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knowledge
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AFNS Mission Statement

To serve the community through excellence in teaching and research in:

- efficient and sustainable agricultural production
- value-added processing
- food safety
- human health

to improve the health and quality of life

Growing success

The Department of Agricultural, Food and Nutritional Science once again can look back on the past year with a great sense of pride. Its achievements build on the successes of previous years and point towards even greater accomplishments in teaching, research and community service in the years ahead.

The Department is on the brink of some exciting developments in 2002 including a "Grand Celebration" of the opening of new facilities at the Edmonton Research Station such as a \$5.7 million Swine Research Centre and a state-of-the-art indoor composting facility. As well, 2002 will see completion of major laboratory renovations on the 3rd floor of the Agriculture Forestry Centre to accommodate expansions in the area of human nutrition.

Construction of a new Meat Safety and Processing Research Centre is targeted to begin in 2002, with funding provided by both the provincial and federal governments and the private sector. The facility will serve the growing value-added agri-food industry in Alberta, providing expanded space for research and training of graduate students in food safety and food product development.

Following on a long tradition, the Department will continue to forge links with other faculties on campus. A prime example is the evolving partnership with the Faculty of Medicine in the creation of the Diabetes Research Institute involving a strong core of human nutritionists from AFNS.

In the upcoming year, students in Agriculture, Food Science and Human Nutrition will continue to benefit from generous scholarship programs established within the Faculty over the past three years, including the Bar None Scholarships which were awarded for the first time in 2001. We are particularly grateful to the many donors who have so generously contributed funds to our scholarship programs.

I trust this report will provide insight into the diversity of fascinating activities occurring within the Department, and will prompt you to learn more about the Department by logging on to its website at www.afns.ualberta.ca

Ian Morrison - Dean

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Mastering the challenges

For the last five years, this Department has sought to build our scientific capacity by attracting the best minds in areas of strategic importance. We have spent almost \$20 million in upgrading infrastructure to offer both incumbents and recruits the proper tools for development, thus ensuring our status as one of the best centres in North America for teaching and research excellence.

Much of the rebuilding has been possible because of our collaboration with industry and government. Our strong relationship with the provincial government, in particular, has sparked a new strategy involving Alberta Agriculture, Food and Rural Development and the University working together to avoid duplication and achieve cooperation in agri-food research. Through the joint utilization of our assets we will be much more effective in our research and teaching efforts.

Despite these successes, we continue to face challenges in terms of core funding for faculty brought about by past and current budget cuts within the University. It is essential to raise the level of support available to researchers and staff to fulfill their maximum potential. We welcome the new Vice-President (Research) Dr. Gary Kachanoski, who has already shown a high level of commitment to agri-food research. His leadership is much appreciated as we move forward with our vision.

This annual report gives you a small taste of some of our achievements and initiatives over the past year. We are excited about building on these successes as we continue to build a world class department.

*John Kennelly - Chair
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Agricultural, Food and
Nutritional Science
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Ian Morrison (left) and John Kennelly (right)



Paul Jelen

Dr. “Whey”

Since arriving from what was then Czechoslovakia almost 30 years ago, Dr. Paul Jelen’s international reputation keeps growing. Last year was no exception as the Department’s food science professor gained even further acclaim with the addition of several more laurels to his list of awards.

The Institute of Food Technologists’ (IFT) Elizabeth Fleming Stier Achievement Award is the latest honour bestowed upon Jelen for his contributions to the food industry, academia, students and the general public.

This was the first IFT achievement award for anyone from this University. This recognition follows other recent international accolades – including two from the American Dairy Science Association – which Jelen won for career contributions in both teaching and research. Last year Jelen was awarded one of the highest Canadian food science honours, the Canadian Institute of Food Science and Technology (CIFST) Institute Award, again a first for anyone from the U of A.

Jelen’s focus has always been how whey – the green by-products from cheesemaking – can be best used for human consumption. For decades whey has been

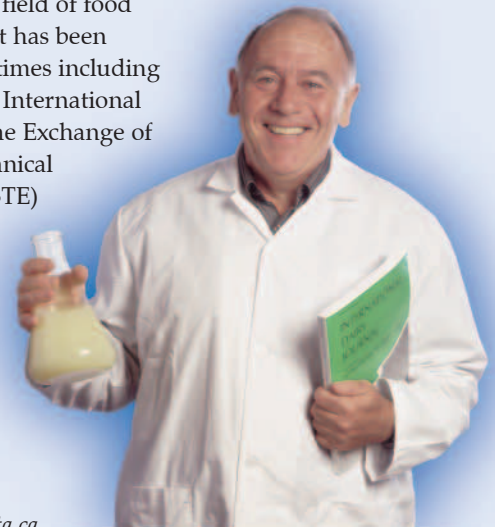
considered a waste or fit only for pigs, but it contains 50 per cent of milk’s nutrients, he says.

Jelen first became interested in his field in his native country. “On paper, whey was the main reason I was allowed to attend Minnesota for my doctoral studies. The Czechoslovakian government permitted what you were allowed to study and my research on dairy disposal was approved.”

His current activities include nutritionally important work on alleviating lactose intolerance in whey-based and other dairy products, as well as studying the effects of nutraceutical properties of whey protein, such as muscle building or increased immunity in athletes.

Jelen’s research is only part of the reason he has been a standout in the Department; the other is his work with student exchanges. His first personal experience with an exchange was soon after he graduated from the Czech Technical University with an engineering degree. “It was so fascinating to me because I realized it was possible to study abroad—a thought that was inconceivable to someone living in a communist country.”

Years later, Jelen helped a U of A food science student organize an exchange to Europe. He has facilitated numerous student exchanges over the last 20 years. Jelen also sits on several international committees that promote exchanges in the field of food science. His effort has been rewarded many times including his receipt of the International Association for the Exchange of Students for Technical Experience (IAESTE) Outstanding Service Award in 1998.



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A stellar team takes on diabetes

Over the last few years, the University of Alberta has become synonymous with groundbreaking diabetes work. The contributions made by researchers in AFNS are no exception. Ranging from the effects of infant nutrition on the disease to how vitamins play a role in developing diabetes, the Department continues to maintain an international reputation in this field.

Dr. Tom Clandinin's work is such an example. The professor of human nutrition looks at how diet affects the treatment of Type 2 diabetes. In his human/clinical trials, he examines what types of fats are beneficial in the diet of a person with Type 2 diabetes. In the past, it was recommended that people with diabetes should significantly reduce fat intake, but Clandinin's work is helping to show that different fats have different functions, some of which are beneficial to people with Type 2 diabetes.

Drs. Linda McCargar and Rhonda Bell have teamed with colleagues in Physical Education to advance research in lifestyle aspects of the treatment of Type 2 diabetes. They run a workshop for dietitians to help them incorporate the combined message of "healthy eating and active living" into their practice.

On the preventative front, Dr. Catherine Field and Dr. Rhonda Bell both have an interest in how an infant's diet can later predispose the onset of diabetes. Field studies the effect of different food components on the developing immune system, since this may be a key in the autoimmune (or Type 1) form of diabetes. Bell looks at the influence of nutrition during weaning on physiological processes such as insulin sensitivity and insulin secretion and how diet during early life may predispose the development of diabetes in adults (Type 2 diabetes).

"We definitely know that diet affects the disease but no one knows exactly how," says Field. Breastfeeding plays a protective role and tends to lower the risk of diabetes. Her goal is to find the mechanisms that might cause the preventative barrier to turn on and off.

Dr. Tapan Basu's research activities also include work on diabetes. He has found that animal models afflicted with Type 2 diabetes record low levels of Vitamin A, even when they are receiving what is considered an adequate amount in the diet. By providing higher levels of the vitamin, Basu

did you know...

Dr. Linda McCargar has been awarded the 2002 Centrum Foundation New Scientist Award by the Canadian Society for Nutritional Science for outstanding research contributions.

hopes to discover its relationship to the disease.

Dr. Noreen Willows, a post-doctoral fellow, is working with AFNS's Dr. Kim Raine to determine the biological and sociocultural causes of overweight in Cree children living in James Bay, northern Quebec. The James Bay Cree have one of the highest incidence rates of gestational diabetes in the world, and this may contribute to overweight in the children. Willows' findings will have a substantial impact in helping this group design and set priorities for intervention programs.

Several of the AFNS professors sit on various national committees related to diabetes including the Canadian Diabetes Association and the Canadian Institutes for Health Research. Once a month they meet with other colleagues from campus as part of the Muttart Diabetes Research & Training Centre – a group that promotes co-operation among diabetes-related researchers.

Dr. Bell

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Rhonda Bell and research group



Jerry Leonard

Packing an environmental punch

Since Dr. Jerry Leonard first became involved in the area of agricultural composting 10 years ago, he has had his work cut out for him. With the increase in the number of intensive animal operations in Alberta came a significant rise in the volume of manure that needed to be managed in an environmentally-sustainable way. That's where Leonard applies his research.

A bioresource engineering professor, Leonard's main research focus is general composting, a method of biologically processing putrescible material into a stable product that upgrades the soil by improving its water-retention capabilities and providing nutrients for vegetation. He studies how physical properties, such as porosity and bulk density, can be manipulated to achieve the most rapid composting processes and in the safest way. He also examines the gaseous emissions from composting, particularly ammonia – a key gas due to its nitrogen make-up.

opportunity

Leonard, whose expertise will be shared with the City of Edmonton when he is seconded to its Regional Waste Management Centre this summer, has witnessed a real shift in attitude over the last decade. "When I started, the attitude was, 'I produce beef, eggs or milk. I don't produce manure.' Now people are starting to accept that they do produce manure and that there is actually a value to it. We've come a long way," he says.

No one is better suited to ensure the Department keeps up with changing manure management technology than Leonard. As the lead academic involved in the development of the new enclosed composting facility at the Edmonton Research Station, he will ensure that the plant operates in an environmentally-friendly and efficient way.

The \$1.5 million centre will treat waste from the swine, dairy, poultry and metabolic research units and is capable of handling 10,000 tons of manure and bedding materials a year. Manure will be piped underground to the enclosed composting structure, eliminating the need for outdoor manure piles, which rely on odour-causing anaerobic bacteria for their decomposition.

"Although the technology is fairly well established, what makes the unit at the ERS unique is its ability to compost liquid hog manure," says Leonard. Dry material, such as straw and wood waste, will be mixed with the manure to reduce the moisture content while keeping the carbon content up. "At the most basic level, we're trying to optimize the composting process and to make sure the manure is handled in a safe way. We've made significant progress and we've built a research program that I believe is well regarded and well known in Canada and North America."

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More than a field of dreams

Adding horsepower to an already strong Department, the completion of four new and expanded facilities at the University's Edmonton Research Station (ERS), is helping to keep AFNS at the forefront of agricultural research.

The opening of these facilities marks the end of an unprecedented period of construction at the ERS. Between 1998 and 2002, a host of improvements were made to the poultry, dairy, swine and metabolic units, and a new enclosed composting facility was built. Turning researchers' dreams into reality required the cooperation of numerous industry and government partners.

Topping the list of construction is the brand new Swine Research & Technology Centre (SRTC), a \$5.7 million research facility that will consolidate all swine research at the ERS under one roof. The SRTC contains its own surgical suite, laboratories for intensive swine nutrition research and a major animal housing wing for breeding management and research. Alberta Pork and the Genex Swine Group were major contributors to this facility.

The Dairy Research & Technology Centre (DRTC) received a major \$2.7 million expansion to its existing dairy facilities at the ERS. Over the past year, extensive renovations resulted in the installation of a new milking system, the creation of a milk pre-processing laboratory, and the development of an expanded sample processing and laboratory area. According to the DRTC's manager, Brian Cameron, "these improvements have greatly improved our efficiency and have opened new opportunities for research involving the process engineering of milk."

Another upgraded ERS facility is the Laird W. McElroy Environmental and Metabolism Research Centre, which underwent a \$500,000 expansion to create improved penning and feed storage capabilities, as well as the development of new beef cattle respiration chambers. Further improvements will be made as funding becomes available.

Given the beehive of construction activity that has occurred at the ERS over the last three years, one might expect AFNS to catch its breath and put further development plans on the back burner for awhile. Instead, the Department is preparing to push forward on its latest development project, a Meat Safety and Processing Research Centre.

breaking news....

Food Microbiologist Dr. Lynn McMullen's \$1.2 million Canadian Foundation for Innovation (CFI) award will develop a world class meat safety centre.

"The new Meat Safety Centre represents the first stage of a major agri-food and agri-materials processing research complex at the ERS," says AFNS research coordinator, Neil Taylor. "This value-added processing complex and the strong animal and crop units already in place, will give us a research capability unsurpassed in Canada."

For those interested in the growth of agricultural research at the ERS, stay tuned, it appears the best is yet to come.





Lloyd Dosdall

Eliminating the bugs

Dr. Lloyd Dosdall's biggest challenge is so tiny, most people cannot even see it. But for thousands of Canadian farmers, the problem is a serious one.

Dosdall is an entomologist who started in the Department in November 2001 as part of a co-operative agreement between AFNS and Alberta Agriculture, Food and Rural Development (AAFRD). The associate professor focuses on developing integrated management strategies for controlling insect pests in Alberta crops.

His current research deals primarily with the cabbage seedpod weevil, a small insect that poses a serious threat to western Canada's canola industry. The only existing control strategy available to growers is application of broad-spectrum chemical insecticide, which is costly to farmers and poses risks to human health and the environment. Dosdall is working to find alternatives to insecticide use by identifying appropriate cultural control strategies and enhancing 'natural' control through the use of parasites that attack the weevil. In addition, he is working with geneticists to develop canola varieties that will eventually be weevil resistant.

"AFNS has a strong reputation for providing quality instruction to students and for being at the forefront of agricultural and food science research," Dosdall says. "I'm happy to be part of such a vibrant group, and to add core strength in the area of agricultural entomology."

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Making a better bird



Gaylene Fasenko

Dr. Gaylene Fasenko just can't stay away from the University of Alberta. She earned her undergraduate and master's degree here, left to complete her PhD at North Carolina State University and returned in 1997, as a research associate. Her dedication paid off with her recent hiring as an assistant professor in poultry science, in a position funded by the Poultry Industry and Alberta Agriculture, Food and Rural Development.

Fasenko, who works with the Alberta Poultry Research Centre, says it was easy to return to such an outstanding Department. "The University of

Alberta has the best research hatchery in North America," says Fasenko. "There are also world-class researchers here, like Dr. Gwen Allison (molecular microbiology), and Dr. Frank Robinson (poultry management and physiology), who are willing to collaborate. I have always believed that people working together produce more than the sum of their parts."

Fasenko's current projects include examining the embryonic metabolism of different genetic strains of domestic poultry – knowledge that will help to produce more and healthier chicks and poults.

Fasenko is also collaborating with Dr. Allison on a study that may reduce the numbers of pathogenic bacteria such as Salmonella sp. in poultry, to improve the health of the growing bird which ultimately has implications for human food safety.

Fasenko hopes to develop an internationally - recognized research program. "I care and hope that my research will make a valuable contribution to the poultry industry in Alberta and Canada."

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Gerald Tannock

An international partnership

With the addition of internationally-renowned microbiologist Dr. Gerald Tannock, the Department is building a partnership halfway around the world. Tannock, who joined AFNS in September 2001, as part of a \$2 million investment by AVAC Ltd., hails from the University of Otago in New Zealand, where he continues to maintain a half-time position.

Tannock's interest is largely in bacteria that inhabit the intestinal tract of animals, including humans. Crohn's disease and ulcerative colitis are two instances where gut bacteria play a detrimental role. He looks at microbes from patients with these illnesses to try to understand which particular bacterial groups are involved. "Once you start to understand what you're dealing with, you can find a remedy for it," says Tannock, who will also work with gastroenterologists in the Faculty of Medicine.

Tannock will also link with AFNS's poultry group to study optimal ways to help the birds grow without antimicrobial drugs. In Europe, producers are now forbidden to use these drugs and Tannock says it will not be long until that practice is banned here. Further research will include participating on an AFNS research team headed by Dr. Feral Temelli investigating value-added products derived from barley. "This is such a huge Department and I value being part of a team made up of food scientists, nutritionists and animal scientists. In modern science, we can't do everything ourselves. Collaboration is key," says Tannock.

Dr. Tannock

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The sky is the limit

Dr. Nat Vettakkorumakankav is used to people dodging the pronunciation of his last name. He has been called Dr. Nat, Dr. Kav, Dr. Vetta, Dr. V, but the one he prefers is just "Nat."

How people pronounce his name is of no concern to the plant biochemist who joined the Department in January 2002. He is set on fulfilling grander goals. "I envision developing a proteomics-based program that would be internationally known," he said, referring to the science that identifies all the proteins present in a cell. "I believe proteomics is the place to go in a post-genomic era and it's the type of field where the sky is the limit."

Vettakkorumakankav, who worked as a senior scientist at a proteomics company in Toronto, Ontario before coming to the University, cites such examples as developing drought and disease-resistant plants or plants with superior agricultural performance. Another aspect of Vettakkorumakankav's research includes manipulating plant processes that allow them to adapt to environmental stresses, as well as understanding herbicide resistance and engineering herbicide tolerance in agricultural/horticultural commodities.

"Coming to Alberta has opened up more research doors", said Vettakkorumakankav. "Alberta's agriculture is unique, yet it has applications around the world. The research possibilities are endless."

Dr. Vettakkorumakankav

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Nat Vettakkorumakankav



Nick Wolanski

Spreading his wings

Before Nick Wolanski began his internship with Hybrid Turkey, the only time he had seen the bird was during a class field trip or at Thanksgiving dinner. Now, after eight months of working with the Kitchener, Ontario company, the fourth-year animal science student plans to enter graduate school studying – what else – turkeys!

Wolanski landed the job with a little help from AFNS poultry professor Dr. Frank Robinson who was conducting a turkey study at the time. At Hybrid, one of only three turkey-breeding companies in the world, Wolanski has spent time at the pedigree farm and the hatchery. "I was able get my hands dirty and learn at the same time," he said, adding his three years in the Department made him feel fully prepared for Hybrid. "It's great. Every student should do something like this."

Wolanski even had a chance to teach his teachers. During a break in the internship, he returned to the U of A and taught Dr. Robinson and others how to nest train a turkey.

Although Wolanski has to complete one more year of his undergraduate degree and has already been offered a job by Hybrid, he is looking ahead to his master's. He cites making industry contacts as one of the perks of such an internship and says he will likely remain in close contact with the company once his graduate studies begin.

Tasting international gold

A good coach, lots of practice and heightened taste buds were the key to Sandra Mak's win at an international dairy tasting competition in Chicago last year. Mak, a Food Science and Technology major, placed first in the butter category at the 80th Annual Collegiate Dairy Products Evaluation Contest in Chicago. It marks the first "first place" victory for the University in this category after 25 years of participation in the competition.

Participants in the sensory competition evaluate six categories of dairy foods: butter, cheddar cheese, cottage cheese, ice cream, milk and yogurt. The foods are altered and the students have to identify the defects. Butter is considered one of the most difficult categories to win.

Mak attributes her success to the patience and dedication of her coach Dr. George Patocka (research associate) with Dr. Paul Jelen's research group. The team – made up of three other Food Science undergraduate students – placed sixth in the butter category and 14th overall and was one of two Canadian universities represented. They practiced six days a week for two months to prepare for the contest. "But without Dr. Patocka's perseverance," says Mak, "we may not have done as well as we did. I hope that the new teams in the coming years will benefit as much from his tutelage as ours did."

Mak claims the experience enhanced her interest in the sensory sciences, a field she now hopes will become her career. Besides making interesting conversation during job interviews, her win allowed her to share her story with prospective students at the Faculty's Open House in December.

For undergraduate program information please contact Student Services Office at (780) 492-4933 or 1-800-804-6417 (Western Canada) or questions@afhe.ualberta.ca

did you know...

Every undergraduate student in our programs will have the opportunity to learn from a National or University Teaching Award winner!

Diversity is key

Dr. Raffick Bowen is a study in how well interdisciplinary research can work. As an undergraduate at the University in medical laboratory sciences, Bowen was learning about fat and lipid metabolism when someone recommended AFNS's Dr. Tom Clandinin for a research project. Clandinin asked Bowen to consider graduate studies in the area of nutrition and metabolism. Six years later, Bowen earned his PhD and gained invaluable experience under the internationally-renowned Clandinin.

Bowen's thesis focused on a molecule found in breast milk that is not always included in infant formula – research pioneered by Clandinin more than 20 years ago. "Dr. Clandinin has a patent on that work and is known around the world for it, so to be able to work on such an idea was exciting," said Bowen. We have shown it is definitely required for brain development.

Today Bowen is doing a prestigious postdoctoral fellowship at the Hospital for Sick Children, in Toronto where he is working as a clinical biochemist. He acts as a liaison between laboratories and physicians, often explaining what a particular lab result might mean.

His long-term goal is to be the director of a lipid reference laboratory – a centre that analyzes blood samples from people at a higher risk of developing cardiovascular disease. Bowen says his PhD in Nutrition and Metabolism gave him the knowledge to find ways to prevent high blood lipids through diet instead of drugs. "I believe in preventative medicine," he says. "We should be proactive in treating heart disease, not reactive."

Although his present and future job may sound like a far cry from studying the need for polyunsaturated fatty acids in infant development, diversity is key, said Bowen. "Every Wednesday during my graduate studies, we had a seminar with people working on proteins, fats, carbohydrates – you name it. It really broadened my horizons and forced me to think in different ways. It was one small aspect of the Department that helped me get to where I am today."

A firm foundation

Even now in his job at InterMountain Canola, AFNS graduate Trevor Miller says his education at the master's level is the single greatest resource he uses. As an

assistant Canola Plant Breeder at the Cargill division in Camrose, his main responsibilities are to assist in all aspects of canola breeding and trials.

Because of experience gained through the Department's canola breeding program run by Dr. Gary Stringam, Miller has been appointed to a Cargill team that breeds doubled haploid genotypes. Such activity requires collecting and analyzing data or selecting favourable genotypes for the development of specialty canola oils.

These specialty oils have several benefits for the public. They provide exceptional frying stability without hydrogenation, increasing frying times before the oil has to be replaced. They also eradicate that oily film that coats the kitchen when foods are fried. The oils have high oxidative properties, resulting in longer shelf-life and a reduction in harmful trans-fatty acids for the consumer.

Although his MSc – earned in January 2001 – prepared him for field work, Miller also credits his undergraduate classes as the foundation for his present career. Such courses as "Cereals and Oil Seeds", "Plant Biochemistry", and "Plant Pathology" have helped him greatly in his role at Cargill. "By knowing the 'why' along with the 'what', I can better perform my job by making independent decisions and corrections with a full understanding of what is happening."

For graduate program information please contact Student Support at (780) 492-5131 or jody.forslund@ualberta.ca



Trevor Miller



Precision ranching

Pushing the technological envelope, a team of researchers at the University of Alberta is giving ranching a whole new spin. Precision ranching is the popular name for an innovative research program in sustainable landscape and animal management systems. Or as AFNS's Dr. Mick Price, one of the lead academics on the project, says, "We're trying to use modern electronic communication technology to ensure the right animal is in the right place at the right time."

The group is creating a three-dimensional digital model of the University's ranch at Kinsella, mapping out every feature from trees to fences to animals. Details such as topography, vegetation, climate, soils and human factors will be available to the team. The philosophy behind the project is to set up a research situation where observers can actively evaluate the full consequences of ranching management decisions.

Four weather stations will monitor atmospheric conditions every second of the day while root periscopes will carry cameras underground to capture the

environment below the soil. Being able to find out what is happening to plant roots without having to dig them up is unique and invaluable, says Price. "We can identify an organism and literally come back a month later to see how it responds to snow, rain, fire, fertilizer . . . anything. We will be learning about things that were unknown before."

Cattle will be fitted with collars that track their movements and actions throughout the day, giving researchers an unparalleled opportunity to watch the animals' interactions with each other and the environment.

According to Dr. Edward Bork, a range management professor in the Department and a co-leader of the project, understanding different techniques to improve the distribution of animals in the landscape will mitigate negative environmental impacts. "At Kinsella, we can look at much more intensive management because we can control so many areas at a fraction of the cost."

Currently, the project is funded largely by a grant from Alberta Innovation and Science's Research Investment Program (ISRIP) but the professors are also applying for smaller operational grants. Setting up the remaining infrastructure is their main priority with an expected completion date of 2003. "Studies are already in the works," says Bork.

Dr. Bob Hudson from the Department of Renewable Resources will employ the technology to gauge wildlife productivity and multi-species grazing systems. AFNS's Dr. Stephen Moore has plans to use automated feed stations to track individual weight gain and food consumption by beef cattle. The collars, controlled by a Global Positioning System (GPS), will record where and how the animals spend their time once in the pasture.

"This is very, very exciting," says Bork. "It represents such an innovative way to study animal/plant interactions and will put us at the forefront of research in this area."

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Dr. Moore
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Dr. Price
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The new frontier

Although the Department is best known for its research excellence and outstanding students, it is now distinguishing itself in another area. The AFNS Web site has become the model for the other faculty websites.

Greg Cole, AFNS's Coordinator of Information Technology managed the redesign of AFNS's dynamic website. The site's content changes regularly with news items, events and other information being added daily. More than just a pretty site, however, the Department keeps on top of the Internet's fast-paced technology.

Over the past year, Cole started moving course materials online to enable students to find their class readings or assignments with a click of the mouse. He has also created templates for instructors who want to produce a course web site, making it easier for them to reach their students.

Nutrition 100 is a good example of how the Department is using the web to its advantage. A few years ago, AFNS received a \$75,000 grant from the Dairy Farmers of Canada to develop a CD ROM based on Nutrition 100's curriculum. Helen Bishop McDonald, Director of Nutrition at Dairy Farmers of Canada, says she saw the course as an opportunity to reach a wide variety of people interested in factual and up-to-date information about nutrition.

"With dairy, we know there are updates all the time and I felt confident knowing that this research would be conveyed to students," says McDonald. "Our overall review of the course was that it was very positive. It treated the four food groups, nutrients and diet-related illnesses appropriately and comprehensively."

In the summer of 2001, the content from the CD was transferred to a Nutrition 100 course web site to allow for instant changes. "The material in the nutrition course tends to change faster than in other courses," says Cole. "Moving to the web was essential in providing students with the most current information."

The Nutrition 100 material is now being converted into case-based scenarios. The first chapter will be placed within a searchable, web-based collection of multidisciplinary

teaching materials for educators across the province and beyond. An instructional designer from the University's Academic Technologies for Learning (ATL) is carrying out the conversion; the position is funded through a grant offered by the BELLE (Broadband Enabled Lifelong Learning Environment) project.

Cole says he would eventually like to see entire degrees offered completely online, permitting a greater number of students to participate in AFNS programs.

Please visit the Nutrition 100 Course at www.afns.ualberta.ca/courses/nutr100



Brian Klein (left) and Greg Cole (right)

Summary of funds

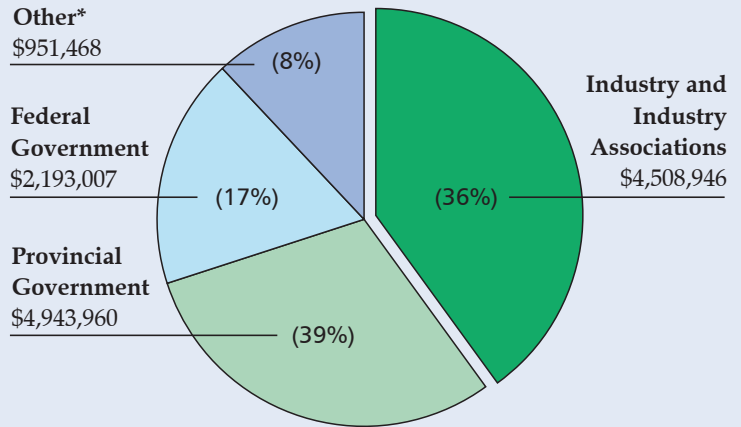
2001/02
Operating Budget **\$5,724,570**

Distribution of Operating Budget

- 66% Academic & Teaching Support
- 10% Administration and Computing Support
- 13% Central Laboratories
- 11% Research Stations

2001/02
Research Funding **\$12,597,381**

Source of Research Funds



* Non-Profit, Research Endowments, Other Government

Academic Staff

- 48 Professors
- 25 Adjunct Professors
- 7 Postdoctoral Fellows
- 25 Research Associates

Graduate Student Enrolment

- 78 MSc
- 58 PhD
- 4 MEng
- 4 MAg
- 144 Total**

Undergraduates enrolled in degree programs

- 245 BSc Agriculture (includes Pre-Veterinary Medicine)
- 43 BSc Agricultural/ Food Business Management
- 249 BSc Nutrition and Food Sciences
- 537 Total**

Central Laboratories include:

Agri-food Materials Science Centre, Food Science Facilities, Livestock Genomics Facility, Molecular Biology and Biotechnology Centre, Nutrition and Metabolism Facilities, Plant Growth Facilities, and Small Animal Facilities

Research Stations include:

Edmonton Research Station (Alberta Poultry Research Centre, Crops and Land Resources Centre, Dairy Research and Technology Centre, Laird W. McElroy Metabolic Research Centre, Swine Research and Technology Centre); Ministik Wildlife Field Station, Ellerslie Research Station and the University Kinsella Research Ranch



Gwen Allison
Food and Dairy
Microbiology

Ronald Ball
Nutrition
[Swine and Human]

Vickie Baracos
Protein Metabolism

Tapan Basu
Nutritional Biochemistry

Rhonda Bell
Human Nutrition

Peter Blenis
Forest and Plant Pathology

Edward Bork
Range Management

Robert Christopherson
Animal Physiology

Tom Clandinin
Human Nutrition

Walter Dixon
Protein
Biochemistry and
Molecular Biology

Lloyd Doslall
AAFRD
Associate Professor
in Agricultural
Entomology

Gaylene Fasenko
Poultry Embryology
and Chick Quality

John Feddes
Animal Housing

Catherine Field
Nutrition and
Metabolism

George Foxcroft
Reproductive
Physiology [Swine]

Laki Goonewardene
AAFRD Adjunct
Professor in Biometrics
[Beef]

Linda Hall
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Food Process
Engineering & Dairy
Technology

John Kennelly
Dairy Cattle Nutrition
and Metabolism

Jane King
Forage Agronomy/
Physiology

Douglas Korver
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Jerry Leonard
Bioresource
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Linda McCargar
Clinical Nutrition

Lynn McMullen
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Stephen Moore
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Jocelyn Ozga
Horticulture and
Plant Physiology

Lech Ozimek
Dairy Processing
and Technology

Mick Price
Livestock Growth
and Meat Production

Kim Raine
Community Nutrition

Frank Robinson
Poultry Management
and Physiology

Willem Sauer
Animal Nutrition

Jeong Sim
Poultry Technology

Dean Spaner
Crop Breeding and
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Peter Sporns
Food Chemistry

Gary Stringam
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Feral Temelli
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Jalpa (J.P.) Tewari
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**Thavaratnam
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Cereals, Fats and Oils

**Nat
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Our knowledge is your advantage

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