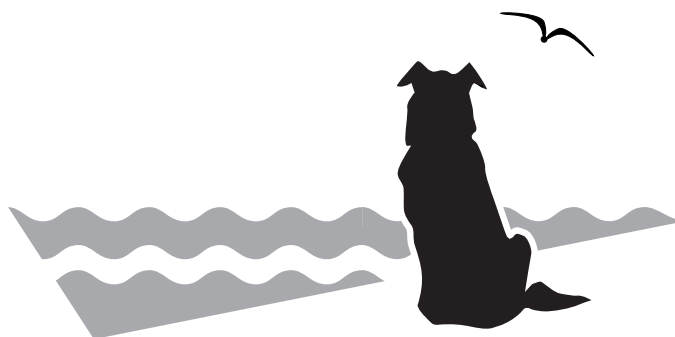


AWC NEWS

NUMBER 7 • SUMMER 2001



Sir James Dunn Animal Welfare Centre
ATLANTIC VETERINARY COLLEGE • UNIVERSITY OF PRINCE EDWARD ISLAND



From the Coordinator's Desk

With this summer edition, we begin publication of two newsletters a year. Contained herein you will find an update on the research programme Dr. Hewson is developing for the Centre, as well as summaries of the thirteen projects funded through this year's Animal Welfare Centre competition. In "Other News" on page 5 the Centre is pleased to be sponsoring talks by leading animal welfare scientist Dr. Mike Appleby here at the Atlantic Veterinary College in early October.

We are very pleased with the scope of projects that the Centre is able to support, through the generosity of the Sir James Dunn and Friends of the Christofor Foundations. This summer, Dr. Hewson is beginning a novel project to develop a quality of life scale for use in dogs. Again this year, there are projects collaborating with community groups - Dr. Karen Gibson is working with feral cat caretakers to neuter feral cats on PEI, and Dr. Norma Guy is developing a programme to teach basic manners to friendly but boisterous dogs at the Humane Society. Melanie Ching is the first AVC student to have a project - *Rehabilitation of wild birds* - funded through the Centre's newly established Student Project Fund. Clinical research projects will look at new approaches to the treatment of glaucoma, kidney disease, and osteoarthritis. Another study will develop a test to diagnose the French heartworm, which appears to be on the increase in dogs and red foxes in Newfoundland.

On the cover you will see the new logo of the Sir James Dunn Animal Welfare Centre. We thank Glenda Clements for her artistic inspiration and her patience. The logo will be incorporated into the AWC website which is undergoing redesign over the summer.

The 13 projects funded this year bring to a total of 59 the number of projects supported by the Centre (formerly Animal Welfare Unit) since 1994. Providing tangible benefits for companion animals, horses and wildlife remains the focus of the Centre. Please visit our website for further information.

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Message from the Research Chair

Since my last message, there have been several exciting developments in the Animal Welfare Centre's emerging research programme. Here are the highlights.

I have been working on a Strategic Research Plan; this will provide long-term research objectives and a yardstick for measuring progress. The Plan is broadly-based because animal welfare science is informed by many different disciplines; for example, philosophy and veterinary medicine. I have therefore been meeting with researchers in different areas to exchange ideas. In February, I visited six institutes in the UK and this summer I will meet with other researchers from North America at conferences in the US and Canada. The Research Plan will be ready in the Fall.

Meanwhile, several prospective graduate students from the US and Canada have expressed interest in studying here. One will commence her MSc programme in the fall: Janina Wojciechowska DVM, will be working on a method of assessing quality of life in dogs. This topic is especially important for veterinarians who are regularly asked by owners if an animal is suffering. The research is exciting because it will be a first step in the development of a valid and reliable scale which we hope could eventually be adapted for use in other species as well.

During the summer, I will be doing an interesting piece of collaborative research that will look at the level of use of post-operative analgesics (painkillers) in dogs and cats. The study will follow up on an identical project sponsored by the then Animal Welfare Unit in 1994. Pain is such an important aspect of animal welfare: by monitoring analgesic use, the Welfare Centre is providing a real service to dogs and cats and their owners and veterinarians.

The Animal Welfare Foundation of Canada has asked me to write a position paper concerning the management of feral cats in the Canadian context. There are a lot of issues to be examined and we expect that the paper will raise several research questions. Feral cats are a topic of mutual concern and I welcome the opportunity to review the issues with the Animal Welfare Foundation of Canada.

In the fall newsletter, I will outline the Strategic Research Plan and other new research-related projects.

NEW PROJECTS - 2001

Thirteen projects have been funded through the Animal Welfare Centre in 2001. Eleven of these are new endeavours, and two are renewals of previously funded projects.

Neutering feral cats on PEI

Drs. K. Gibson and T. Bailey, Ms K. Keizer

Most communities have populations of feral cats in their midst, that are a source of concern to community members, veterinarians, and animal control agencies. These semi-wild cats are the offspring of stray or abandoned animals which typically live in areas where they are able to find some food and shelter. These cats are often unhealthy, with a significantly reduced lifespan due to illness and injury - much of this related to uncontrolled reproduction.

With populations of feral and stray cats, often the first course of action is removal and euthanasia. In 1999, 1600 cats were euthanized at the PEI Humane Society, of which approximately 75 percent were considered feral. However because of population dynamics and territorial behaviour, removing cats from an area makes more resources available for newborn and migrating animals to quickly replace those removed. An alternative to removal and euthanasia is a "trap, neuter and release" programme. These programmes are being carried out in many areas of North America, and result in cat populations that are more stable (zero to low birth rate) and healthier (tested, vaccinated, and with reduced fighting associated with mating behaviour).

Through this project, Dr. Gibson is establishing such a programme with a community group in Charlottetown (the Cat Action Team) and the Town Council of North Rustico. Feral cats over six weeks of age will be brought to the AVC, anesthetized, tested for two common serious infectious diseases, vaccinated, ear-tipped, neutered, and, after recovery from anesthesia and surgery, released back to the original area. The intent is to improve the health and population dynamics of the feral cats, and reduce animal suffering.

French heartworm in Newfoundland

Drs. G. Conboy, F. Markham, and L. Miller

French heartworm is a parasite (a roundworm) which infects the blood vessels in the lungs and heart of dogs and red foxes. It causes serious disease and death, through damage to the heart and lungs and potentially other organs. The main sign of infection is a chronic cough, for which there are also many other causes, and eventually, heart failure. The parasite was first diagnosed in Newfoundland in 1996 and has not yet been found in other regions of Atlantic Canada, but given the frequency and speed of travel between Newfoundland and other areas, and the abundance of red foxes and slugs (the intermediate host) in the rest of Atlantic Canada, it seems likely the parasite will spread.

Standard stool tests for parasites do not detect French heartworm larvae. Instead larvae are detected by a specialized technique, but usually this is done only after the animal is showing signs of disease (which means some permanent heart and lung damage may have already occurred). The goal of this project is to develop a blood test to help with diagnosis. The test will be patterned after the ELISA test that has been used so successfully in the early diagnosis

of North American heartworm, so that treatment can occur before there is serious permanent damage to the heart and lungs. Early treatment greatly improves the chances for a complete recovery.

The project will also look at the effect of the French heartworm on the red fox population, through post-mortems on sick foxes that have been euthanized for humane reasons, to determine if the parasite may have caused or contributed to their illness.

A new treatment for glaucoma

Dr. C. Cullen

Glaucoma is a painful eye disorder that is one of the most common causes of blindness in dogs. It results from an increase in fluid pressure in the eye, which happens when the normal pathway for fluid to leave the eye is blocked. The blockage can occur for many reasons, including an inherited defect in the structure or function of the pathway for fluid exit. This is called primary glaucoma - it is more common in certain purebreds, and it usually eventually affects both eyes.

Glaucoma must be treated quickly to prevent irreversible blindness. Available treatments include drugs and/or eye surgery to attempt to reduce or redirect fluid production in the eye. Unfortunately these treatments are rarely successful over the long term, and pain and blindness result. Options at this point for blind, painful glaucomatous eyes include complete removal of the eye, or placement of an implant within the outer coat of the eye.

In this project, Dr. Cullen will try a new type of surgical treatment for glaucoma. This involves implantation of a shunt (a small piece of plastic tubing) that will redirect the fluid produced in the eye to the frontal sinus, an air-filled space near the eye. Currently used shunts direct the fluid to the outside, and scarring and blockage of the tube usually develop within one to six months. It is expected that the new shunts will reduce these problems and prove to be a more effective treatment for primary glaucoma in the dog.

Diabetes mellitus and tear formation in dogs

Drs. C. Cullen and S. Ihle

Cataract formation in one or commonly both eyes occurs frequently in diabetic dogs. Many of these cataracts enlarge rapidly, causing inflammation, pain, and eventually blindness. Surgical removal of the cataracts offers the best chance of reducing discomfort and restoring vision, but the success rate of the surgery is lower in diabetic dogs than in dogs who have cataracts removed for other reasons.

Recently it has been found that the tears (crucial for normal nourishment and lubrication of the eye) in diabetic people are decreased in amount and are abnormal in consistency. This is thought to contribute to the eye disease that is a common complication of diabetes mellitus. Through this project, Dr. Cullen will compare qualities of the tears in diabetic and normal dogs. If typical abnormalities can be identified, they may be treatable before surgery and therefore increase the success rate for diabetic cataract surgery.

AVC humane dog training programme

Dr. N. Guy

Most dogs that are given up to animal shelters in North America are adolescents (six months to two years of age). Many of these dogs may appear boisterous and unruly, and have had little training. Through this project, a programme will be developed by AVC students working with the PEI Humane Society, its dogs, and their new owners. The student trainers will work with assigned dogs at the Humane Society, to teach basic commands and reduce problems with unwanted behaviours. After the dogs are adopted, the students will be available to provide support and counseling for new owners as to what to expect, as well as training advice.

Behaviour modification using positive reinforcement (clicker training) will be used. No aversive, or punishment-based, techniques will be employed. Interaction with the students will provide much-needed enrichment for the dogs while they are at the shelter, and the reduction in unwanted behaviours is expected to increase the likelihood that the dogs will be adopted and will fit in happily in their new homes. Working with shelter dogs and their new owners will be a valuable experience for the students who, as veterinarians, will often have to advise clients on pet behaviour.

Pain management in birds

Drs. C. Runyon, A. Ferraro, and E. Miller

The importance of proper assessment and management of pain is increasingly recognized in veterinary and human medicine. Untreated pain causes physical and psychological stresses that result in states ranging from mild discomfort, to delayed healing and recovery, to shock and even death. The use of effective painkillers is clearly an important part of successful treatment.

Pain management is a real challenge in birds. Little work has been done to identify physical and behavioural changes in birds that can be used to assess pain reliably, and to determine effective dosages of those pain relievers that are used. In fact, it is likely that difficulty in assessing and managing pain in birds is an important factor when treatment fails.

This project will begin to look at this problem, specifically in injured pet birds, and hawks and owls that are brought to AVC and other participating wildlife facilities. The study will measure physical changes that are known to be associated with pain in other species, and will document behaviours in birds that may be associated with pain through videotaping them when they are alone. The birds will receive treatment as required. The eventual goal is to develop specific ways of assessing pain in companion and wild birds, and to identify appropriate doses of a commonly used painkiller to treat pain.

Glucosamine—an alternative treatment for arthritis in dogs

Drs. C. Runyon and M. Vijarnsorn

Osteoarthritis is a relatively common joint problem in dogs. There is deterioration of the cartilage and inflammation of the joint capsule, causing pain and varying degrees of lameness which generally worsen over time. Various drugs are used to reduce the pain and improve the dog's quality of life, but all of these have some undesirable side effects when used over the long term.

Recently, attention has shifted to alternative methods of managing arthritis that focus on slowing the process of cartilage deterioration, and at the same time promote production of new cartilage. Glucosamine is one such nutritional supplement that has been used successfully in humans to relieve some of the symptoms of arthritis. Although it is also being used to some extent in dogs, its effectiveness has not been studied.

This project will look at the use of glucosamine as a treatment for osteoarthritis in dogs. Affected dogs will be thoroughly assessed before and after commencing treatment with glucosamine; assessment will include x-rays, blood tests, and detailed analysis of the gait. If the study demonstrates that glucosamine does provide relief and improve joint function in dogs, veterinarians will have another alternative for the treatment of osteoarthritis and for the improvement of quality of life in dogs with this disorder.

Benazepril in dogs with chronic kidney failure

Drs. D. Shaw, P. Foley, and A. Cribb

Chronic renal failure (CRF) is a serious disease of dogs and cats in which there is progressive loss of kidney function, ultimately causing death. A study was funded last year by the Animal Welfare Centre to determine if TGF-beta, a small protein with many effects, is a factor in the scarring and associated loss of function that occurs in the kidneys of animals with CRF. The study showed that TGF-beta levels are significantly higher in dogs with CRF.

Studies in laboratory animals and people have shown that TGF-beta production is increased by a peptide hormone called angiotensin II, and that drugs which block production of this hormone result in a decrease in levels of TGF-beta in the blood, and slow the progression of chronic kidney disease. This project is a clinical trial of benazepril (an angiotensin II blocker) in dogs with chronic kidney disease, to see the effect on the levels of TGF-beta, and on kidney function. If a link can be established between treatment with angiotensin II blocking drugs and decreased TGF-beta concentrations in the blood, this may be a significant breakthrough in the management of this debilitating and ultimately fatal disease.

Use of painkillers after surgery

Drs. C. Hewson, I. Dohoo, and K. Lemke

Pain can detract substantially from an animal's well-being. One cause of pain is surgery. Therefore, the management of surgical pain is of great interest to veterinarians, animal owners, and researchers. A survey sponsored by the Animal Welfare Unit in 1994, showed that approximately 50 percent of Canadian veterinarians did not give painkillers following surgeries. The main reasons for this were the veterinarians' perceptions of the amount of pain felt and their concerns about serious side effects of the drugs. The main post-surgical painkillers in use at that time were morphine derivatives.

Seven years later, there are new pain-relieving drugs available; they belong to a class called non-steroidal anti-inflammatory drugs (NSAIDs - similar to aspirin.) There is also increased awareness of the importance of pain relief in animals. This project will repeat the survey of Canadian veterinarians, to see if more of them are using pain-killers in dogs and cats at surgery compared to 1994, and to identify any reasons for non-use. The results will also highlight points about management of surgically-induced pain which can be developed further both in veterinary teaching and in continuing education for veterinarians.

Development of a quality of life scale for dogs

Drs. C. Hewson and J. Wojciechowska

When owners ask if their animal is suffering, the veterinarian replies with his or her professional opinion. However, this opinion may be unconsciously biased by the veterinarian's personality-type and social and cultural values. In addition, both the owner and the veterinarian may not take fully into account the animal's mind and its nature - its breed and temperament. For these reasons, it would be useful to have a more systematic and objective method of assessing animal well-being.

The goal of this project is to develop a scale that will be used to assess the well-being or 'quality of life' of dogs. To do this, Dr. Hewson will review work on assessment of quality of life in human patients and look at what is known about a dog's point of view in life. Then a list will be drawn up of areas that appear to be important for dogs' quality of life; these might include physical health, distress and opportunities for play. Different levels of well-being will be defined for each area, to create a scale.

To determine if the scale is reliable and valid, it will be used independently by two people for dogs in the AVC Teaching Hospital; the results will be checked against the opinion of a third veterinarian (who will not use the scale) about the dog's quality of life. The scale is a first step towards providing a more dependable way of assessing whether an animal is suffering, and giving owners and veterinarians greater certainty when they have to decide what is in a dog's best interests.

Rehabilitation of wild birds

Ms M. Ching and Dr. C. Runyon

Most veterinarians encounter injured wild birds during their careers. It is important for students to develop the necessary skills to cope with these situations. The Wildlife and Exotics Club at the AVC is one avenue for students to do this, through working with skilled personnel at the AVC and assisting with injured birds that

come to the Veterinary Teaching Hospital for care and rehabilitation.

Third year AVC student Melanie Ching is President of the Wildlife and Exotics Club. She will use the funding obtained with this project to purchase additional suitable perches and appropriate protective equipment for students working with wild injured birds such as the bald eagle and red-tailed hawk that were recently rehabilitated at AVC. This will enable a greater number of interested students to participate in the care and rehabilitation of an increased number of injured wild birds.

This is the first project funded through the Animal Welfare Centre's Student Project Fund, which is available to students for short-term projects that will benefit companion animals, horses, or wildlife.

Funding has been renewed for the following projects.

Marine wildlife rehabilitation

Drs. P. Daoust, H. Gelens, A. Ortenburger, and C. Runyon, and Mr. G. Dobbin

Marine mammals and birds, such as harp and harbour seals, blue herons, northern gannets and common loons, are often brought to AVC for veterinary care because of injury, disease, or (with newborns) abandonment. The treatment and rehabilitation of these animals presents a challenge because of their special dietary and environmental needs. AVC faculty and staff also respond to emergency calls regarding live strandings of seals, white-sided dolphins, and pilot whales, some of whom receive medical treatment in an attempt to lessen the stress and shock associated with stranding. Sometimes humane euthanasia is the best option for these animals.

This project was first funded in 1999 to provide proper veterinary care to injured, diseased, or starving marine animals. The increased knowledge and experience gained through the ongoing work in rehabilitation and humane care (including euthanasia when needed) enables improved care of other marine animals. Funding is renewed for this project for the next two years, to continue and to improve the services and facilities provided at AVC for these animals.

Wildlife rehabilitation (including orphaned wildlife care)

Drs. H. Gelens, C. Runyon, and P. Daoust

Concerned members of the public often bring orphaned or injured wild animals (birds and small mammals) to the Atlantic Veterinary College to receive veterinary and nursing care. Sometimes these animals require medical attention, sometimes temporary nursing and supportive care (especially for orphaned wildlife), and sometimes the best thing for them is humane euthanasia.

Unfortunately, mortality among these animals is often high due to the lack of accurate information and the inherent difficulties in the rescue and care of different species of wildlife. This project was started last year and resulted in an increase in the number of successful releases back into the wild, expanded veterinary student participation, and the establishment of preliminary networks with other wildlife rehabilitators.

This project has been funded again this year, to build upon and improve the existing level of care for these animals at AVC, including the purchase of specialized supplies. The project will also continue

to provide practical experience for veterinary students interested in wildlife care, equipping them to play a leadership role in this area in their communities once they graduate. The end goal for all patients is successful release back into the wild.

OTHER NEWS

Legislation on cruelty to animals (Bill C-15)

Proposed amendments to the Canadian Criminal Code will provide important new protection for animals in Canada, if passed. Bill C-15 was introduced in Parliament this spring, but second reading has been delayed until the fall session.

The main objectives of the proposed reforms are to simplify and better organize the existing laws (largely unchanged since 1892) and to enhance the penalties for animal cruelty. To achieve this, Bill C-15 moves animal provisions out of the property section of the Criminal Code to a new section which focuses on cruelty to animals. This crucial change will provide protection for animals regardless of their status as property, or the monetary value that can be assigned to them. The Bill will increase the potential maximum prison sentence for animal cruelty offences from six months to five years, and eliminate the current limit of two years duration for an order prohibiting the offender from possessing animals. The Bill includes new power for the court to order the offender to pay restitution such as veterinary bills and shelter costs to the organization that provided care for the animal.

Opponents of C-15 are concerned that the changes will negatively affect legitimate activities that involve animals, such as hunting, farming, or medical and scientific research. However these are regulated activities subject to specific technical rules and regulations and codes of practice. Criminal law is not used to establish or modify industry standards but rather to prohibit conduct that is grossly unacceptable. According to the Justice Department, what is lawful today in the course of legitimate activities will be lawful when the bill receives royal assent.

There is overwhelming evidence of a direct link between the abuse of animals and violence against people, including family members. Veterinary practitioners are often the first professionals to examine an abused animal. If passed, the proposed amendments to the Criminal Code in C-15 will help veterinarians, along with humane societies and law enforcement agencies, to deal more effectively with cases of animal abuse. This is a positive step towards interrupting the cycles of violence in our communities.

The text of the bill can be found on the Department of Justice web site at <http://www.parl.gc.ca/>, under 'bills' (specifically Bill C-15, Part V.I, Cruelty to Animals). The amendments will replace sections 444 - 447 of the Criminal Code.

Bioethics course

Recently, Dr. Hewson attended an intensive course in bioethics at Iowa State University. The course, held annually in the US and Europe, is designed to help faculty in the applied sciences to teach students about bioethical aspects of the particular scientific field. Fifty-two faculty took the course, from diverse backgrounds including genetics, crop science, and reproductive biology. Dr. Hewson was the only animal welfare scientist there and the only representative from Canada. Instruction by leading bioethicists

(including Gary Comstock of Iowa State University and Gary Varner of Texas A&M) provided several useful teaching tools to help students assess the ethics of scientific work. Dr. Hewson will incorporate these teaching techniques into her own graduate and undergraduate courses.

The assignment for the course was to develop a case study that could be used to teach ethics in class. Dr. Hewson led her group in developing a study of the ethical issues surrounding use of trap-neuter-release schemes to control feral cats.

Information about the course is available at http://www.biotech.iastate.edu/Bioethics/Institute/ISU_Institute/ISU_description.html.

Dr. Mike Appleby to speak at AVC Fall Conference

The Animal Welfare Centre is sponsoring Mike Appleby (BSc PhD), one of the world's leading animal welfare scientists, as the keynote speaker at the 2001 AVC Fall Conference on October 12 and 13. Dr. Appleby is the author/co-editor of two key texts on animal welfare (*What should we do about animal welfare?* and *Animal welfare*). Having taught and done research at the University of Edinburgh for many years, he has recently joined the Humane Society of the United States as Vice-President for Farm Animals and Sustainable Agriculture.

Dr. Appleby will give a public talk on Friday evening "What should we do about animal welfare?" and a talk for conference delegates on Saturday "What science has told us about animal welfare." For more information on the Fall Conference, please contact Ms Susan Stensch at (902)-566-0780 or sstensch@upe.ca

MANDATE

The Sir James Dunn Animal Welfare Centre (AWC) exists to promote animal health and well-being in the broadest sense.

Objectives:

- 1) The AWC promotes research projects and service activities where there is a clear potential for tangible benefits to animals.
- 2) The AWC serves as a resource centre to compile, generate, and disseminate information relevant to the well-being of animals.
- 3) The AWC strives to raise the awareness of the public and the veterinary profession on broad questions of animal welfare and animal use, and to provide accurate, scientifically based information on these questions.

The Sir James Dunn Animal Welfare Centre gratefully acknowledges the continued support of the Sir James Dunn Foundation and the Friends of the Christofor Foundation.