



# reachout

Faculty of Land and Food Systems  
Grounded in Science | Global in Scope

## Home Cooking Prevails

Are we living in a fast food nation?  
Not so much according to the families in a UBC study.



Dean Simmons

"I was somewhat surprised," admits Dean Simmons, an MSc student in the Integrated Studies in Land and Food Systems program.

"I was expecting to see families relying on, or even preferring convenience, restaurant and take-out foods. Instead, I found most of the families make homemade meals most of the time," says Simmons whose former jobs include Health Canada nutritionist for First Nations communities in the north and apprentice chef at Calgary's Fairmont Palliser Hotel.

For his master's thesis, Simmons looked at the relationships between how families perceive their cooking skills and the kind of foods they eat. He also explored how parents and teens learn to cook, using data from 11 rural families in the Kent District near Agassiz and 11 urban families in East Vancouver's Commercial Drive neighbourhood. The project is part of a larger study led by Assoc. Prof. Gwen Chapman investigating family food practices in 10 Canadian communities.

Simmons says preliminary findings suggest that many parents continue to value home cooking despite widespread media stories about culinary "deskilling." Moreover, parents appear to be passing on those cooking skills.

"Mothers, especially, are an important source of cooking knowledge for teens. But most of the teens' learning is happening through watching. It's more of a passive process."

And not surprisingly, says Simmons, teens show the most interest in gaining cooking skills when they're about ready to leave home.

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## Pacific Hagfish Study

Hagfish live up to their name. Resembling huge earthworms, they are brown, boneless, slimy and typically 13" long.

Homely as they are, hagfish have nonetheless snagged the attention of both Atlantic and Pacific fishermen given the growing international market – particularly in Asia.

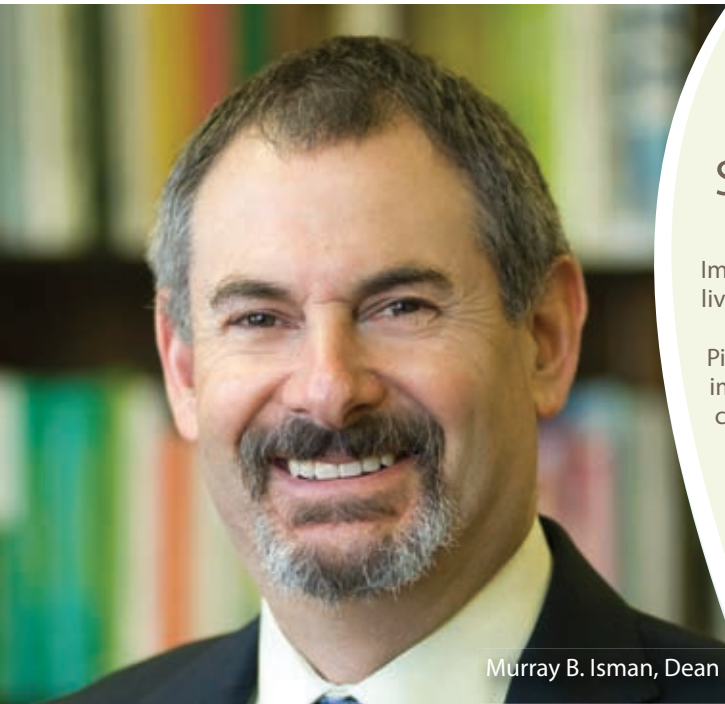
To assist B.C. fishermen, LFS student J.P. Hasteley is studying how Pacific hagfish are impacted by capture in a commercial fishery, focusing on their temperature and salinity tolerances. There have been few studies on hagfish ecology and general biology due to their inaccessibility and historically low commercial value.

Hagfish are found at depths of up to 1,000 feet beneath the ocean surface. Blind, they defend themselves by oozing slime that can swell up many times their weight in water to form a protective casing.

"B.C. fishermen want to understand more in order to develop and manage a sustainable fishery," says Hasteley, an Animal Studies Masters candidate who aims to complete his thesis by spring 2010.



J.P. Hasteley



Murray B. Isman, Dean

## UBC Farm Update: South Campus Academic Plan

Imagine UBC Farm and its surroundings as a globally relevant microcosm that lives and breathes the highest standards of sustainable practice and design.

Picture also students in every discipline – from sciences to humanities – immersing themselves in the processes and practices of sustainability that come into focus at the intersection of land, food, and community.

“This vision comes from faculty, students, staff, and community members, reflecting nearly a decade of formal and informal consultation and study,” says LFS Assoc. Prof. Andrew Riseman.

During this spring and summer, co-chairs Riseman and UBC Farm Program Coordinator Mark Bomford worked with a multi-faculty committee to articulate a South Campus Academic Plan (SCAP). The committee was struck after UBC Board of Governors directed UBC administration to develop an academic plan for South Campus.

Riseman says the draft SCAP recommendations fit well within those of UBC’s draft Sustainable Academic Strategy (SAS), one of three pillars that will form the new UBC Strategic Plan. Along with sustainability, the other two pillars are the Aboriginal Strategic Plan and the Strategic Plan for Internationalization. SCAP will undergo public consultation through the fall with a planned submission to the Board of Governors in November.

“I believe that by late 2009 or early 2010, we will be developing a South Campus implementation plan that includes a land use plan, operations plan and an overall business plan.”

### Message from the Dean

At the Faculty of Land and Food Systems (LFS), the maxim “small is beautiful” is very appropriate.

We use a “boutique” approach to research, focusing on key areas where we can make a real difference. Unlike other agriculture schools in Canada – which are about two to three times our size – LFS cannot address all facets of agriculture. This is especially true in B.C. which has more than 250 agricultural commodities.

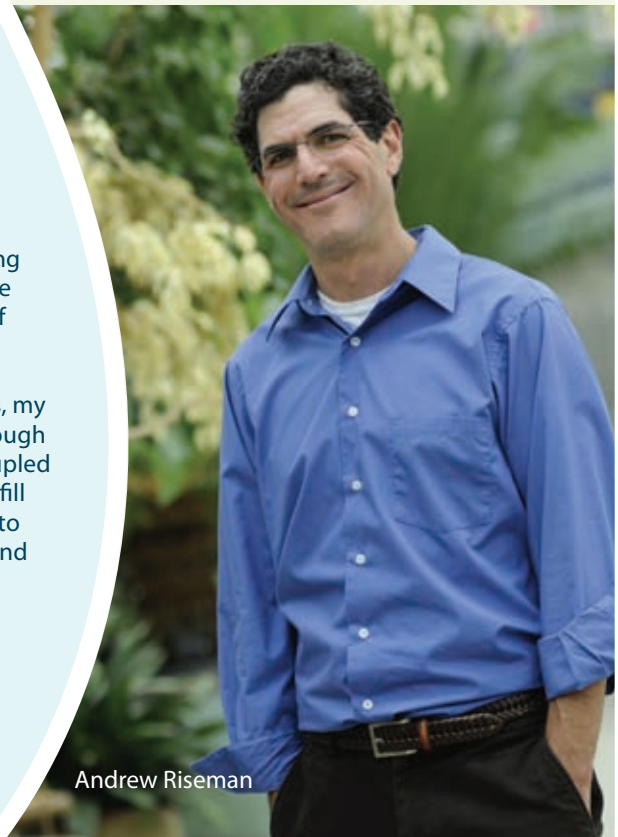
Being small, we can respond quickly to the changes around us. Our scientists are known globally for their innovation and leadership in areas such as dairy, aquaculture and wine research. Whether it is grape and wine yeast genomics or animal welfare, LFS research advances scientific knowledge while providing industry with practical solutions.

The small-is-beautiful thinking also works well for LFS students. This Faculty consistently receives campus-leading scores in the National Survey of Student Engagement (NSSE), which interviews first-year and fourth-year students at post-secondary institutions throughout North America.

Recent NSSE results show that relative to all other UBC students, LFS students report 16 percentage points higher on one of the key benchmarks: active and collaborative learning (class presentations, community-based projects, discussions and learning outside the classroom and team work in class). LFS scores are also significantly higher in terms of student-faculty interaction, another important NSSE benchmark.

Positive student feedback can be attributed directly to LFS faculty. For the past 10 years, my colleagues have made a conscious effort to build community and engage students through experiential and problem-based learning. Their commitment and teaching prowess coupled with the Faculty’s outstanding research means that UBC is indeed well positioned to fulfill our Faculty’s stated mission, that is, to educate new generations of scientists equipped to solve the fundamental issues of food, human health and sustainable use of finite land and water resources.

Murray B. Isman, Dean  
Faculty of Land and Food Systems



Andrew Riseman

## Wine Research Centre Celebrates 10 Years & \$3.4 M Genomics Project



Left to right: Hennie van Vuuren, Alan Winter, Murray Isman, Steve Lund

The UBC Wine Research Centre (WRC) celebrates 10 years of pioneering research, a state-of-the-art Wine Library and close to \$17 million in research funding, including \$3.4 million from Genome Canada and Genome B.C. for a major new project.

The "Grape and Wine Genomics" initiative was announced at an early September anniversary reception attended by 150 guests including UBC President Stephen Toope, Dr. Alan Winter, president and CEO of Genome BC, and B.C. winemakers. The project aims to unlock fundamental gene functions with grapevine and yeast cells, ultimately helping growers and winemakers to improve wine production techniques.

"Our objective is to conduct leading-edge research that will prepare the Canadian wine industry for the future," said Hennie van Vuuren, WRC Director and lead investigator.

Prof. van Vuuren is studying the function of fermentation stress response genes in wine yeasts, which are added to the grape juice during the winemaking process and are essential for converting sugars into alcohol and flavour compounds.

The project co-leader, LFS Asst. Prof. Stephen Lund, is using genomics to identify protein biomarkers that will assist grape growers to monitor how the vine and berries respond to natural and human-made environmental changes.

"Essentially, we are trying to put more advanced tools into the hands of producers," said Lund, who equates knowledge of the berry to a bit of a "black box."

## Botanical Garden Unveils Jurassic-era Tree

A Wollemi pine, one of the oldest and rarest plants in the world, was unveiled at the UBC Botanical Garden in May 2009. Fewer than 100 adult trees of this species are known to exist in the wild in their native Australia.

The Wollemi belongs to a plant family over 200 million years old. Though long thought to be extinct, the prehistoric trees were discovered in 1994 by a hiker in a rainforest 200 kilometres from Sydney, Australia.

"Our tree is a first-generation cutting from the 'King Billy' tree, the largest Wollemi pine in the wild that is estimated to be over 1,000 years old," says Douglas Justice, associate director and curator of collections for the Botanical Garden.

Dubbed "Little Billy," the three-metre tall tree is a conifer with attractive, unusual dark green foliage, bubbly bark and multiple trunks.

The introduction of the Wollemi pine also kicked off the Botanical Garden's new self-guided Prehistoric Plant Tour. Featuring more than 10 ancient species – from the *Ginkgo biloba* tree to the Chinese watershrub – the tour takes visitors back in time to see a number of fascinating plants along the path of evolution.

UBC's Botanical Garden is the oldest university garden in Canada. It spans 44 hectares and contains more than 8,000 different plants.



Wollemi pine

## Changing Faces



Erin King

James Cowling

Katie Teed

### New Faces

**James Cowling, Bookings and Administrative Coordinator, Botanical Garden**

Cowling has more than 20 years of experience in management, customer service, document production and administration. He earned a Bachelor of Arts in Writing from the University of Victoria.

**Erin King, External Relations Assistant, Dean's Office**

New to Vancouver, King had been working in the U.K. at the University of Edinburgh's College of Humanities and Social Science. She holds a Bachelor of Arts in English Drama and Theatre from McGill University and a Communications Certificate from Concordia University.

**Katie Teed, Marketing and Events Manager, Botanical Garden**

Teed brings over 10 years of experience in advertising and marketing. She holds a Bachelor of Commerce in Marketing Informatics and Strategic Planning.

**Patrick Lewis, Director, Botanical Garden**

As the Managing Director of the W. Maurice Young Centre for Applied Ethics and Director of Strategic Initiatives at the College for Interdisciplinary Studies, Lewis brings extensive UBC experience. His previous positions include research and financial manager for Genome Canada/Genome BC projects and executive director to seven provincial royal commissions and commissions of inquiry.

**Ranga Venkatachary, Acting Director, Learning Centre**

Prior to joining us, Venkatachary was the Education Coordinator in the Division of Neurology at UBC. She was also a Teaching Enhancement Specialist at the Faculty of Business Administration, SFU and a Lecturer in the Staff Training and Research Institute of Distance Education at the Indira Gandhi National Open University.

**Shinko Terencio, Leave Replacement Financial Clerk / Receptionist**

Terencio has worked for employers such as the Japan Travel Bureau International and Rogers Communications and brings with her extensive customer and administrative skills. She will be with us until April 2010.

**Barbara Wakal, Front Counter Assistant, Food, Nutrition and Health**

Wakal brings many years of experience working at educational institutions such as SFU, VSB and VCC. She holds a Master of Education from UBC.

### Promotions - Faculty

President Stephen Toope has recommended to the Board of Governors the following faculty promotions:

**Dr. Rick Barichello** to Professor.

**Dr. Maja Krzic** to Associate Professor, with tenure. The Faculty is also pleased to announce that Krzic has accepted the appointment of Program Director, Applied Biology, for three years effective September 1, 2009.



Carol McAusland

## International Trade Benefits Environment

A UBC environmental economist says contrary to what most people think, international trade is actually good for the planet.

"According to our data, a one per cent increase in international trade intensity leads the typical province in Canada to reduce its toxic releases by about 1.8 per cent," says Assoc. Prof. Carol McAusland, Canada Research Chair in Trade and Environment.

With study co-author Daniel Millimet of Southern Methodist University, McAusland looked at the environmental impact of trade between Canadian provinces and U.S. states. Their findings suggest that trade allows firms to spread the fixed costs of installing green technologies across a larger number of consumers.

"In turn, those lowered costs of compliance make strict regulation more attractive to governments."

Previously at the University of Maryland, McAusland joined the Faculty of Land and Food Systems' Food and Resource Economics group in July. A Kamloops native and UBC economics alumna, McAusland says she's delighted to be back, not only to enjoy Vancouver's stunning beauty and lifestyle, but also the collective brainpower at UBC.

"There are more people doing trade and environment research here than anywhere else in the world. I'm very excited to be here."

## Happy Cows Equal Healthy Cows



David Fraser (left), Marina von Keyserlingk, Dan Weary

The Faculty of Land and Food Systems (LFS) has gained an international reputation for pioneering research that pays close attention to the environmental and social needs of dairy cattle.

At the UBC Dairy Education and Research Centre (DERC) in Agassiz, LFS expertise attracts scholars and industry partners from countries such as Brazil, Chile, and Germany. In Canada, a new code of recommended practice for the care and handling of dairy cattle, published in March by the Dairy Farmers of Canada, drew heavily on DERC findings, such as pain control methods during dehorning, improved calf housing, feeding practices and lameness prevention.

"How dairy cattle eat, sleep, rest and interact speaks volumes about their preferences," says Assoc. Prof. Marina von Keyserlingk. "By analyzing their behaviour, we can help producers avoid costly problems such as lameness and other common illnesses."

DERC is a state-of-the-art research facility that offers 24-hour monitoring systems that record the movements and choices as well as food and water intake of more than 300 cattle. Researchers use sophisticated software to analyse the data.

To support their research, von Keyserlingk and her colleagues, professors Dan Weary and David Fraser, received a \$1 million Industrial Research Chair joint award from the Natural Sciences and Engineering Research Council and eight Canadian dairy industry organizations.

LFS researchers are particularly interested in key phases of the life cycle when the animals are most susceptible to illness. These periods include the start of lactation, the end of lactation and the weaning process for calves.

"We have the strongest group of cattle welfare researchers in the world," says Weary. "A long history of collaboration with the dairy industry also keeps our research current. The changes we suggest are grounded in the constraints of modern dairy farming while still improving the lives of animals."

## Enhancing UBC Farm's Bee Habitat

Shawn Johnston wants to generate more buzz at UBC Farm – from bees. In a recent study, Johnston looked at just how bee-friendly UBC Farm is for native pollinators such as Bumblebees and Blue Orchard Mason Bees.

Johnston catalogued trees and plants in and around UBC Farm and hedgerows, finding bee-positive plants such as alder, blackberry bushes, salal, crab apple and Japanese Flowering Cherry.

"UBC Farm shows strong potential for both pollinator food sources and habitat with its diverse crops and healthy surrounding ecosystem," says Johnston, who completed the research for his fourth-year Agroecology studies earlier this year and is currently enrolled in the UBC Faculty of Law.

Johnston adds, "The recent worldwide collapse of honeybee colonies has shown us that the health of our food system is essentially linked to pollinators."

His study recommends enhancing bee habitat through wooden bee houses and bright "pollinator" gardens with blooms such as orange tiger lilies and pink-purple asters.

Johnston also recommends further study on the role and needs of native bees, for instance, what would be the best rotation of crops and gardens to provide bees with nectar and pollen through the seasons.



*Continued from Changing Faces page 4*

### Promotions - Staff

Please join us in congratulating the following staff members on their well-deserved promotions!

**Christine Harris**, Development Officer

**Iain Hawthorne**, Research Technician, Biometerology Group

**Dominic Lessard**, Research Engineer, Biometerology Group

**Helen Man**, Financial Support Specialist 4 (temporary promotion)

**Chris O'Rourke**, Horticulturist 3

### Returning (from maternity leave)

**Bobbie Duvall**, Director of Development

**Melanie Train**, Faculty Liaison

### Departures

**Cyprien Lomas**, Learning Centre Director

Lomas is taking a year-long leave of absence effective September 2009 to accept an appointment as Research Director and Associate Professor with the newly formed Centre for Educational Innovation and Technology at the University of Queensland in Brisbane, Australia.

## DNA “Barcodes” to Help Identify Plants



Sean Graham

Assoc. Prof. Sean Graham, UBC Botanical Garden and Centre for Plant Research, worked with an international team of more than 50 scientists to develop a standard “DNA barcode” for plants that will allow botanists to identify species quickly and easily.

They hope the results will lead to the formation of a global plant DNA “reference library,” which can be shared by the scientific community. There are an estimated 400,000 species of land plants on the planet.

The DNA barcodes are expected to have a number of practical uses, including monitoring biodiversity in natural and managed ecosystems, identifying invasive species, and assisting law enforcement against illegal trade in endangered species.

“It’s a pragmatic first step in solving a complex issue – how can we rapidly and cheaply identify plant species?” says Graham, who helped author the study recently published in the prestigious *Proceedings of the National Academy of Sciences*. Also working on the project was LFS post-doctoral fellow Diana Percy.

“We selected two areas of the plant genome to tag individual species – genes referred to as *rbcl* and *matK*. These genes are available in the vast majority of plants,” explains Graham, who also teaches in the Dept. of Botany.

“They can easily and accurately be sequenced, and when combined, can provide a near-unique signature to generate barcode data and identify species at the molecular level.”

Representing 10 countries, the international team included the universities of Guelph and Toronto, along with scientists from the United Kingdom, the United States, Europe, South and Central America, South Africa and South Korea.



## UBC Volunteer Hosts Japan’s Royal Couple

Longtime Friends of the Garden member Moya Drummond had the honour of hosting the Emperor Akihito and Empress Michiko of Japan at Nitobe Memorial Garden in mid July.

The royal visit to UBC was part of an 11-day, cross-Canada tour marking the 80th anniversary of Japan-Canada diplomatic relations. This was Emperor Akihito’s first visit to UBC since 1953, when he toured the campus as Crown Prince.

“His Highness said, ‘I was so happy with my visit all those years ago, that I wanted to share this garden with my wife,’” recalls Drummond.

A UBC volunteer since 1999, Drummond led the Emperor and Empress on a 25-minute tour of the Nitobe Garden, recognized as the most authentic traditional Japanese Tea and Stroll garden in North America and among the top five outside Japan.

Left to right: Emperor & Empress of Japan, Moya Drummond  
Photo by Ian Smith, courtesy of The Vancouver Sun

The Imperial couple asked to be introduced to Junji Shinada, the horticulturist of Nitobe, and Ingrid Hoff, Horticulture Manager of the Botanical Garden and Centre for Plant Research.

“The royal couple were delightful and extremely gracious, genuinely interested in everything from the tea house to the koi fish that were a gift from the Imperial Palace in Tokyo,” says Drummond. She credits Garden staff and volunteers for their meticulous preparation, not the least of which was “weeding with tweezers!”

## Milestones

### Assoc. Prof. Art Bomke - Canadian Society of Soil Science

Bomke received the 2009 CSSS Soil Science for Society Award for outstanding research and activities that foster sustainable agricultural practices. Bomke has inspired generations of students with his long-term vision for stewardship of land and community. He readily shares his expertise to benefit neighbourhoods, community gardens, wildlife corridors and agricultural areas.

### Prof. Tony Farrell - 2009 Fry Medal

The Canadian Society of Zoologists awarded Farrell, with the Faculty of Land and Food Systems and Dept. of Zoology, the 2009 Fry Medal for lifetime and outstanding contributions in areas of zoological research that include integrative and comparative animal physiology, sustainable aquaculture and aquatic toxicology.

### Former faculty member named UNBC President

Earlier this year, Dr. George Iwama was named the new President of the University of Northern British Columbia. A former faculty member in the Dept. of Animal Science, Iwama joined the Faculty in 1987 to develop the aquaculture program started by Prof. Beryl March.

### LFS expertise reaches Chinese audience

Prof. Emeritus Robert Blair's book, *The Nutrition and Feeding of Organic Pigs* (CAB International, UK, 2007), has just been translated into Chinese by the China Agricultural Science and Technology Press in Beijing.

### Soil science web resources wins award

Assoc. Prof. Maja Krzic and LFS graduate student Rachel Strivelli won an Award of Merit from the Canadian Network for Innovation in Education (CNIE) for their web-based teaching "Land-Use Impacts Tool" which explores soil quality in the UBC Endowment Lands. The CNIE recognizes outstanding media material created for K-12, post-secondary, government, commercial and industrial sectors.

### UBC Farm receives Fraser Basin Council Sustainability Award

The Centre for Sustainable Food Systems at UBC Farm received the 2009 "Understanding Sustainability" Award from the Fraser Basin Council for the leadership, and outreach it has shown through measures such as the field research on food production and biodiversity and the farm-based urban Aboriginal health program.

### VanCity grant for "organiponico" market farm

VanCity Director Wendy Holm presented the Faculty with a \$15,000 cheque for UBC Farm to develop and assess the "organiponico" model concept in a Vancouver context. Seen in Cuba, this specialized form of urban agriculture calls for intensively managed market farms which grow produce for local consumption within the city core.

### LFS students

#### Joanna Makowska wins Best Oral Presentation Prize

Makowska, a PhD student in the Animal Welfare Program, received the prize for Best Oral Presentation at the 9th North American Regional Meeting of the International Society for Applied Ethology held in Montreal during July for her talk entitled, "Humane euthanasia for laboratory mice?"

#### LFS students win accolades for excellence in soil science

LFS graduate students Rachel Strivelli and Christian Evans each received a \$500 travel grant award from the Canadian Society of Soil Science (CSSS) for research excellence, Recent LFS BSc graduate Colin Dring won the 2009 CSSS Student Book Award.

### LFS staff

#### AMS honours LFS Student Services

The UBC Alma Mater Society and Alumni Association honoured Asst. Dean Lynn Newman and Advising Officer Joshua Robertson with the 2009 AMS Just Desserts Award for providing students with exceptional service.

#### Mark Bomford receives President's Staff Award

Bomford received the President's Staff Award for Enhancing the UBC Experience. As the Program Coordinator at the Center for Sustainable Food Systems at UBC Farm, Bomford has fostered sustainability-oriented teaching, research and community service. In 2007, the Farm hosted 35 active research projects, received more than 20,000 local, national and international visitors and served 2,000 students enrolled in 41 different credit courses at UBC.

#### Martin Hilmer garners sustainability kudos

Hilmer, LFS Technician and Distance Educator Instructor, received a letter of recognition from the UBC Sustainability Office for his role as Sustainability Coordinator at LFS. Hilmer inspires colleagues to make positive changes in energy use, waste generation and transportation.



Tim Durance

## New Food Dehydration Technology

UBC spin-off company EnWave Corporation recently won an innovation award for its new food dehydration technology, NutraREV™, at the largest annual food science forum and exposition in the world. Held by the Institute of Food Technologists in Anaheim, California, the event draws more than 20,000 delegates from industry, academia and government.

A research group led by Prof. Tim Durance in the Faculty of Land and Food Systems invented NutraREV™, technology that uses vacuum pressure and microwave energy to deliver rapid, low-temperature dehydration of fruits, vegetables, and other food materials, while preserving vitamins and nutrients. Compared to freeze drying, NutraREV™ requires less than one-third the energy with one-sixth the capital cost.

Durance, EnWave Chairman and Co-Chief Executive Officer, first began working on a prototype in 1999.

"It's very exciting to help develop a new industry standard for the dehydration of food materials. We are now working to extend this technology to drying of live bacterial cultures, active bulk liquids, and sensitive pharmaceuticals."



David Shackleton

## Retirement

Retiring this year is Prof. David Shackleton, who arrived at the Faculty as an assistant professor in the Dept. of Animal Science in 1975. Shackleton completed his PhD at the University of Calgary studying bighorn sheep. At UBC, he taught various undergraduate and graduate courses and supervised 37 graduate students, who studied most species large wild mammals in Canada, from killer whales to grizzly bears, as well as a few domestic species.

Shackleton served as Associate Dean, Academic, for five years, and most recently, was Program Director of the Agroecology Program. As an active member of the Caprinae Specialist Group, International Union for the Conservation of Nature, Shackleton compiled and edited the first world survey of the status and conservation of wild sheep and goats and their relatives. He also wrote "Hoofed Mammals of B.C.," published by the Royal BC Museum.

## Agriculture in the City at Metrotown

LFS along with more than 25 other exhibitors explored the importance of food, crops and dairy cows with almost 70,000 visitors during Agriculture in the City, a three-day event held during May 27-29 at Metrotown in Burnaby. Organized by Agriculture and Agri-Food Canada, the event brought home to urban consumers the importance of agriculture within our day-to-day lives. LFS students created interactive exhibits that demonstrated soil research, pest control of greenhouse whiteflies and dairy cattle welfare at the UBC Dairy Education and Research Centre. Other exhibitors included the BC Dairy Foundation, BC Blueberry Council and the BC Association of Farmers' Markets.



LFS alumnae Christy Goldhawk (left) and E.D. Parsons show cow bedding options

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### RESEARCH & PROGRAMS:

- AAFC Avian Research Centre
- Agroecology
- Animal Welfare Program
- Biometerology and Soil Science
- Botanical Garden and Centre for Plant Research
- Centre for Sustainable Food Systems at UBC Farm
- UBC/DFO Centre for Aquaculture and Environmental Research
- UBC Dairy Education and Research Centre
- Food and Resource Economics
- Food Science
- Human and Animal Nutrition
- Wine Research Centre



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