LAND AND FOOD SYSTEMS

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REACHOUT

CANADIAN CHILDREN DON'T EAT ENOUGH VEGETABLES, FRUIT AND DAIRY PRODUCTS DURING SCHOOL HOURS page 6

WHAT'S INSIDE

THE UNIVERSITY OF BRITISH COLUMBIA

DEAN'S MESSAGE

WE ARE ALL IN THIS TOGETHER.

We all share the same planet and it's our duty to care for it and all of the life that calls Earth home – plants, animals and humans. In the Faculty of Land and Food Systems, our areas of focus – urban agriculture, food, nutrition and health and food safety and quality – encompass some of the most critical issues that many communities around the world are facing, such as climate change, food security, and access to clean water. Issues that can have a direct, and sometimes devastating, impact on one's quality of life.

Our researchers are working to find practical, transferrable solutions to some of these issues. By transferrable, I mean that what we are learning here in BC can be adapted around the world. The seed to plate research happening at the Centre for Sustainable Food Systems at UBC Farm, for example, can provide global leadership for change, which in turn will lead to more resilient and secure future food systems all over the world.

I'm continuously inspired by our researchers as well as our students, who join us because they are passionate about making the world a better place. We are helping to shape the leaders of tomorrow and we've designed flexible undergraduate and graduate programs that draw from a variety of disciplines to give our students the strong foundation they need to reach their goals.

Whether it's by sharing our scientific discoveries, passing on our knowledge to our students, or attending an LFS community event, we are connecting with others who have the same desire to leave the planet a better place for future generations – and that's something that I'm very proud of.

RICKEY YADA
DEAN, FACULTY OF LAND AND FOOD SYSTEMS

The Global Graduate

How a Land and Food Systems alum is wielding her degree around the world.

Choosing UBC was an easy decision for Faculty of Land and Food Systems alumna and Ontario native Sara Amadi. She says it was the university's "fantastic programs, stellar location and, of course, the ocean" that made her take the leap to head out west.

Now, as an alumna, Sara looks back on her time at UBC as the formative years that got her to where she is now: a globe-trotting professional with graduate-degree ambitions and dreams of improving our world through her work with climate change.

HOW DID YOU FIND YOUR PROGRAM, THE BACHELOR OF SCIENCE IN GLOBAL RESOURCE SYSTEMS?

I started my academic career in the Faculty of Arts and took a number of general courses. In the summer following first year, I took an introductory biology course on ecology and fell in love with conservation. While in my second year, a friend told me about the Global Resource Systems program in the Faculty of Land and Food Systems.

The program immediately enthralled me: students would specialize in a region and a resource in the world and take courses across different faculties at UBC to build an understanding of their specialization. Its mission is to shape global leaders who are passionate about grassroots movements, protecting natural resources, and having a positive impact in the world.

WHAT KIND OF ACADEMIC OPPORTUNITIES DID YOU TAKE ADVANTAGE OF?

I worked as a research assistant on a number of projects with professors whom I respected as academics and admired as individuals. The roles that I held on projects in different departments allowed me to develop valuable research skills and gain a better understanding of the academic research process, and gave me the opportunity to learn directly about current issues.

YOU ALSO WENT ON ACADEMIC EXCHANGE TO FRANCE – WHAT WAS THAT LIKE?

It was one of the most enriching experiences during my degree. It was the first time I had gone abroad on my own and was essentially forced to figure it out as life happened. Looking back, I don't remember the challenges that I faced in the first few weeks, instead I fondly think back to the incredible people coming from different corners of the world, the exciting weekends spent exploring new European cities, and the invaluable lessons I gained from jumping into the unknown hoping that it would be okay.

WHAT'S NEXT FOR YOU?

My experience in Nepal reaffirmed plans to pursue a Master of Urban Planning, with a focus on climate change adaptation and strengthening resilience – hopefully next year!

Recently, I joined the "Climate Migrants and Refugees Project" as research manager. This is a non-profit founded by a group of students from UBC's School of Community and Regional Planning. Recognizing the implications that climate change will have on human migrations, the project aims to develop a toolbox and short-term recommendations for different stakeholders to use to effectively resettle future influxes of people displaced by climate-related disruptions. ⊙

Blazing a trail

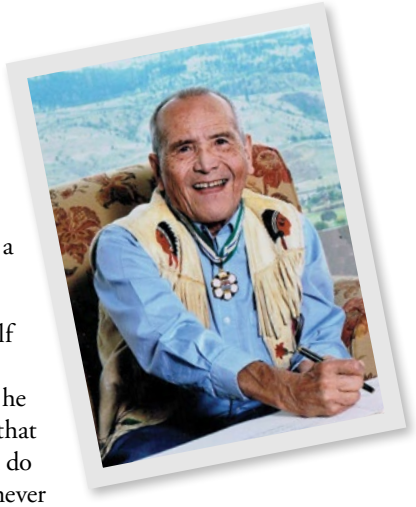
LFS Alumna Reflects on Distinguished Alumni Grandfather

BY AGE 8, Erin A'tman Ryan (BSc Applied Biology, 2014) knew all of the plants in the forested gully behind her grandparents' house by their Okanagan, common, and scientific names. "It's funny now to think about the work that I do and how much of that influence came from my childhood, and especially from the time spent with my grandfather."

Erin's grandfather, Len Merchand Sr. passed away in 2016. He was a notable graduate of our Faculty (BSc, Agriculture, 1958). "He got a kick out of the fact that I was going to be an 'Aggie' like him," she said.

Len Marchand Sr., born in Vernon, B.C. in 1933 into the Syilx (Okanagan) Indian Band, was fortunate to be educated on-reserve until grade eight. To further his education, he had to move more than 100 kilometres away in order to study at a residential school in Kamloops. But the distance from his family and community proved too great, and he left the school after one year. After returning to Vernon, he became the first status Indian to graduate from a public high school.

The deeper Marchand got into his education, the more he realized he could use it to help his people. He was one of a very few aboriginal students to graduate from UBC. He accomplished many milestones in his life; he was the first person of First Nation's status to serve as a Member of Parliament and a federal cabinet minister. He would go on to be appointed to the Senate and made a member of the Order of Canada.



"My grandfather never saw himself as a monumental trailblazer or a politician," she said. "In his mind, he was a humble Okanagan scientist that was just doing what anyone would do given the same opportunity. Whenever I share his story, the message I try to get across is how much someone can accomplish in one lifetime with the loving support of their family and the opportunities for education."

Ryan is currently working as a Research Coordinator with the BC SPCA. Her latest project, together with fellow LFS alumni Dr. Sara Dubois and Nicole Fenwick, is an accreditation program for wildlife and rodent control companies that make ethical decisions in "pest" control. ⊙

LFS RESEARCHERS RECEIVE $1.8 MILLION IN FUNDING FOR GREENHOUSE GAS PROJECT

A TEAM OF SOIL SCIENCE RESEARCHERS in the UBC Faculty of Land and Food Systems were recently awarded $1.8 million in funding from Agriculture and Agri-Food Canada (AAFC) for a research project that will provide local farmers with information on the greenhouse gas emissions and mitigation for different cropping systems.

Drs. Andy Black, Sean Smukler, Rachhpal Jassal and Maja Krzic will measure the greenhouse gas emissions from blueberry, potato and forage fields in BC's Lower Fraser Valley. The team will collaborate with researchers at the Pacific Agri-Food Research Centre at Agassiz and personnel with the BC Ministry of Agriculture, the Delta Farmland and Wildlife Trust, and the Delta Farmers' Institute. The results of this research will be shared with Canadian producers, policy makers and the scientific community in order to help reduce the climate impacts of these systems.

"Only a few studies have attempted to measure greenhouse gas emissions in cropping systems in BC, and those measurements have been episodic, and therefore may have missed emissions at certain key points in the growing season" said Andy Black, Professor, Faculty of Land and Food Systems. "The goal is to provide farmers with a set of best management practices that will allow them to protect the environment while sustaining their farm productivity."

Funding for the five-year project, "*Quantification and mitigation of greenhouse gas emissions from high value agricultural production systems in British Columbia*," is provided from AAFC's Greenhouse Gas (GHG) Program.

BARBARA STEFANSKA

ASSISTANT PROFESSOR, FOOD, NUTRITION AND HEALTH

"**GENES DICTATE WHO WE ARE** — whether we have red hair or black hair, blue eyes or green eyes," said Barbara Stefanska, Assistant Professor, Food, Nutrition and Health. "Epigenetics looks at changes in the expression of those genes. My research is focused on how different environmental and nutritional factors can play a role in changing expression of our genes and consequently impact our health and well being."

Prior to joining our Faculty in July, Stefanska was an Assistant Professor in Nutritional Epigenetics at Purdue University in Indiana, USA.

"Around twenty years ago, researchers realized that there was some kind of makeup on the genes that decided which genes would be expressed and which would not," she said. "This makeup on our genes called epigenetics is very important because it dictates the way we look, our appearance and our overall health."

Monozygotic twins, for example — twins born with the same genetic material — can look the same at birth, but the older they become, the more differences there will be in their appearance.

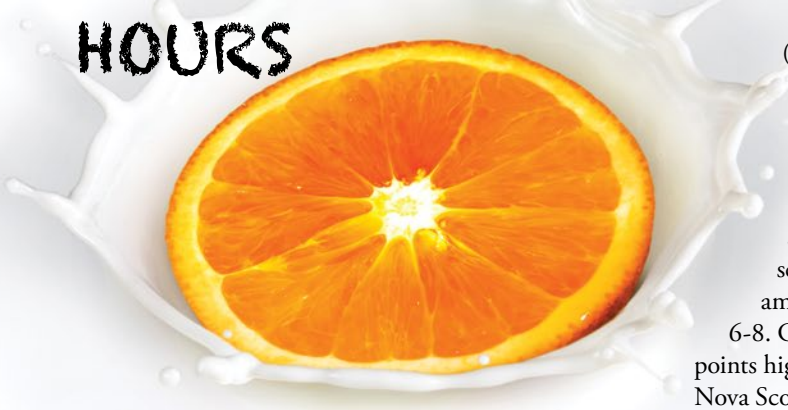
"These twins have the same genes, so they should look exactly the same, but exposure to different social behaviours, different food, different temperatures, can impact the way our genes work and eventually change their expression," she said.

The fact that genes are susceptible to change means that applying different behaviours or changing the diet can positively influence an individual's health. "You can change function of your genes by making changes to your lifestyle. Improving your diet, becoming more active, reducing stress."

"I've always wanted to teach, but I also discovered a love of research while I was at university," she said. Stefanska completed her PhD in Biomedical Sciences (Nutritional Epigenetics) at Medical University of Lodz, Poland in 2008, then came to Canada to do a Post-Doc in Cancer Epigenetics at McGill University with renowned epigeneticist Dr. Moshe Szyf. "It's a wonderful feeling when you see something interesting in your results that might eventually help people."

Stefanska is currently teaching FNH 350: Fundamentals of Nutrition, and FNH 477: Nutrition and Disease Prevention. She's also building her network at UBC and developing collaborations with other UBC scientists on epigenetic research projects. ⊙

CANADIAN CHILDREN DON'T EAT ENOUGH VEGETABLES, FRUIT AND DAIRY PRODUCTS DURING SCHOOL HOURS



CANADIAN CHILDREN DON'T EAT ENOUGH vegetables, fruit and dairy products during school hours, causing them to fall short of several daily dietary recommendations on school days, a new UBC study has found.

"Before this study, nobody in Canada had looked at actual differences in dietary intake patterns between school hours and non-school hours," said Claire Tugault-Lafleur, a PhD candidate in our human nutrition program. "If we want to inform nutrition policies and dietary interventions for schools, we have to look not only at foods consumed at school, but also examine the contribution of these foods to a child's daily dietary intake. Very few people are looking at that."

According to the research published recently in *Applied Physiology, Nutrition and Metabolism*, children consumed approximately one-third of their total daily calories during school hours, but intake of dairy products and key nutrients found in milk — calcium and vitamin D, for example — was lower during school hours compared to the rest of the school day. Meanwhile, intake of less nutritious foods like sugar-sweetened beverages, salty snacks and candies was relatively higher during school hours.

Researchers examined data from the 2004 Canadian Community Health Survey involving 4,827 children across Canada between the ages of six and 17. Respondents provided information about the food and beverages they consumed in the past 24 hours. The UBC study compared the nutritional profile of foods consumed during school hours (between 9 a.m. and 2 p.m.) with foods outside of school hours.

The researchers devised a School Healthy Eating Index (School-HEI), a score based on 11 key components of a healthy diet that examines the totality of foods and beverages consumed by Canadian children during school hours. The average score for of 53.4 points (out of a maximum of 100) for all Canadian children suggested substantial room for improvement.

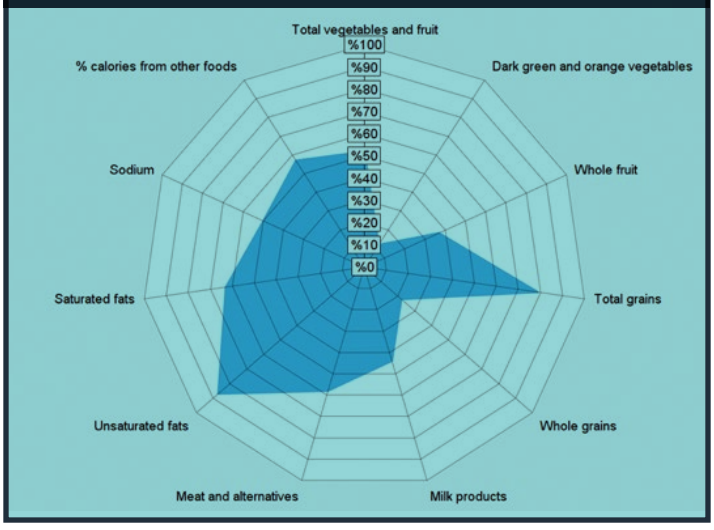
The researchers also looked at sociodemographic information to examine whether any factors were associated with differences in diet quality among subgroups of children. They found that diet quality scores during school hours averaged nine points lower among children aged 14-17 compared to children aged 6-8. Children in Quebec, on average, scored at least five points higher than peers in Newfoundland and Labrador, Nova Scotia, Ontario and Manitoba. Children from families with post-secondary education had scores that averaged two points higher, enough to be statistically significant.

Tugault-Lafleur now looks forward to comparing the data with a new set collected during the 2015 Canada Community Healthy Survey and released in early August.

"To know what was happening in terms of baseline in 2004, and to be able to make comparisons over the last decade, seems really promising," she said. "I'd like to see if there are some places in the country where we see greater improvements in school-hour diet quality, and whether different initiatives or school nutrition policies were implemented in these regions from 2004 to 2015."

Assistant Professor Jennifer Black and Professor Emeritus Susan Barr oversaw Tugault-Lafleur's research and co-authored the study. ⊙

FIGURE 1: SCHOOL-HEALTHY EATING INDEX (S-HEI) SCORES FOR CANADIAN CHILDREN AGED 6-17 YEARS




SALAD

YANGFAN ZHANG

YANGFAN ZHANG'S interest in marine biology was first sparked during a childhood spent growing up surrounded by different fishing towns in Southeast China. So when it came time to choose a career path, studying fish felt like a natural fit. BC's aquaculture industry, along with the chance to study with world-renowned researchers, drew him to UBC.

"UBC has the best comparative physiology group, with top tier scientists," Zhang said. "Doing research as an international student can be a challenge, but I am fortunate to have the access to outstanding mentors and great resources at the university."

He completed his MSc in Applied Animal Biology in 2016 under the direction of Professor Tony Farrell, a Canada Research Chair in Fish Physiology, Culture and Conservation (Tier One). Zhang began his PhD with Farrell last year, studying the cardiorespiratory physiology of fish, with a focus on the entry of environmental effects upon fish integrated performance and their consequences at ecological and evolutionary levels.

His research has broad applications and provides data that can help the aquaculture industry and the conservations of wild fish. "In the future, catching wild fish won't be sustainable, so fish grown in hatchery conditions will become increasingly necessary in order to meet demand; meanwhile the data-based conservation measures need to be implemented to help the wild populations to survive in the environment when facing the challenges of fisheries and global climate change" he said. "The seemingly polarized field all need the knowledge from ecological physiology. While turning the fundamental science into a real-world solution, I get to explore the gaps in knowledge and that really interests me."

Yangfan is collaborating with the Fisheries and Oceans Canada (DFO) on the infectious virus project to diagnose the conditions of fish before the mortalities even occurred in the aquaculture net pans, and provide evidence to inform the development of conservation policy to protect the wild Pacific Salmonids. Yangfan is also working on a project that looks at both phenotypes and genotypes variations of the rainbow trout strains that meant to restock the wild populations.

He was the lead author on a recent study published in *Aquatic Toxicology* that found that European sea bass show chronic impairment after exposure to crude oil. He has also worked on a project that is looking at whether the Norwegian Atlantic Salmon (*Salmo salar*) breeding program — which focuses on commercially beneficial traits, such as rapid growth — may compromise the cardiorespiratory system. The study is published in *Aquaculture* and is featured in the DFO's Canadian Aquaculture Research and Development Review 2017.

He is a recipient of the Elizabeth R. Howland Fellowship, an award offered to graduate students in Agricultural Sciences, with preference given to those specializing in Animal Husbandry. ⊙

JEFFREY KWOK, OUTREACH AND COMMUNITY ENGAGEMENT

AS PART OF THE LFS CAREER DEVELOPMENT INTERNSHIP (LFS 496) program, Jeffrey Kwok, a fourth year student in the Applied Animal Biology program, works with the outreach team at UBC Farm. His role includes creating, delivering, and facilitating educational curricula about food system sustainability to school age children and youth. He also works with stakeholders and community partners the multifunctional role of food and its environmental, social, and cultural implications.

HOW DO YOU THINK THIS INTERNSHIP PREPARES YOU FOR THE WORK WORLD?
I think this internship has prepared me for the work world because it has many components that characterize our modern working environment. There is a focus on communication, collaborative work, use of electronic communication as a facilitation tool, dealing with uncertainties, and working with stakeholders with different goals and interests.

PREPARING UBC GRADUATES FOR THE FOOD SYSTEMS WORKPLACE

THE CENTRE FOR SUSTAINABLE FOOD SYSTEMS (CSFS) launched a new wave of LFS Career Development Internships (LFS 496) in 2016, as a way to increase student access to for-credit, mentored learning experiences with a food business or organization.

"This internship program came as a result of students telling us they wanted to get their hands dirty. They wanted practical experience in the workplace," says Véronik Campbell, Academic Programs Manager at the CSFS at UBC Farm.

Internship positions are posted on the CSFS website, allowing students to apply and interview just as they would for a regular job posting. Students earn 3-6 credits in the internship, working directly with a workplace mentor over one or two semesters. Interns also form a cohort engaging in professional development activities such as the Strengthfinders assessment, a food values exercise, and a session on improving workplace communication.

"The goal of this program is to prepare our graduates both professionally and academically for future careers in the food system," says Hannah Wittman, LFS Professor and CSFS Academic Director. "Interns actively apply the theory they have received in their undergraduate courses in a conscious, practical way, through on-the-ground food system-related work."

For some internships, students literally get their hands dirty in the fields of the UBC Farm, working with poultry or perennial crops, while other positions focus on food system opportunities such as curriculum creation for children's food literacy programs or engagement with BC progressive food businesses.

"Interning at UBC Farm showed me how food and sustainability are integral to good health which made me see the UBC Farm as a home of solutions for local challenges that will eventually lead to global changes," said Sigbrit Søchting, Biodiversity and Perennial Crops Intern.

Internship positions are also growing off campus, where food systems organizations can apply to mentor an intern. Previous interns have worked with Inner City Farms, the Richmond Food Security Society, and the Working Group on Indigenous Food Sovereignty.

"We also created the program to respond to the needs of BC food systems" adds Ms. Campbell. "We wanted to build resources and empower organizations, and to have this program become an asset for the BC food system, providing highly-qualified UBC graduates that are ready to hit the ground running."

Internship positions are posted in November, February, and July of each year at ubcfarm.ubc.ca/internships. Students from any Faculty may apply and there are no pre-requisites. Sign up for the UBC Farm Community newsletter for updates at ubcfarm.ubc.ca or contact ubcfarm.academic@ubc.ca for more information. ⊙

INTERN CENTRE FOR SUSTAINABLE FOOD SYSTEMS AT UBC FARM

HOW WOULD YOU LIKE TO BE INVOLVED IN THE FOOD SYSTEM AFTER YOU GRADUATE?
I would like to work in promoting food security and food systems sustainability in our local communities. My internship gave me the opportunity to immerse myself into the community of people in Vancouver who work to creating a better food system and I want to be a part of that change.

HOW HAS THE INTERNSHIP INFLUENCED YOUR CHOICES OR FUTURE PATH?
My internship has fuelled my interest in working in the local food system. It has also opened my eyes to the different career avenues that I can take after I graduate, which elucidated the kinds of jobs that align well with my passion and interests.

MILESTONES

DEAN RICKEY YADA RECEIVES HONOURARY DEGREE FROM UNIVERSITY OF GUELPH

Dean Rickey Yada was presented with an honourary Doctor of Science degree from the University of Guelph in June during Guelph's convocation ceremonies. Before moving to UBC, Rickey spent 30 years at the University of Guelph, where he was the first Tier 1 Canada Research Chair in Department of Food Science. Dean Yada also gave the convocation speech to the Class of 2017.

VIVIEN MEASDAY AWARDED LES DAMES D'ESCOFFIER

Associate Professor Vivien Measday received a legacy award from "Les Dames D'Escoffier" for her wine yeast research. Les Dames D'Escoffier is a philanthropic organization that supports women in food, wine and hospitality.

JOURNAL OF DAIRY SCIENCE CLUB 100 HONOURS PROFS. MARINA VON KEYSERLINGK AND DAN WEARY

Professors Marina von Keyserlingk and Dan Weary have been awarded membership into the Journal of Dairy Science Club 100. Since the first issue in 1917, the JDS has become the leading dairy research journal in the world. The journal listed roughly 49,800 authors on accepted papers in the last sixteen years alone. Marina and Daniel are among only eighteen initial inductees into the club. They were recognized for their achievement at the 2017 American Dairy Science Association Awards Banquet held in Pittsburgh in June.

PROFESSOR JIM VERCAMMEN RECEIVES CANADIAN AGRICULTURAL ECONOMICS SOCIETY FELLOWSHIP

Professor Jim Vercammen was named a Fellow of the Canadian Agricultural Economics Society in 2017. With its Fellows award the CAES recognizes excellence in performance demonstrating continuous distinguished contributions to the advancement of food, agricultural or resource economics, and substantial contributions to institution building and the Canadian food, agricultural and resource economics profession.

CRYSTAL KARAKOCHUK LEAD AUTHOR ON NEW BOOK CONCERNING EARLY-LIFE DEVELOPMENT

Assistant Professor Crystal Karakochuk is the lead author on a new book published by CRC Press titled "The Biology of the First 1,000 Days." The book summarizes the importance and irreversible nature of growth and nutrition experienced in the first 1,000 days of life. The book's co-authors are adjunct professor Tim Green, alumna Kyly Whitfield, and Klaus Kraemer.

MEERU DHALWALA AND DAVID ETO.

UBC ALUMNI BUILDER AWARDS

UBC alumni Meeru Dhalwala (LLD'16), David K. Eto (BSc (Agr)'85) and Harold L. Steves (BSc(Agr)'63) were named as recipients of the UBC Alumni Builder Awards. Created exclusively to commemorate the 100th year of *alumni UBC*, the Alumni Builder Award recognizes a cross section of alumni representing all faculties who have significantly contributed to the University and enriched the lives of others, and in doing so, have supported *alumni UBC's* mission of realizing the promise of a global community with shared ambition of a better world and an exceptional UBC.

FOOD SCIENCE PHD STUDENT AWARDED KILLAM DOCTORAL SCHOLARSHIP

Justin Falardeau, a PhD student in our Food Science program, recently received a Killam Doctoral Scholarship. Killam Doctoral Scholarships are the most prestigious awards available to graduate students at UBC. Approximately 15-20 awards are made each year to the top doctoral candidates in the Affiliated Fellowships competition. At present, the Killam Doctoral Scholarship provides an annual stipend valued at $30,000 for two years plus a $2,000 allowance for research-related travel during the 24 months of the scholarship.

CHRIS MCGILL AWARDED UBC PRESIDENT'S AWARDS FOR STAFF

Chris McGill, Research Manager, UBC Animal Welfare Program and the Program Coordinator for our Applied Biology Program received a 2017 President's Staff Award for Enhancing the UBC Experience. The President's Service Awards for Excellence recognize the personal achievements and contributions that our staff make to UBC, and to the vision and goals of the University.

UFAW MEDAL FOR OUTSTANDING CONTRIBUTIONS TO ANIMAL WELFARE

Adjunct Professor Jeffrey Rushen was presented with the Universities Federation for Animal Welfare (UFAW) Medal for Outstanding Contributions to Animal Welfare Science earlier this year. The UFAW Medal recognises exceptional achievements of individual scientists who have made fundamental contributions to the advancement of animal welfare over a number of years. The award is open to individuals, anywhere in the world, whose research, teaching, service and advocacy has significantly benefited the welfare of animals

MARTIN HILMER RETIRES

Long-time LFS staff member Martin Hilmer retired in September. Martin earned a BA in Geography from UBC, after which he worked in the Ministry of Agriculture (Soils branch), Ministry of Transportation and Department of National Defense before joining our Faculty in 1988 as a junior technician in the Department of Soil Science. While working with us, he worked towards his Masters on a P/T basis, receiving his Masters of Science (Soil Science) in 1998. As Education/Research Support Technician, Martin played an integral role in supporting the various APBI courses and always with a cheerful smile. In 2013, he was inducted into UBC's 25 Year Club, which honours staff members with 25 or more years of service at University.

ANUBHAV PRATAP SINGH

ASSISTANT PROFESSOR, FOOD PROCESSING

ASSISTANT PROFESSOR ANUBHAV PRATAP SINGH was born and raised in Uttar Pradesh, the northern province of India. He studied Chemical Engineering at the Indian Institute of Technology Kharagpur, before relocating to Montreal to complete his PhD at McGill University in 2015.

While at the University of Toronto in 2016, Singh received the Banting Postdoctoral Fellowship. This annual award is presented annually to postdoctoral researchers in Canada who are contributing to the country's economic, social, and research-based growth. With the Fellowship, Singh joined the team of renowned table salt fortification expert Dr. Levente Diosady. Their project was focused on the development of Quadruple Fortified Salt (QFS) - a technology to produce Table Salt supplemented with iodine, iron, folic acid & Vitamin B12 to counter micronutrients deficiencies in vegetarians, children & women of reproductive age. The fortified salt is being successfully distributed amongst people living below poverty line in Singh's home province in India.

Singh was already familiar with UBC before arriving this past July. "My PhD supervisor, Dr. Hosahalli Ramaswamy, is an alumni of the Food Science program here, so I am honoured to be here at the same program." His major focus has been in establishing the Food Processing Research Group in the Faculty. The group will engage in the study of industrial food production, processing and preservation.

"We will be looking at the impact of food processing on quality and nutrition in food" he said. "This includes everything that happens to food after it is harvested on a farm to when it reaches your plate."

Currently, thermal processing is the main method of food processing, which tends to destroy micronutrients. Dr. Singh is exploring alternate technologies based on light, sound, pressure or electrical energies which could provide the same level of food safety as traditional thermal methods, but with better nutritive value.

"We will consider how technology can be adapted to maximize desirable effects while minimizing harmful effects. When the world's population reaches 10 billion in 2050, we want to have the technology in place so that we can improve the nutrition, quality and shelf life of processed food products."

The other major focus of the Food Processing Research Group is public awareness.

"There is a negative perception in the public concerning processed food, so our goal is to help dispel some of the myths and share the advantages." ⊙

FREDERICK NOACK

ASSISTANT PROFESSOR, FOOD AND RESOURCE ECONOMICS

FREDERIK NOACK JOINED THE FACULTY of Land and Food Systems as an Assistant Professor this past July. Originally from Germany, he is interested in the interaction of economic development and the environment on a global scale.

While a postdoctoral fellow at the Bren School of Environmental Science & Management at the University of California Santa Barbara in 2016, Noack's research targeted fisheries in developing countries. "We found that if fishermen have no secure property rights over fisheries, access to the credit market lead to more fishing effort and subsequently to more overfishing" he said. "However, the effect reverses if fishermen have secure property rights, as they are able to reap the benefits in the future."

Before that, Noack worked for international organizations such as the World Bank and the World Wildlife Fund. "While working as an ecologist or economist in developing countries, I discovered that in order to understand what is effecting a particular environment, you first need to understand what drives the people's actions who live there. Not surprising, I found that people are driven by the need to make a living."

"I began asking myself questions that were not easy to answer: how can we become richer and make the world a better place without destroying the environment? How can you reduce poverty without destroying the environment?"

Noack believes the Faculty of Land and Food System is in a unique position to answers these questions. "My particular research area requires collaboration across disciplines, and the Food and Resource Economics program at LFS is unique in that it bridges that gap between economics and the environment. I am collaborating with environmental scientists to better understand and quantify the environmental impacts of economic development."

His current project is looking at trade and agriculture in India, where more roads are being built to connect rural areas to cities. "If more people work in or travel to the city, the surrounding land use will change dramatically," he said. "With less labour in the fields, it effects which crops can be grown, which in turn effects the local economy." This is particularly important in developing countries like India, where 50% of the workforce is employed in agriculture.

"There is no separation between the economy and the environment, and both need to be taken into consideration when making these kind of decisions." ⊙

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