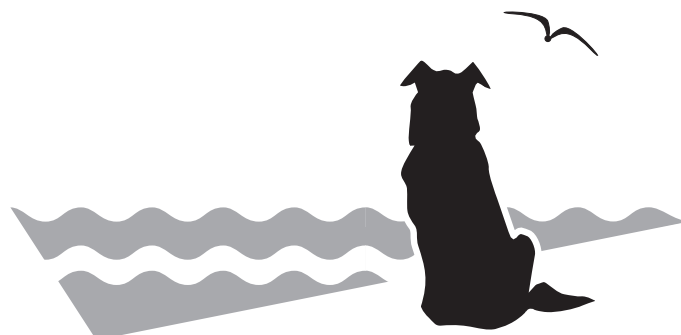




avc NEWS

NUMBER 21 • SUMMER 2008



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

From the Coordinator's Desk



Welcome to the Summer 2008 AWC News, the newsletter of the Sir James Dunn Animal Welfare Centre (SJDAWC) at the Atlantic Veterinary College, University of Prince Edward Island. Highlights in this issue include the AVC team's success at the recent Animal Welfare Judging Contest at Michigan State University, information on the upcoming fourth annual "Animal Welfare: In Practice" conference on fish and lobster welfare (October 2008), and the publication of the poster and handout on anaesthetic and pain management protocols in horses, cattle, and pigs.

This edition also contains descriptions of eight projects recently funded through the SJDAWC 2008 grant and a ninth project funded jointly by the Animal Welfare Foundation of Canada (AWFC) and the SJDAWC. The 2008 service projects include renewed funding for the *Chinook project* which brings veterinary care to isolated communities in the Canadian North.

Dr. Cockram is establishing his research programme at AVC (pages 3, 5). He is currently accepting applications for two graduate student positions in animal welfare for fall 2008 (upei.ca/awc for details). Dr. Cockram recently hosted two visiting scholars, Niamh Caffrey from Edinburgh, UK, and Andrea Rogers from Hamilton, New Zealand. We eagerly await the completion of new rooms for the SJDAWC at AVC, which will provide an increased profile and focus for the Centre.



Please visit our website at upei.ca/awc to find out about upcoming events at the Centre, and for information on all projects funded to date, associated publications and presentations, and animal welfare resources at UPEI's Robertson Library.

Alice Crook



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Help animals by supporting the Sir James Dunn Animal Welfare Centre

We welcome and appreciate the generosity of animal welfare supporters and friends of the Atlantic Veterinary College. Donations or planned gifts in the name of a special animal companion, friend, or family member can be a fitting and lasting tribute that will benefit animals for generations to come.

Donors may direct their contributions to support all activities of the Centre to improve the welfare of animals, or may choose to support specific service or research projects. Donations may be made through UPEI's secure online system (upei.ca/awc "To make a donation") or by cheque to the SJDAWC (address above).

For more information on the work of the SJDAWC, please contact Dr. Alice Crook at animalwelfare@upei.ca or (902) 628-4360. To inquire about giving options, including bequests, gifts of securities, RRSPs, and RRIFs, please contact Rosemary O'Malley-Keyes, AVC Development Office, at omalleykeyes@upei.ca or (902) 894-2865/(866) 453-4119 (toll-free in Canada and the United States).

PROJECTS FUNDED—2008

Survey of euthanasia practices in animal shelters in Canada to identify ways of incorporating “best practice” into guidelines for humane euthanasia

M Cockram, A Mouncilli, S McConkey

Euthanasia is an unavoidable and unfortunate reality for most animal shelters and humane societies across Canada. Regardless of the reason or the setting, all animals are entitled to a humane death, i.e., one without pain and distress. Factors that are likely to have a significant impact on the humaneness of euthanasia include the method used; the availability of drugs; the knowledge, training, and experience of staff; the equipment; the environment; and the circumstances.

This study will establish a baseline of knowledge of current euthanasia practices in Canadian animal shelters. One component of the study will be a literature review of euthanasia practices for companion animals and wildlife to look at aspects such as drug options, chemical and physical restraint, animal handling procedures, environmental conditions, and current legislation and guidelines. The second component will consist of a mail survey to identify and describe euthanasia practices and protocols in animal shelters across Canada, with a view to identifying what aspects require improvement and what aspects may require further research.

Is there an association between obesity and kidney disease in dogs?

D Shaw, K Tefft, S Ihle, S Burton, P Foley, H Gelens

The health consequences of obesity in people, such as high blood pressure, diabetes and heart disease, are well-known. Many of these complications have direct harmful effects on the kidney. However, obese and overweight patients without diabetes or high blood pressure also have an increased risk of developing chronic kidney disease, which is preceded by a condition called obesity-related glomerulonephropathy (ORG). This condition can be reversed with weight loss.

Obesity is a common and significant health problem in dogs. Changes similar to those in ORG have been seen in the kidneys of obese dogs, but the correlations with protein loss in the urine or other markers of kidney injury have not been assessed. The purpose of this study is to determine if otherwise healthy,

obese dogs have evidence of kidney injury and if the degree of injury corresponds with the severity of obesity. If it can be shown that obesity-related kidney disease in dogs can be reversed through weight loss, the study will provide important new information about both the health risks of canine obesity and the treatment of kidney disease in overweight dogs.

Chinook project—providing veterinary care to Nunavut communities (2008–10)

L Miller, J Magrath, M Hopson

Veterinary care is unavailable in many communities in Canada's North. This project is a renewal of the 2006-funded SJDAWC project that provided basic veterinary care to communities in Nunavut, specifically Kimmirut, in 2006, and Cambridge Bay, in 2007. The Chinook project teams were very warmly received in both communities.



AVC student Melissa Guillary and puppy in Cambridge Bay

This year the AVC team will return to Kimmirut, an isolated community on the south shore of Baffin Island. The community has a population of approxi-

mately 400, many of whom maintain a traditional lifestyle involving hunting, fishing, and several sled dog teams. For one week in July, a volunteer team of two veterinarians and four veterinary students will provide medical and surgical care to sled and homebound dogs. Such care will include vaccinations, examinations and treatment for parasites, neutering, and other surgical and medical treatments as necessary (e.g., tumour removal). Community members will be given basic information about first aid, vaccinations, and parasite prevention; and supplies will be left with them to improve the well-being of their animals. AVC team members will also participate in a cultural exchange to allow them to broaden their understanding of Canadian diversity.

For 2009, the team has been asked to go to Kuglutuk (Copper Mine). Project participants are keeping journals during their time in the communities, from which will be produced a series of creative non-fiction pieces to form a book with the working title *AVC Goes North*.

Travel and shipping of supplies to Nunavut are very costly. Besides SJDAWC support, the *Chinook project* has received generous reductions on air fares and shipping from First Air, as well as assistance from Pfizer Canada, Iams Pet Food, the Cogsdale Corporation, Home Hardware (St. Peter's Road, Charlottetown), and Bernard's Lock and Key Ltd. (Moncton, NB).

Financial aid to neuter companion animals of owners with low incomes

P Foley

Many dogs, cats, and rabbits are surrendered to the PEI Humane Society every year because their owners cannot provide homes for them. Pet overpopulation is particularly difficult to address in families that are unable to afford to have their pets neutered.

SpayAid PEI is a new volunteer non-profit organization dedicated to reducing companion animal overpopulation by creating and maintaining a spay/neuter assistance programme targeted to aid Islanders most in financial need. The organization works with participating veterinary clinics using a model that shares the costs of neutering a pet among the owner, the veterinary hospital, and SpayAid, each of whom pays one-third. SpayAid also pays the full cost of the first vaccination appointment three to four weeks prior to surgery.

As one veterinary partner in this initiative, the AVC Veterinary Teaching Hospital (VTH) is supporting two SpayAid-sponsored neuters per month. The SJDAWC is supporting the SpayAid programme by covering the organization's portion of the costs for the two neuters at the VTH, which will allow SpayAid to direct its resources towards more neuters. Go to spayaidpei.com for more information or an application form.

Health management services for the PEI Equine Retirement Society, Inc. (2008–10)

W Duckett, G Conboy

The PEI Equine Retirement Society Inc. (PEIERS) is a non-profit organization dedicated to the rehabilitation of horses destined to be destroyed or shipped for the meat industry, and to finding new homes for them as pets or pleasure horses. Since its founding in O'Leary, PEI, in 1996 by Mr. Dale Cameron, the Society has taken in 28 horses, of which 14 have been placed in new homes and 6 have been euthanized due to intractable health problems. Eight horses are currently at the farm. Through the SJDAWC, AVC has provided preventive medical care to the horses at the Society from the beginning.

Through this year's project, support is continued for two more years. The programme includes physical examinations of the horses, a parasite monitoring and control programme for the facility, dental work, routine vaccinations, and minor surgical and medical procedures as needed. AVC senior veterinary students, interns, and residents all participate in the care of these horses.

Health management services for Handibear Hills Equine Sanctuary, Inc. (2008–10)

W Duckett, G Conboy

This project provides preventive medical care to the horses at the Handibear Hills Equine Sanctuary, Inc. For 20 years, this facility, owned by Yogi Fell in South Granville, PEI, has provided a refuge for horses needing a home. Through programmes such as the Trailblazers Club, young people and adults spend time at Handibear Hills learning to ride, groom, and generally care for the horses.

Funding for this project is continued for two more years. The programme will provide regular dental care and vaccinations for the 26 horses currently at the

Sanctuary, as well as parasite monitoring and control, and behavioural advice for conditions that affect the comfort and quality of life of the horses. AVC senior veterinary students, interns, and residents all participate in the care of these horses.

Medical and surgical care of homeless animals (2008–10)

C Runyon, P Foley, E Cawthorn, M Coffey

Since first receiving funding in 1994, this project has enabled care for more than 3,000 companion animals, primarily dogs and cats. SJDAWC funding has been granted for a further two years to continue to address the problems of pet overpopulation and homeless animals in the region. Injured or ill animals, brought to the AVC Veterinary Teaching Hospital by the PEI Humane Society or Good Samaritans, receive physical examinations, x-rays, and/or other diagnostic procedures, emergency medical care, and continued medical or surgical care (including neutering as required) in consultation with the PEIHS. Some lost animals are claimed by their owners, while most, once healthy, are placed in homes through standard shelter adoption. Some animals are placed in “special needs” adoptive homes because they require specific care during recovery. Animals with severe illness or extensive injuries are humanely euthanized. AVC senior veterinary students, interns, and residents are extensively involved in the care of these animals.

Wildlife rehabilitation (including displaced or orphaned wildlife) (2008–09)

H Gelens, P-Y Daoust

Caring members of the public often bring orphaned or injured wild animals (birds and small mammals) to the AVC. Since 1999, the *Wildlife rehabilitation* project has provided financial support to care for these wild animals, some of which require medical attention and others temporary nursing and supportive care (especially for orphaned wildlife). For some animals, the best option is humane euthanasia.

Funding has been renewed for this project to build upon and improve the level of care for injured or orphaned wildlife at AVC. Typical costs include building materials (cages, perches, environmental enrichment), specialty foods, equipment (heat lamps, special bedding), anaesthesia, radiographs, and surgery. The number of raptors cared for through the project has

increased and there are additional costs for transportation of these birds to and from Maritime wildlife rehabilitation centres for proper flight training and long-term care. The end goal for all patients is successful release back into the wild.

AVC students from all four years participate in the programme, which offers a unique opportunity to interact with wildlife and apply principles of veterinary medicine to non-domestic species. The project has been integrated into, and is supported by, the AVC Companion Animal Medicine Service and Student Wildlife Club. The AVC, through this project, is part of a North American network of caretakers and rehabilitators of wildlife.

Transportation of animals for slaughter in Canada: current practices, welfare issues, and regulatory control

M Cockram, I Dohoo, V Black

In Canada, the livestock industry is large and animals are transported long distances by road due to the increasing centralization of specialized processing plants. There is a need for quantitative information on patterns of livestock journeys to provide a basis for consideration of the likely welfare issues and the requirements for regulatory control. Although voluntary codes of practice have been developed and are under review, where industry does not conform to best practice, international standards, and public expectations, government regulation plays an important role. The Canadian Food Inspection Agency (CFIA) has responsibility for the enforcement of regulations to protect the welfare of animals during transport. CFIA's input and cooperation are key elements to this project.

This study will consist of three parts: a descriptive survey to determine the source and journey duration of animals transported to federally inspected slaughterhouses in Canada; a survey of the welfare issues related to transportation observed by CFIA inspectors; and an analysis of difficulties experienced by CFIA in the enforcement of regulations and statutes and the prosecution of animal welfare cases.

This project is funded jointly by the Animal Welfare Foundation of Canada and the SJDAWC.

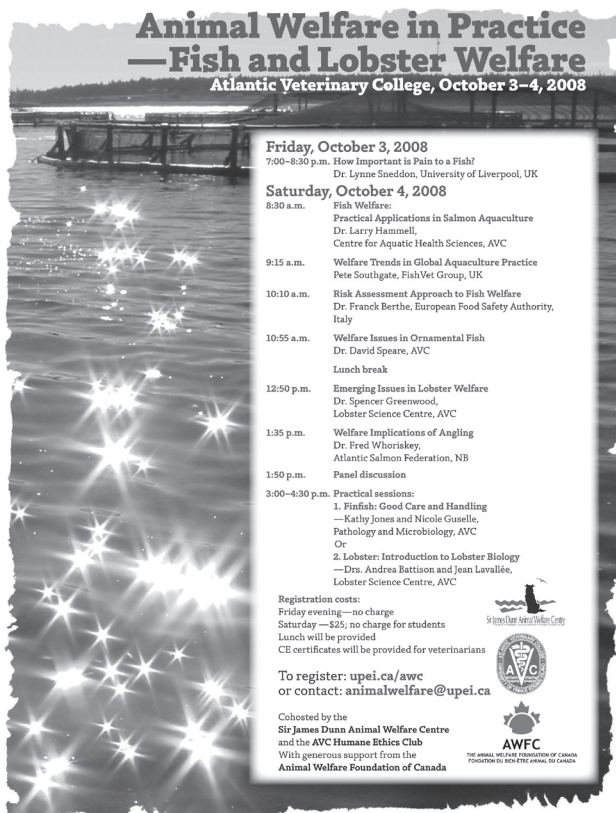
CONFERENCE NEWS

Animal Welfare in Practice—Fish and Lobster Welfare

Atlantic Veterinary College, October 3-4, 2008

Registration is now open for the fourth annual “Animal Welfare: In Practice” symposium at the Atlantic Veterinary College, with this year’s theme of fish and lobster welfare. Experts from the European Union and the AVC will speak on topics such as “How Important is Pain to a Fish?”, “Fish Welfare: Practical Applications in Salmon Aquaculture,” “Welfare Issues in Ornamental Fish,” “Welfare Trends in Global Aquaculture Practice,” and “Emerging Issues in Lobster Welfare.” There will also be a panel discussion and a choice of practical sessions.

Please go to upei.ca/awc to view the full programme and to register. The conference is co-hosted by the SJDAWC and the AVC Humane Ethics Club, with generous additional support from the Animal Welfare Foundation of Canada.



**Animal Welfare in Practice
—Fish and Lobster Welfare**
Atlantic Veterinary College, October 3-4, 2008

Friday, October 3, 2008
7:00-8:30 p.m. How Important is Pain to a Fish?
Dr. Lynne Sneddon, University of Liverpool, UK

Saturday, October 4, 2008
8:30 a.m. Fish Welfare:
Practical Applications in Salmon Aquaculture
Dr. Larry Hammell,
Centre for Aquatic Health Sciences, AVC

9:15 a.m. Welfare Trends in Global Aquaculture Practice
Pete Southgate, Fish Vet Group, UK

10:10 a.m. Risk Assessment Approach to Fish Welfare
Dr. Franck Berthe, European Food Safety Authority, Italy

10:55 a.m. Welfare Issues in Ornamental Fish
Dr. David Speare, AVC

Lunch break

12:50 p.m. Emerging Issues in Lobster Welfare
Dr. Spencer Greenwood,
Lobster Science Centre, AVC

1:35 p.m. Welfare Implications of Angling
Dr. Fred Whoriskey,
Atlantic Salmon Federation, NB

1:50 p.m. Panel discussion

3:00-4:30 p.m. Practical sessions:
1. Fishfish: Good Care and Handling
—Kathy Jones and Nicole Guselle,
Pathology and Microbiology, AVC
Or
2. Lobster: Introduction to Lobster Biology
—Drs. Andrea Battison and Jean Lavalleye,
Lobster Science Centre, AVC

Registration costs:
Friday evening—no charge
Saturday—\$25; no charge for students
Lunch will be provided
CE certificates will be provided for veterinarians

To register: upei.ca/awc
or contact: animalwelfare@upei.ca

Cohosted by the
Sir James Dunn Animal Welfare Centre
and the AVC Humane Ethics Club
With generous support from the
Animal Welfare Foundation of Canada

AWFC
THE ANIMAL WELFARE FOUNDATION OF CANADA
FONDATION DU BICHÈRE ANIMAL DU CANADA

OTHER NEWS

AVC Team Wins at MSU Animal Welfare Judging Contest

The AVC Animal Welfare Team recently took home first place in the veterinary division of the 7th Annual Intercollegiate Animal Welfare Judging Competition held March 15-16 at Michigan State University. This contest was developed several years ago by animal welfare scientists at MSU for animal science students. This year, for the first time, there was a division for veterinary students.



Winning team members: Gerald Dykstra, Christy Coulson, Dr. Michael Cockram, Shawn Llewellyn, and Tasha Kean

The AVC team consisted of Shawn Llewellyn (2008), Tasha Kean (2008), Christy Coulson (2010), Gerald Dykstra (2010), and Dr. Michael Cockram (faculty coach), with additional advance coaching from Drs. Norma Guy and Larry Hammell. Competing against teams from other veterinary schools in North America, the students reviewed computer-based presentations at MSU that contained data, videos, and images of animals in two comparable situations. The students evaluated the different situations, prepared their analyses, and made an oral presentation to expert judges on their rankings. The veterinary and animal science teams evaluated animal welfare scenarios involving swine gestation housing, aquaculture, dogs, and livestock auction markets.

Christy Coulson (AVC 2010) won first place, and Tasha Kean (AVC 2008) third place, in the competition for the veterinary student with the highest individual score across all scenarios. The AVC team also had the highest team score of both the veterinary and animal science divisions for the team evaluation of the livestock auction scenario.

Teaching students about animal welfare through the use of judging contests provides a stimulating way of learning and demonstrates the relevance of a systematic assessment of animal welfare to evaluate practical situations. During the two days at MSU, there was also a half-day educational seminar with invited presentations from the panel of expert judges.

Each AVC student received a \$500 travel grant from the American Veterinary Medical Association and similar travel assistance from the SJDAWC Student Project Fund.

SJDAWC and Department of Health Management Host Visiting Scholars

Niamh Caffrey (Scotland) and Andrea Rogers (New Zealand) recently spent time with Dr. Michael Cockram at AVC. Ms. Caffrey, a student from the MSc Applied Animal Behaviour and Animal Welfare programme at the University of Edinburgh, is working with Dr. Cockram for five months on the SJDAWC-funded project surveying euthanasia practices in Canadian animal shelters (page 3). This work will be Ms. Caffrey's required research project as part of her MSc programme.



Niamh Caffrey and Andrea Rogers

Andrea Rogers, Research Associate at AgResearch Ltd., Ruakura Research Centre, Hamilton, New Zealand, spent six weeks at AVC with Dr. Cockram in the spring to gain experience of the techniques that he pioneered in his research on sleep in sheep in Edinburgh. The aim of this research is to investigate the potential of measurements of sleep to contribute to the assessment of the effect of farming practices on the welfare of animals. Ms. Rogers received a Queen Elizabeth II Technicians' Study Award to study with Dr. Cockram.

On June 5, Ms. Caffrey and Ms. Rogers gave presentations at AVC on "Euthanasia in Animal Shelters Across Canada—Methods Used and Development of Questionnaire," "Welfare of Pastoral Farmed Animals in New Zealand: Overview of Research Undertaken by the Animal Behaviour and Welfare Team, AgResearch Ltd.," and "Six Weeks at UPEI Measuring Sleep in Sheep."

Update on Federal Animal Cruelty Legislation: S-203 passed

After almost ten years of debate, the federal government passed new legislation in April amending Canada's Criminal Code with respect to cruelty to animals. The new law, S-203, retains almost all the language and provisions of the previous legislation (enacted in 1892) while increasing maximum fines and jail sentences, along with the length of time an offender may be prohibited from owning animals. S-203, a private member's bill, was proposed by Liberal Senator John Bryden as an alternative to legislation that was passed by the House of Commons in 2003 but did not receive Senate approval. C-373 is a private member's bill (Liberal MP Mark Holland) that embodies all the provisions of the previously proposed legislation.

In January 2008, Drs. John Drake (CVMA President) and Alice Crook (CVMA Animal Welfare Committee) testified in Ottawa before the Parliamentary Standing Committee on Justice and Human Rights to express CVMA's position on Bills S-203 and C-373. The main concern of CVMA and other animal welfare organizations with S-203 is that, while it increases penalties for animal cruelty (which is laudable and essential), it does not address the important flaws in the current legislation that make enforcement difficult or impossible. C-373 does address these flaws. However, C-373 is still far down on the list of private members' bills.

Pain Management in Large Animals

An educational handout and poster for veterinarians, "Examples of sedative, anaesthetic, and pain management protocols in healthy horses, cattle, and swine" (K Lemke, C Hewson, and A Crook) has recently been published in English and French and mailed to all mixed- and large-animal veterinary practices in Canada. A joint project of the Canadian Veterinary Medical Association (CVMA) and the SJDAWC, the poster was initiated partly as a result of the project *Canadian veterinarians' use of painkillers in large animals*¹ (funded by the SJDAWC and the Animal Welfare Foundation of Canada). The poster and handout can be viewed on the SJDAWC website (upei.ca/awc). Hard copies may be ordered from the SJDAWC or the CVMA.

¹Hewson CJ, Dohoo IR, Lemke KA, Barkema H. Use of analgesic drugs in cattle, pigs, and horses by Canadian veterinarians in 2004 and 2005. *Can Vet J* 2007;48:155-164.

SPONSORS

The SJDAWC has recently received renewed funding for the ninth six-month phase of the *Pegasus feral cat neutering* programme. We are grateful to the Pegasus Family Foundation, through the Silicon Valley Community Foundation, for this continued support. The Centre is also pleased to acknowledge generous support from Mr. David Madren, as well as those who have provided assistance to the *Chinook project* (page 3). We also thank those pet owners who have made donations to the Centre *in memoriam*.

As always, we most gratefully acknowledge the ongoing financial support of the Friends of the Christofor Foundation, without which the SJDAWC would not exist.

HORSES Kip A. Lemke DVM MS DACVA, Caroline J. Hewson MVB PhD, Alice D. Crook BSc DVM Atlantic Veterinary College University of Prince Edward Island					CATTLE Examples of Sedative, Anaesthetic, and Pain Management Protocols for Healthy Horses, Cattle, and Swine					SWINE				
SURGICAL PROCEDURE	PREOPERATIVE MANAGEMENT	INTRAOPERATIVE MANAGEMENT	POSTOPERATIVE MANAGEMENT	COMMENTS	SURGICAL PROCEDURE	PREOPERATIVE MANAGEMENT	INTRAOPERATIVE MANAGEMENT	POSTOPERATIVE MANAGEMENT	COMMENTS	SURGICAL PROCEDURE	PREOPERATIVE MANAGEMENT	INTRAOPERATIVE MANAGEMENT	POSTOPERATIVE MANAGEMENT	COMMENTS
CASTRATION (example 1)	Premedication - xylazine 1.0 mg/kg IV	Induction - chlorbutol 0.04-0.06 mg/kg IV - ketamine 2.0-2.5 mg/kg IV Maintenance - xylazine 0.5 mg/kg IV - ketamine 1.0 mg/kg IV Somatic cord or testicular block - 2.0% lidocaine 10-15 mL/site	- fentanyl 2.0 mg/kg IM once daily for 1-3 days	- Multimodal analgesic therapy - Smooth induction with good intravenous musculature	DEHORNING In calves under 6 months of age	Sedation - xylazine 0.5-1.0 mg/kg IM	Conscious sedation - 2.0% lidocaine 1.5 mL/site Somatic cord or testicular block - 2.0% lidocaine 5-10 mL/site	- Integren 3.0 mg/kg IM once daily for 1-3 days	- Multimodal analgesic therapy - This protocol can be used in older calves if the dose of xylazine is modified to provide adequate sedation	CRYPTORCHID CASTRATION AND INGUINAL HERNIA REPAIR in pigs between 2 and 6 weeks of age (example 1)	Premedication - Acepromide 1.0-2.0 mg/kg IM	Induction - Thiopental 8-12 mg/kg IV to effect Inguinal block - 2.0% lidocaine 0.4-0.6 mL/site	- Integren 3.0 mg/kg IM - Pigs should be quiet and kept warm and dry until they are alert and able to move	- Multimodal analgesic therapy - Intravenous acetaminophen - Intravenous fentanyl - Intravenous xylazine - The total dose of drugs should not exceed 10 mg/kg
CASTRATION (example 2)	Premedication - xylazine 1.0 mg/kg IV - detomidine 0.01 mg/kg IV	Induction - ketamine 2.0-2.5 mg/kg IV Maintenance - xylazine 0.5 mg/kg IV - ketamine 1.0 mg/kg IV Somatic cord or testicular block - 2.0% lidocaine 10-15 mL/site	- Fentanyl 1.0 mg/kg IM once daily for 1-3 days	- Multimodal analgesic therapy - Smooth induction with good intravenous musculature	REPAIR OF UMBILICAL HERNIA in calves under 3 months of age (example 1)	Sedation - xylazine 0.5-1.0 mg/kg IM	Epidural anaesthesia - detomidine 0.01 mg/kg IV - 2.0% lidocaine 1.2-1.5 mL/kg	- Integren 3.0 mg/kg IM once daily for 1-3 days	- Multimodal analgesic therapy - Epidural administration of detomidine may cause hypotension and hypothermia	CRYPTORCHID CASTRATION AND INGUINAL HERNIA REPAIR in pigs between 2 and 6 weeks of age (example 2)	Premedication - Acepromide 1.0-2.0 mg/kg IM	Induction - ketamine 1.0-2.0 mg/kg IV Inguinal block - 2.0% lidocaine 0.4-0.6 mL/site	- Integren 3.0 mg/kg IM - Pigs should be quiet and kept warm and dry until they are alert and able to move	- Multimodal analgesic therapy - Low dose ketamine (1-2 mg/kg) produces immobility - High dose ketamine (3-5 mg/kg) produces anaesthesia - The total dose of drugs should not exceed 10 mg/kg
REPAIR OF INGUINAL OR UMBILICAL HERNIA	Premedication - xylazine 0.5-1.0 mg/kg IV	Induction - chlorbutol 0.04-0.06 mg/kg IV - ketamine 2.0-2.5 mg/kg IV	- Fentanyl 1.0 mg/kg IM once daily for 1-3 days	- Multimodal analgesic therapy - Smooth induction with good intravenous musculature	REPAIR OF UMBILICAL HERNIA in calves under 3 months of age (example 2)	Premedication - Acepromide 1.0-2.0 mg/kg IM	Induction - Thiopental 8-12 mg/kg IV to effect Inguinal block - 2.0% lidocaine 0.4-0.6 mL/site	- Integren 3.0 mg/kg IM once daily for 1-3 days	- Multimodal analgesic therapy - Epidural administration of detomidine may cause hypotension and hypothermia	BOAR CASTRATION (example 1)	Premedication - Acepromide 1.0-2.0 mg/kg IM	Induction - Thiopental 8-12 mg/kg IV to effect Somatic cord or testicular	- Integren 3.0 mg/kg IM	- Multimodal analgesic therapy - Intravenous acetaminophen - Intravenous fentanyl - Intravenous xylazine - The total dose of drugs should not exceed 10 mg/kg

MANDATE

The Sir James Dunn Animal Welfare Centre (SJDAWC) exists to promote animal welfare by generating and disseminating impartial and scientifically based knowledge and understanding of animal welfare issues.

The Centre facilitates, focuses, and coordinates academic and research resources at the Atlantic Veterinary College to carry out animal welfare research and education, and to provide information and advice to industry, government, organizations, and the public.

Goals

1. The SJDAWC seeks funding for, undertakes, promotes, and supports animal welfare research projects and service activities at the Atlantic Veterinary College.
2. The SJDAWC serves as a resource centre to compile and generate information relevant to the welfare of animals.
3. The SJDAWC strives to raise the awareness of the public and of 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 Friends of the Christofor Foundation.