A large amount of research has been conducted, over the last several decades, into developing alternative husbandry systems to try to answer consumer concerns about the welfare of farm animals kept intensively. Researchers have focused on developing alternative systems that provide the opportunity for animals to express behaviour that is important to them, while retaining economic viability, and maintaining a safe, and reliable food source for consumers.

**Group housing systems provide sows the chance for regular activity and movement.**

The University of Guelph Swine Unit, located at Arkell Research Station, has recently renovated a gestating room, changing from individual stalls to a group housing system for sows. Traditionally, gestating sows have been housed in individual stalls that are usually about 2 m long and about 65 cm wide. Individual stalls have been criticized for restricting movement of the sow and impeding the performance of natural behaviour, leading to frustration and decreased welfare. Group housing systems provide sows the chance for regular activity and movement, the opportunity for social behaviour and the performance of more natural behaviour patterns. However, group housing systems are not without their own problems, such as disease and parasite infestations (particularly if they are outdoor systems), increased aggression, greater variation in weight gain, and lameness. It is thought that all of those problems can be controlled with improved management, and the studies at Arkell, described here, were designed to investigate the aggression that occurs with group-housed sows.

Graduate Student Monica Séguin, with Professors Tina Widowski and Dave Barney, looked at assessing the group housing system at Arkell by investigating the effect of stocking density and pen size on the behaviour and performance (body condition, number of piglets born, number of piglets weaned) of pregnant sows. Three different stocking densities were investigated in two different pen sizes.

When unfamiliar sows are put into groups, they will fight and this results in a social hierarchy being established within their group. These fights cause scratches on the skin, and are a short-term consequence of group housing. The number and severity of skin scratches (measured on the shoulders using a 6 point scoring range) was...
In the News...

OSPCA Welcomes Report of the Meat Regulatory & Inspection Review


The OSPCA was consulted during the review process and made several suggestions; many of which were incorporated into the Recommendations outlined in the Report.

Animal welfare issues are addressed throughout the Report, covering areas such as animal transportation, livestock community sales, provincially licensed abattoirs and illegal slaughter operations. The Report identifies the need for, and importance of, animal handling and welfare standards, as well as the role the OSPCA plays in ensuring compliance and enforcement.

Implementation of the Report by the provincial government is pending. For a copy of the full report please visit: www.attorneygeneral.jus.gov.on.ca/english/about/pubs/meatinspectionreport/

UK Animal Welfare Bill

In July 2004, the UK government launched a draft Animal Welfare Bill, compiled after an extensive public review of existing animal welfare legislation that dated back over a century. The new draft bill is a key component of the Department for Environment, Food and Rural Affairs' (DEFRA) Animal Health and Welfare Strategy launched in June 2004, and brings together all welfare legislation relating to farm and non-farm animals.

The new bill seeks to provide a clearer definition of animal welfare and animal cruelty, and seeks to impose a 'duty of care' to all animal keepers. The new bill also provides investigators the power required to adequately investigate and protect animals being treated inhumanely or at risk of being so treated.

Increasing the age permitted to purchase an animal (from 12 year to 16 years old), the banning of cosmetic procedures on dogs (such as tail docking), and the banning of using animals as prizes were other items mentioned in the draft bill.

The draft bill is currently in pre-legislative session. For a full copy of the draft Animal Welfare Bill, please visit: www.defra.gov.uk/animal/welfare/default.htm

First Lifetime Ban for Puppy Mill Owners

On July 14, 2004, Karen McEwan and Bruce Poliquin became the first puppy mill operators in Ontario to receive a lifetime ban from breeding dogs or cats for sale. The couple was charged under the Ontario SPCA Act following the rescue of 63 dogs, six cats and seven chickens by the OSPCA from a property in the Township of Arran-Elderslie in Bruce County in December 2003.

Both were charged with eight counts of violating the Act, including failing to provide adequate: food, water, protection from the elements and medical attention when an animal is sick. They were also charged with confining dogs in an enclosure with inadequate space, unsanitary conditions, inadequate ventilation, and with one or more animals that may pose a danger.

In addition, the couple received a three year probation prohibiting them from owning or possessing any animals, and fines of $3000 (McEwan) and $1500 (Poliquin). The couple plead guilty to all charges.

One of the dogs, and all six cats were euthanized on humane grounds, however, the remaining 62 dogs were adopted into new homes.
Kentucky Fried Chicken (USA) Supplier Accused of Animal Abuse

Kentucky Fried Chicken (KFC) USA purchases approximately 700 million chickens per year to meet the demand of their US market. Employees at a slaughterhouse in Moorefield, West Virginia - owned and operated by the Pilgrim’s Pride Corporation - were caught on videotape carrying out what appeared to be vicious and cruel acts to live chickens. The video coverage was recorded by a representative from People for the Ethical Treatment of Animals (PETA) who worked undercover at the slaughterhouse from October 2003 to May 2004.

When evidence of the alleged abuses was brought to the attention of officials at the KFC Corporation, the immediate dismissal of the workers was requested. KFC emphasized that these abuses were in direct conflict with their animal welfare policies and that they would terminate their relationship with Pilgrim’s Pride should abuse be repeated. Pilgrim’s Pride have stated that they were “appalled and outraged” by these allegations, and that they would be taking several steps to get to the bottom of the incident.

A day after the allegations were made, Pilgrim’s Pride terminated 11 employees from the Moorefield plant including one superintendent, one supervisor, one foreman and eight hourly employees. As well, Quality Assurance Monitors were placed on all shifts at the Moorefield plant to audit plant procedures while the investigation continues.

In late September the prosecutor assigned to the case was asked to step down due to an alleged conflict of interest. The new prosecutor assigned to the case is still reviewing the evidence. The PETA accusations at the Pilgrims Pride slaughterhouse are unrelated to KFC Canada Operations. All of KFC Canada’s 750 independently owned and operated restaurants are supplied by Canadian producers.

Opportunities for Further Study at the UofG in Laboratory Animal Science

The University of Guelph offers licensed Canadian veterinarians two opportunities for pursuing further studies in laboratory animal science: graduate programs in laboratory animal science and a certificate in laboratory animal medicine. Both programs are coordinated by Dr. Patricia Turner, Pathobiology.

The graduate programs (Diploma, DVSc, or PhD), include coursework and applied training in laboratory animal medicine and pathology, as well as research experience (the intensity of the research component is dependent upon the program). Students enrolled in the DVSc graduate program have the unique opportunity to learn their applied skills at four institutions: the University of Guelph’s Animal Health Laboratory; McMaster University in Hamilton; the University Health Network in Toronto; and the University of Western Ontario in London.

This network of institutions allows students to take advantage of a wide range of species and projects at each facility, including the opportunity to develop several mentors in the area, and a strong skillset in laboratory animal pathology, clinical medicine and behaviour, ethics and animal welfare, environmental enrichment, facility management, administration and design. Thus the traditional emphasis in laboratory science of hygiene and caring for the animals’ physical needs is now being complemented by appreciating their mental states and behavioural needs.

For more information regarding graduate programs in this area, visit www.ovc.uoguelph.ca/pathobio/graduate.shtm

New this fall, the Office of Open Learning offers licensed Canadian veterinarians a Certificate in Laboratory Medicine. This certificate is designed to provide entry-level continuing education and applied training for veterinarians currently working in the field of laboratory animal medicine. The certificate offers practicing veterinarians online coursework coupled with three, one week placements at regional training centres. In total, the certificate consists of 160 hours of study and provides practitioners with Continuing Education credits that may be used to maintain licensure. For more information on the Certificate in Laboratory Medicine, please visit: www.open.uoguelph.ca/offerings/program.cfm?PID=59
This year the Toronto Zoo celebrates its 30th anniversary. Since its opening in 1974, the Zoo has aimed to provide its animals with the highest quality care possible. Many members of the public never have the opportunity to work closely with wild animals, but do have pets of their own. In addition to veterinary care and proper nutrition, many pet owners recognize the additional need to also provide for the psychological well being of their animals; this often involves toys, treats, music, training and/or exercise. While the needs of wild animals kept at the zoo may differ from animals that have been domesticated and live in our homes, they do need regular veterinary care, proper nutrition and an environment that provides for their psychological well being.

**Environmental enrichment aims to find the right amount and type of stimulation for the animal.**

Environmental enrichment avoids finding the right amount and type of stimulation that an animal needs to stay healthy and prevent the development of psychological problems. When zoo animals are provided with suitable environmental enrichment, this often results in the animals behaving more like they would in the wild, which is more exciting to visitors at the zoo, in addition to being beneficial to the animals. For example, one of the abnormal behaviour of carnivores often witnessed in a zoo environment is pacing. Designing an opportunity for a carnivore to stalk, hunt and catch their food would keep them stimulated and alert throughout the day, thereby giving them the chance to behave as they would in the wild.

The Toronto Zoo is continually improving the environment it provides to the animals. The Animal Care Team at the Zoo are now devising a more formalized program to document and expand their enrichment efforts to make sure that all of the animals are receiving the optimal amount and type of stimulation. With over 5000 animals representing 460 species, this is an ambitious, yet rewarding undertaking.

There are many different ways of providing an animal, or groups of animals, with enrichment. It can be as simple as adding a new branch, spreading scents around the enclosure (such as perfume or spices), or placing the animal’s food in a closed box which it has to manipulate to get the food out. The Zoo has laid out a baseline program for the keepers that incorporates seven different categories (see list on opposite page). A large manual exists for the Keepers that outlines all the various enrichment tools available for their use. From this listing, the Keepers can randomly choose something from one of the

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**Environmental Enrichment at the Toronto Zoo**

Carol Goldschmidt, Animal Behaviour and Enrichment Consultant (carol@zooenrichment.cl), and Anne Malleau

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**Gorilla obtaining his food from a puzzle Feeder (a “basket feeder”). He must pick through the hay to get to the food items enclosed.**

**White handed gibbon getting his food from inside a cookie box, which the keepers have stuffed with the animal’s food.**

**Elephant trying to get her food from an artificial “termite mound”. The mound has a ball inside with holes, which she has to manipulate with her trunk, in order to obtain the food.**
categories on each day and then record their observations. The Keepers are also encouraged to come up with their own ideas for adding environmental enrichment. In addition, the Zoo is working towards implementing a training regime with their animals (using a reward based system) so that routine husbandry or medical procedures can be performed on them without the need for hand capturing, heavy restraint or chemical immobilization.

### Environmental enrichment categories

- **A** Scents
- **B** Exhibit Furniture
- **C** Searching/Browsing items
- **D** Items to manipulate
- **E** Items from other animals
- **F** Seasonal items
- **G** Other – including auditory stimuli, mirrors, decoys etc.

For more information on the Toronto Zoo please visit www.torontozoo.com. Further information on the enrichment program at the Zoo can be found by clicking the ‘Meet the Animals’ button at the top of the Toronto Zoo website, and following the links.

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**Links Between Toronto Zoo and UofG**

**Esther Finegan**

There are many strong and ongoing links between the Toronto Zoo and the University of Guelph. These links include those who now work at the zoo after studying at Guelph, as well as a number of recent Guelph students who have had the opportunity of working with animals at the zoo as part of their studies.

Dr David Barney, who is now the Manager of Animal Care at the zoo, studied the effects of different types of barn housing and different diets on the behaviour and welfare of dairy cattle as part of his Doctoral studies at Guelph. At last count, 48 of the animal keepers who work with Dr Barney, had graduated with a degree from Guelph before going on to work closely on a daily basis with the animals at the zoo. Both Michelle Shaw, supervisor of Animal Nutrition at the zoo, and Shannon Livingston, who works with Michelle, have Masters degrees in Animal Nutrition from Guelph. Michelle was one of the first people to do a scientific study of seahorse nutrition, and Shannon studied how well lions, snow leopards and cheetahs are able to digest some of the diets commonly fed in zoos.

Several recent Masters students at Guelph have chosen to study the nutrition of zoo animals. Amy de Vos was interested in the diet of New Guinea Walking Stick insects. Marilyn Jankevicius has been looking at the acceptability of bran muffins to Gorillas, Orangutans, Mandrills and Spider Monkeys as a means of increasing fibre in their diets, while Adam Craig has investigated whether the extra fibre in the muffins has helped to improve the digestion of the Gorillas and Orangutans.

Further links between the zoo and the university involve the welfare of the zoo animals. Recently special shade ‘umbrellas’ have been designed for the elephants and giraffes when they are outdoors during hot summer weather. This summer Dr Suzanne MacDonald from York University, the Behaviourist at the Toronto Zoo, and Dr Esther Finegan from Guelph have studied the elephants to find out whether they use the new shade ‘umbrellas’, and if they do whether there is sufficient shade for all seven elephants. Suzanne and Esther have also been interested to learn whether the elephants flap their ears to help them keep cool in the summer. Dr Ian Duncan, who holds the Chair in Animal Welfare at the University of Guelph, also serves as a member of the zoo’s Animal Care Committee. This committee oversees the care and housing of all the animals at the zoo, and all research studies which take place at the zoo.
Spotlight on Faculty: Dr. Georgia Mason

This Fall welcomes the arrival of a new faculty member specializing in Animal Welfare in the Department of Animal and Poultry Science at the University of Guelph. Dr. Georgia Mason joined the UofG faculty after being awarded the position of Canada Research Chair in Animal Welfare by the National Sciences and Engineering Research Council (NSERC).

A love of animals led Dr. Mason to begin her career in veterinary studies at Cambridge University. After two years of veterinary studies, Dr. Mason realized that this did not satisfy her keen scientific interest in biology. As a result she switched to the zoology department where she completed her first degree. She then went on to take her PhD on stereotypical behaviour in carnivores.

**Georgia is developing better ways of assessing animal welfare.**

Upon completing her PhD, Dr. Mason was granted a Research Fellowship at Cambridge where she investigated the effects of early experience and weaning age on abnormal behaviour in fur animals.

She also became interested in measuring animals’ motivations to perform natural behaviour when in captive environments, for instance by seeing how hard they will work for the opportunities to behave in certain ways.

Dr. Mason was then awarded a five-year Research Post at Oxford University running vertebrate practical classes for the undergraduate Zoology program, where she taught students Vertebrate Evolution and Physiology. At the end of her post, Dr. Mason was awarded a Biotechnology and Biological Sciences Research Council David Phillips Research Fellowship at Oxford University, allowing her to build up a research group of doctoral students and post-doctoral researchers, working with a range of species from mice to elephants.

Dr. Mason continued her research investigating how maternal influences, such as weaning age, shape life-long stress responses. She combined this with interests in developing better ways of assessing animal welfare and understanding why species differ in responses to captivity (e.g. why some zoo animals show more stereotypies than others).

Here at Guelph, Dr. Mason will continue to investigate the effect of early experience and weaning age, especially on animals’ long-term abilities to cope with stress and their tendencies to develop abnormal behaviour. She will also continue working on refining the way we assess welfare, for example by measuring stereotypy levels or stress hormones. By doing this, she aims to increase understanding of the motivational factors behind abnormal and normal behaviour, and how to use this understanding to improve animal care and welfare.

...continued from page 1

measured before and after mixing, and on a weekly basis thereafter for 5 weeks. In addition, the sows were given a body condition score (which is a visual test that assesses their body fat content). The body condition score was used to investigate the effect of the feeding system being used. In the group housing system at Arkell, sows are fed in groups, rather than using individual feeding stations. This results in sows competing with each other for food. Throughout pregnancy, managers try to maintain a constant body condition since, if sows get too fat, they can have trouble giving birth, and if they get too skinny, this might indicate poor welfare.

Sows housed in traditional gestation stalls were used as a reference population, to give an indication of how the sows in the group housing system were performing. Results indicate very little difference in any of the performance data between the two housing systems although sows housed in groups did exhibit signs of fighting (ie scratches on shoulders). Of course the group housed sows were able to engage in a much more extensive repertoire of behaviour.

Monica is currently finishing the second project in her MSc. which investigates the presence of a boar on the formation of the social hierarchy in newly mixed sows.
Increased Welfare Leads to Increased Productivity

Penny Lawlis, Animal Care Specialist, Ontario Ministry of Agriculture and Food

According to Dr. Paul Hemsworth, a University of Melbourne agriculture, forestry and horticulture professor and director of the Animal Welfare Centre in Australia, the most limiting factor in animal productivity and welfare is the human factor.

Aversive handling results in pigs being less willing to approach humans.

Hemsworth has looked at ways to increase the welfare and productivity of pigs through improved handling techniques. However, simply showing stockpeople the best way to handle pigs is not the answer. Hemsworth advocates changing the attitudes of stockpeople towards their pigs. The change in attitude ultimately leads to a change in behaviour at the farm level. This approach is known as cognitive-behavioural therapy.

During the normal course of a day, stockpeople and pigs frequently come into contact with one another. Pigs are occasionally restrained and subjected to some form of management or health procedure that requires even closer contact. Human behaviour during these interactions influences the pig’s response. These interactions can also affect the stockperson, influencing work-related factors such as job satisfaction.

Observations in the Australian pig industry have revealed significant relationships between: 1) the attitudes of stockpeople towards interactions with pigs; 2) the behaviour of the stockpeople; 3) the behavioural response of breeding pigs towards humans; and 4) the reproductive performance of pigs. Experiments involving short, daily aversive handling treatments (for example, brief shocks or slaps) resulted in pigs being less willing to approach humans.

Hemsworth points to handling studies that have shown that pigs are very sensitive to brief tactile interactions from humans. Negative tactile interactions, imposed briefly, but regularly, will produce high levels of fear of humans.

This fear of humans has been shown to markedly reduce the growth and reproductive performance of pigs. In a study conducted on 19 farms in Australia looking at productivity and the time it took pigs to approach humans, Hemsworth found high variability in both measurements. For example, on the various farms, the average amount of time it took the pigs to approach the stockperson varied from 80 to 160 seconds, and production varied by 20%.

The differences in productivity were attributed to the adverse effects of fear. Fear leads to the development of a physiological chronic stress response in pigs, as well as the potential for injuries while trying to avoid human contact.

Based on his research, Hemsworth has developed and delivered a commercial multi-media training program, called ProHand, which has successfully improved stockperson attitudes and behaviour, as well as pig behaviour and productivity in Australia. Such a training program has had the added effect of reducing staff turnover and increasing job satisfaction.

Dr. Paul Hemsworth was the most recent F.W. Presant Lecturer at the University of Guelph. He visited the campus for a week in October 2003 and gave a public lecture entitled “Does the Animal Caretaker Need to Care?: The Importance of Human-Animal Interaction for the Welfare of Farm and Companion Animals”. There was an audience of about 160 people in attendance including students, faculty, producers, veterinarians, and extension staff.

In addition to the public lecture, Dr Hemsworth gave two guest lectures in undergraduate courses, spoke at the students’ Animal Science Society meeting, had several informal meetings over the course of the week with graduate students and faculty in OAC and OVC, and had meetings with representatives of Ontario Pork and several of the local meat packers.

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Ontario Veterinary College Animal Welfare Club - Fifth Annual Welfare Forum

On Saturday, October 2, 2004, the OVC Animal Welfare Club hosted the 5th annual Animal Welfare Forum. A one-day event, the Forum allowed participants to enjoy four lectures and provided them with the opportunity to participate in two workshops.

All monies collected through donations from the event are used to support an annual scholarship at the University of Guelph. The $1000 scholarship is awarded to a graduate level student conducting research in animal welfare. Stephanie Torrey, a PhD candidate in the Department of Animal and Poultry Science at the University of Guelph, received this award in 2003 for her work on the welfare of neonatal piglets.

This year’s Forum was a huge success. All available places were accounted for a week before the scheduled event, and 160 people came to the forum. Speakers this year included Dr. Georgia Mason from the University of Guelph, Dr. Dave Barney from the Toronto Zoo, Dr. Randy Lockwood from the Humane Society of the United States and Dr. Denna Benn from the University of Guelph. The speakers covered a wide range of interesting topics including: welfare problems in zoo animals; the use of environmental enrichment and training as tools to improve the welfare of zoo animals; the use of veterinary forensics to investigate animal cruelty; and animal welfare initiatives by the Canadian Veterinary Medical Association. Workshops were conducted by John Wade, who looked at training problem dogs, and by Dr. Randy Lockwood, who showed participants how to document and gather evidence for cases where animal abuse is suspected.

The 2004 Forum featured - for the first time - a Student Research Poster Competition, sponsored by the Canadian Veterinary Medical Association (CVMA) Animal Welfare Committee. Forum attendees were able to explore the various posters on display that highlighted animal welfare research being conducted at the Ontario Veterinary College.

An expert panel of judges ranked the field of student projects through an evaluation process that placed emphasis on the students’ ability to discuss their project objectives, results and conclusions as they relate to the welfare of animals.

Dr. Denna Benn, Chair of the CVMA Animal Welfare Committee, awarded three cash prizes to student researchers who presented posters dealing with the welfare of pigs during transport (Janet Sunstrum); elephant conservation and community relations efforts in Zimbabwe (Tina Bruaset); and the welfare to piglets at weaning (Melissa Madden).

The success of this year’s Fall Forum was due in part to the generous support of participants and sponsors. This year’s sponsors were the Canadian Farm Animal Care Trust, the Animal Welfare Foundation of Canada, the Colonel K.L. Campbell Centre for the Study of Animal Welfare, cfru 93.3fm, Starbucks Coffee – Stone Road Mall, the Canadian Veterinary Medical Association, IAMS Company, the Wellington Maze, and the River Run Centre.

For more information on the OVC Animal Welfare Club, please visit: www.ovc.uoguelph.ca/Associations/AWC/

CSAW NEWS

Our redesigned Web site is finally up and running again. Please visit frequently as we will be adding to it on a regular basis. Our Web address is www.aps.uoguelph.ca/~csaw/

Thanks to everyone who sent comments on our last newsletter and suggestions for future issues.

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MISSION STATEMENT

As a group of individuals with diverse interests and views, our primary goal is to promote the welfare of animals through research and education.

STUDENT NEWS

In September 2004, Andrea Bruni successfully defended her MSc thesis, Investigations into the effect of cold draft and feed restriction on the behaviour of newly weaned piglets.

In October 2004, Dave Svab successfully defended his MSc thesis, A quantitative comparison of aggressive and sexual behaviour in intact and castrated male growing pigs reared in groups.