

A woman with dark hair, wearing a blue denim shirt, is smiling and holding a large sunflower in her right hand. She is standing in a field of sunflowers with green leaves and other flowers visible in the background. The scene is brightly lit, suggesting a sunny day.

# **CENTRE FOR SUSTAINABLE FOOD SYSTEMS**

## **2018-2019 ANNUAL REPORT**





# ABOUT US

## Innovation from field to fork to achieve resilient, thriving, and socially just food systems for all.

The Centre for Sustainable Food Systems at UBC Farm is a teaching and research centre and local-to-global food hub working towards a more sustainable, food secure future. The 24-hectare UBC Farm includes an integrated organic farm and forest ecosystem located on the traditional, ancestral, and unceded territory of the hə́n̓qə́mih̓ə́m-speaking xʷməθkʷə́yəm (Musqueam) people. CSFS supports collaborative research, teaching and learning opportunities for UBC students, faculty, and staff as well as local and international academic and community partners. CSFS members work on the development of innovations in agroecosystem management for food security and ecosystem services, while honouring, respecting, and protecting diverse ecosystems and knowledge pathways within Indigenous and agrarian food systems.

We wish to acknowledge the passion and hard work of our dedicated faculty and community members, staff, students, and volunteers, as well as our donors and research funders. For championing our vision and supporting us as we grow and evolve: *Thank you!*



# DIRECTORS' MESSAGE

Our goal at the Centre for Sustainable Food Systems is to achieve a resilient, socially just, and sustainable food system for all. In 2019, in the face of climate change and global socio-political unrest, this goal is more prescient and timely than ever. In order to address our collective challenges and goals it is essential to engage diverse audiences and voices to share knowledge and best practices for sustainable food systems.

At CSFS, we are sharing knowledge gathering through our research networks, including the creation of open-access farm management applications, innovative methods for water and biodiversity monitoring on diversified farms, organic plant and seed breeding, projects with Indigenous land-based pedagogies, climate change, and organic agriculture research.

We are proud to host the UBC Research Excellence Cluster for Diversified Agroecosystems which positions the UBC Farm as a Long-Term Socio-Ecological Research Station and expands our research capabilities.

We launched our new Minor in Sustainable Food Systems for undergraduate students in the faculties of Land and Food Systems and Science. This 18-credit Minor creates cross-disciplinary connections between food, health, society and the environment.

In the summer of 2018 we launched the BC Food Web, a cross-institutional knowledge mobilization portal, with a searchable library of plain language research briefs and resources relevant for farmers, growers, processors, policy-makers, educators, and the general public, thus making research results directly accessible and applicable.

We share the healthy food we cultivate to help address food insecurity. We worked with the Alma Mater Society (AMS) in 2018-2019 on a successful referendum to provide students with a 20 per cent discount on all UBC Farm produce, which was used nearly 2,000 times since its launch. We continue to donate vegetables to non-profit organizations and events both on and off campus.

The connection between food, health, society and the environment is at the root of all our programs, events and activities – each experiential class, market, workshop, and tour aims to foster food systems literacy, share knowledge with a broad community and develop sustainable food systems advocates.

The CSFS is uniquely positioned as an international leader at the food-environment nexus. With agriculture identified as a key area for addressing global climate change and social justice, more than ever our leadership at this nexus is relevant and essential.



**Dr. Hannah Wittman**  
*Academic Director*

**Clare Cullen**  
*Operations Director*



# RESEARCH

The Centre for Sustainable Food Systems is an interdisciplinary and collaborative hub where researchers work on the design and testing of innovative solutions to support the development of sustainable food systems. The UBC Farm acts as a unique platform where social, economic, and environmental interventions can be designed, tested, and monitored within a fully operating organic farm.

**\$3M**  
RESEARCH  
FUNDING  
RAISED



**38**  
ACTIVE  
RESEARCH  
PROJECTS



**29**  
CSFS  
ASSOCIATES







## RESEARCH THEMES

**CSFS research is focused on achieving sustainable food systems. We investigate real world problems, working side-by-side with people on the ground. Our research explores and tests innovative approaches that consider agroecological, environmental, and social dimensions to pursue a sustainable future. We aim to inform and transform the whole seed to plate continuum – from the farm field to your dinner fork.**

The CSFS-led **Diversified Agroecosystems Research Cluster**, now in its second year, is positioning the UBC Farm as a **Long-Term Socio-Ecological Research Station (LTSER)** a game-changing development that will make it possible to study long-term impacts of agro-ecological management interventions in comparison to traditional, short-term research projects of one to three years. The UBC Farm will be among the first farms in North America to become an LTSER and will become the central hub in an international experimental network of diversified (non-monoculture) research farms that will help scale-up technical developments. This will transform the possibilities of research at UBC and beyond and will amplify the impact of our findings.

In 2018-2019, the cluster developed new protocols to support the establishment of two new long-term monitoring programs, on biodiversity and water use, that will be first tested at UBC Farm. With the input of farmers, the cluster also worked on the design of an open-source software application called LiteFarm, which will both inform farm management decisions on diversified, small-scale farms and enable innovative research on agroecology and sustainable food systems.



### BC Food Web

***Funding: Investment Agriculture Foundation of British Columbia, Vancity Credit Union, Centre for Sustainable Food Systems (CSFS) at UBC Farm, Food and Agriculture Institute at the University of the Fraser Valley, Metro Vancouver Regional District***

To strengthen the public reach and on-the-ground applications of our research in BC food systems, CSFS and partners launched the BC Food Web in July 2018, mobilizing our research like never before in BC. Led by CSFS and University of the Fraser Valley researcher Dr. Lisa Powell, this freely-accessible online portal provides a searchable database of clear and concise research summaries intended for food producers, processors, policy-makers, and educators, as well as the general public. The BC Food Web also hosts webinars, decision tools, and longer-format reports and guides to facilitate knowledge mobilization among actors in the regional food system.





## Organic Science Cluster III Research Projects

Three CSFS projects received support from the Organic Science Cluster III (OSC3): “Connecting Environmental Sustainability with the Science of Organic Production,” including CSFS Associate Members Profs. Juli Carrillo and Sean Smukler, and Postdoctoral Fellow Dr. Alexandra Lyon. OSC3 is supported by the AgriScience Program under Agriculture and Agri-Food Canada’s Canadian Agricultural Partnership and over 70 partners from the agricultural community, with the Organic Federation of Canada (OFC) in collaboration with the Organic Agricultural Centre of Canada (OACC) at Dalhousie University. Two of these OSC3 projects are featured below.

### Integrated Pest Management

**Juli Carrillo, Assistant Professor, Faculty of Land and Food Systems**

Prof. Carrillo’s Plant-Insect Ecology and Evolution Lab is leading a multi-province, five-year Organic Science Cluster III project focused on ecological pest management of spotted wing drosophila (*Drosophila suzukii*) in small fruits and berries. The project aims to evaluate intercrops and botanical oils for spotted wing drosophila deterrence; assess the compatibility of spotted wing drosophila control methods with biological control by pest natural enemies, including endemic and exotic parasitoid wasps; and to develop microbial agents for biological control. Methods in the Prof Carrillo’s lab focus on techniques which could be adapted by growers to reduce pests and encourage beneficial insects in order to maintain economic and ecological sustainability.



### Organic Vegetable Nutrient Management Project

**Sean Smukler, Associate Professor, Applied Biology & Soil Science, Faculty of Land and Food Systems**

Organic cropping systems have been designed to improve soil health and maximize nutrient recycling on farm through the utilization of cover crops, crop rotation and organic amendments (e.g., composts and manures). It is challenging, however, to identify the right soil amendments, the ideal timing of their application and the best combination of soil management practices to optimize the nutrients cycling – and even more so for small scale organic vegetable producers, where nutrient demands can be high and variable across production fields. This project aims to identify improved nutrient management strategies to enhance production and economic outcomes for organic farmers while minimizing the environmental footprint of agriculture.



For a complete list of all our research projects and publications visit [ubcfarm.ubc.ca/research](http://ubcfarm.ubc.ca/research). For research summaries visit [bcfoodweb.ca](http://bcfoodweb.ca).



# EXPERIENTIAL TEACHING & LEARNING

CSFS provides leadership and support for teaching and learning on topics related to sustainable food systems. Our support includes: classroom instruction, experiential, community, and service-based learning. We provide opportunities for professional practice related to sustainable food systems education, food literacy workshops, and a Practicum in Sustainable Agriculture.

**1,500**  
STUDENTS

IN **27**  
CSFS-RELATED  
COURSES ACROSS  
**8** FACULTIES



**700**  
VOLUNTEERS  
**5,000+** HOURS



**39,000+**  
PARTICIPANTS IN  
**900** FOOD LITERACY  
EVENTS







# STUDENT ENGAGEMENT

The CSFS at UBC Farm offers many ways that students can engage with us and enhance their understanding with experiential learning in all aspects of the food system.

## Future of Food Global Dialogue Series

This dialogue series attracts food security and sustainability experts from close to home and across the globe to engage audiences in the many facets of the food system. This year the series brought 11 speakers, such as Drs. Annette Desmarais (University of Manitoba), Lesley Frank (Acadia University), Harriet Friedmann (University of Toronto), Mariaelena Huambachano (California State University, Northridge), and Morten Kromann Nielsen (University College Lillebaelt, Denmark) who are at the forefront food systems literacy and advocacy work.

## Experiential Tours

UBC Farm tours provide students and learners with immersive experiences in the fields and forest of the UBC Farm. Our tours are tailored to specific learning outcomes with UBC classes, and focus on CSFS research projects, Indigenous gardens, and food cultivation.

- 57 academic tours given to 1,400 students and faculty members
- 24 community and non-UBC academic tours given to 440 participants
- 22 weekly UBC Farm Farmers' Market tours to 329 participants

## Career Development

The Career Development in Land and Food Systems course (LFS 496) continues to grow, engaging with more students and community partners. LFS 496 students are given a mentored experience in a food system work place, with course assignments and reflection to support their practical learning.

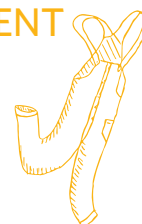
The UBC Work Learn Program supports and subsidizes meaningful work experiences on campus and allows students to engage with all aspects of work at the CSFS.

27

WORK LEARN  
STUDENTS



73 LFS CAREER  
DEVELOPMENT  
STUDENT  
INTERNS





## Farm Practicum

**The UBC Farm Practicum in Sustainable Agriculture's mission is to inspire and cultivate new farmers and sustainability educators who will transform their communities and their food systems.**

Practicum students are trained in a wide array of skills including crop protection, sustainable cultivation methods, soil fertility management, business management, and marketing. This was the 11th year of the program which has graduated a total of 109 students.



Dave established Lentelus Farms about halfway through UBC Farm's Practicum in Sustainable Agriculture. "I still had a year and a half left of my UBC degree in Conservation, but thanks to the practicum coordinators I knew that small scale farming was a viable career path for me, so I signed a lease on a little picturesque farm in the Comox Valley." Dave now rents three farms, raising heritage pastured hogs, growing grain for them, and growing garlic from UBC Farm seeds.

"I'm continuing to expand and to learn," adds Dave. "Eventually I hope to be doing my own butchering to complete the circle of hog production. The UBC Farm Practicum showed me that small- to medium-scaled farming has a strong future in British Columbia and that those who are willing to work hard can make a career out of farming."

**- Dave Semmelink, 2014 Graduate of the UBC Farm Practicum**



## Sustainable Food Systems Minor

**The UBC Minor in Sustainable Food Systems develops students' understanding of the connections between food, health, society and the environment, and gives them the tools to solve complex food systems problems locally and globally.**

Newly launched this year, the 18-credit minor is available to all Land and Food Systems and Science undergraduate students in their second year or above. Students completing the minor are immersed in experiential and interdisciplinary learning opportunities, involving several departments and faculties across UBC, as well as off-campus partners.







# INDIGENOUS INITIATIVES

The Centre for Sustainable Food Systems (CSFS) at UBC Farm is located on the unceded ancestral territory of the hən̓q̓əmiṇəm-speaking xʷməθkʷəy̓əm (Musqueam) people, whose guidance and collaboration is vital to all activities on the Farm.

Four Indigenous initiatives are active at the UBC Farm: **Tal A'xin: Maya in Exile Garden**, established in 2000 as one of the longest-running community-based projects at the UBC Farm, **Tu'wusht Garden Project**, initiated in 2005 by Vancouver Native Health Society, **xʷčičəsəm: Indigenous Health Research & Education Garden**, led by LFS Indigenous Research Partnerships, and the **Culturally Relevant Urban Wellness Program (CRUW)**, developed in 2011 by Vancouver Aboriginal Child and Family Services Society. Each year, these initiatives bring thousands of visitors to the Farm and involve hundreds of UBC students in learning about Indigenous culture, land, medicine and food through class visits, group projects, graduate research, and directed studies.

## Highlights

- 2,326 people engaged in all Indigenous programs at the UBC Farm in 2018-2019.
- The xʷčičəsəm Garden had 1,477 participants in 94 garden events in the previously named Indigenous Health Research Education Garden.
- The Tu'Wusht Garden Project had 760 participants in its 50 weekly community kitchens with urban Indigenous participants who grow, prepare, and eat food while sharing knowledge and skills.
- CRUW had 41 participants working with elders, knowledge keepers, staff, and guest instructors in 16 events over eight months to foster wellness and skill development in vulnerable youth.
- The Maya In Exile Garden had 20 volunteers and hosted 18 cooking workshops and 10 garden tours.
- Dave Robinson, carver and LFS Master's student of the Timiskaming First Nation, became the first Artist in Residence with the UBC Indigenous Research Partnerships at the xʷčičəsəm Garden. He is the carver of Thunder Child, which resides at xʷčičəsəm, and completed the 24-foot red cedar sculpture of a thunderbird and thunder snake at xʷčičəsəm.





# YOUTH FOOD LITERACY

CSFS food literacy programs engage youth of all ages in hands-on activities to explore their food systems from field to fork.

- Seven Community Field Experience (CFE) teacher practicum students from the UBC Faculty of Education designed and implemented FarmWonders curriculum
- 1,626 children participated in 91 FarmWonders Field Trips
- 298 participants in 12 FarmWonders Camps
- 7,895 children and educators participated in 13 Think&EatGreen@School initiatives
- 50 Intergenerational Landed Learning participants

## FarmWonders

The **FarmWonders** program is a community education initiative that allows preschoolers through to secondary students to engage in hands-on activities at the UBC Farm through day camps and field trips. Children learn about the social and ecological aspects of the food system through science-based, experiential learning.

**FarmLeaders**, in the FarmWonders program, provides leadership training for children aged 12 to 14.

## Intergenerational Landed Learning

The **Intergenerational Landed Learning Project**, led by the UBC Faculty of Education, is a unique program dedicated to the advancement of knowledge and understanding of sustainable living, learning, and practice through land-food community-based environmental education programs and research. Elementary students and adult mentors (with an emphasis on older adults) learn together in the field. Teachers work with project staff to integrate and extend the experiential component of the program with classroom lessons across the curriculum.

## Think&EatGreen@School

Think&EatGreen@School (TEGS) supports teacher food literacy professional development through school-year workshops and Summer Institutes, and offers small grants to schools and non-profit organizations, as well as support for research on food literacy and sustainable food systems education. This two-year (2017-2019) iteration of TEGS is funded by the City of Vancouver, and is now based at CSFS in partnership with the Vancouver School Board. TEGS builds on the 2010-2015 SSHRC- and CIHR-funded phases of the project.



**9,800**  
CHILD & YOUTH  
FOOD LITERACY  
PROGRAM  
PARTICIPANTS







# COMMUNITY ENGAGEMENT

**Community education and outreach activities encourage education in sustainability, environmental stewardship, healthy diets and lifestyles, and social development.**

## Markets

**Our markets explore and exemplify healthy and sustainable food systems, encourage sustainable food literacy, foster socially just food systems for all, and cultivate the local food economy.**

We host three weekly markets during the growing season. Our Saturday multi-vendor UBC Farm Farmers' Market acts as an incubator market for up-and-coming local producers and processors, offering lower fees, opportunities for our Feeding Growth and Practicum alumni, and serves as a training ground for UBC students, including LFS 496 practicums and UBC Sauder School of Business marketing projects. We also sell our produce at Tuesday Evening Market at the UBC Farm and the Wednesday Market outside the UBC Bookstore. Our markets strive to increase food literacy and we have an outreach booth at each market providing food systems knowledge mobilization and sharing how the students and the community can get involved with food systems learning and action.

## Events

**We curate events for our diverse audiences to support our programming and spark food systems literacy, learning and action.**

- Our 2nd annual UBC Farm Fall Fair attracted 1,370 visitors featuring workshops, demos, research presentations, and Farm tours
- The 16th annual Farmade, in September, offered an opportunity for new and returning students to discover and connect with the UBC Farm
- Seeds of Knowledge attracted over 1,000 visitors to our research showcase at the Farm, including researcher demonstrations in the field
- The 2nd annual outdoor Long Table Dinner series showcases local food in partnership with UBC Food Services
- Teas for Bees is a family-friendly picnic focused on bee and pollinator education
- Our first annual Community Iftaar provides a space for Muslims on campus to break the fast together during Ramadan and reflect on food and how it's grown, co-hosted by SFU's Centre for Comparative Muslim Studies



## Feeding Growth

Through community engagement and education activities, Feeding Growth amplifies the local food economy and the development of exceptional, healthy, sustainable, and socially responsible retail and packaged goods companies.

Feeding Growth has created a community of entrepreneurs since its launch in 2015. Feeding Growth hosts a five-workshop series, “Scale your Progressive Food Business,” and two Coffee Series events for new and emerging food processors and entrepreneurs, where alumni now come back as mentors for the up-and-comers. This year, 152 people from 112 food businesses participated in Feeding Growth workshops. Feeding Growth is a partnership between CSFS, Vancity, and Fluid Creative.



## Community Kitchen

Our Community Kitchen Series addresses food literacy, food security and wellness on campus by bringing people together to cook a meal together, under guidance from UBC Farm staff, at accessible prices (where no one is turned away), using imperfect vegetables cultivated at the UBC Farm. They take place monthly and last year brought 150 UBC students and neighbours together for 15 food and cooking education events.

## Food Skills Workshops

CSFS workshops offer hands-on, integrative, interactive, and experiential learning opportunities for people at UBC and across Vancouver. The program has nearly doubled its participants for a total of 61 workshops with 853 workshop participants.

## Volunteering

**The CSFS Volunteer Program enhances community food literacy, increases student experiential learning, and supports organic production at the UBC Farm.**

- The **Urban Farmers** volunteer program teaches participants about all aspects of sustainable farming, from weeding to planting and harvesting
- Volunteers at the **xʷčičəsəm and Tuʷusht gardens** gain hands-on experience with traditional foods and medicines and learn from Indigenous Elders
- Market volunteers gain business and retail experience at the **UBC Farm Farmers' Market**
- Volunteers with **FarmWonders** learn to lead children's food literacy activities
- Volunteers of all-ages learn sustainable growing and cultivation skills in the **Children's Learning Garden**



# FOOD

The UBC Farm is situated within a 90-year-old coastal western hemlock forest that comprises a mosaic of cultivated annual crop fields, second-growth forest, perennial hedgerows, fruit orchards and educational gardens. The UBC Farm cultivates over 200 varieties of fruits, vegetables and herbs, and also features honey beehives, seed production, flowers, and egg-laying, pasture-raised hens. This living agroecological system provides a broad range of opportunities for collaborative research, teaching and experiential learning for UBC students, future farmers, and the urban community.

**20%**  
STUDENT  
DISCOUNT  
LAUNCHED



**109,000 lbs**  
OF FOOD  
GROWN



**20%**  
GROWTH  
IN MARKET  
SALES







**Food is foundational to all we do. The cultivation and sharing of food at the UBC Farm is what makes grounded, applied research and learning possible. Cultivating food is essential to increasing food systems literacy and moving toward a food secure and sustainable future.**

Food sales through our farmers' markets, CSA and wholesale outlets such as UBC Food Services create community partnerships, experiential learning and training opportunities for students and staff, campus food engagement, as well as providing a key revenue source to support the academic mission of the CSFS.

The UBC Farm practices organic agriculture, modelling a small scale diversified farm. What and how we cultivate reflect the interests of our researchers, instructors, students, and customers with a focus on experimentation and innovation to achieve sustainable agricultural practices. We are committed to sharing our knowledge gathering and research, as well as demonstrating transparency in our production practices, including our organic certification process, harvesting, crop rotation and seed saving. Researchers and farmers look to the UBC Farm to learn from our practices: this year we hosted local groups as well as delegations from mainland China, South Korea and Nigeria.

We are proud to share our farming practices, informed by research and knowledge gathering, and to support small-scale, diversified farmers across our region, continent and beyond.

## Student Discount

The UBC Farm began to offer a student discount this year, supported by Alma Mater Society (AMS) student fees, after a successful referendum launched by the AMS. UBC students receive this 20 per cent discount on UBC Farm food at all of our three weekly markets. This discount makes our local, organic food more accessible for the student population and plays a part in addressing student food insecurity on campus. We launched this discount on June 1, 2018 and since its launch, the discount has been applied 1,845 times.

## UBC Food Services

In 2018-2019, UBC Food Services purchased over \$67,000 of produce from the UBC Farm, exceeding their previous goal of \$50,000. UBC Food Services is committed through their Food Vision and Values to prioritize purchasing from the UBC Farm, and shares this model with other universities with campus farms.



**Connect with us!**  
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**UBC FARM**  
Centre for Sustainable Food Systems

