and proceedings.
Amount	\$39,990
Type of Application	Research