





## "Every decade needs its own manual of handicraft."

Liberty Hyde Bailey, founder of the College of Agriculture & Life Sciences at Cornell University

In 2023, our Cornell Food Science Extension team again achieved remarkable impact. The scale of their diverse programs—over 400 events, 13,000 participants, and 60,000 contact hours—is considerable but not surprising. Many of these successful offerings reflect decades of hard work in developing and maintaining high-quality extension relationships with stakeholders.

But, as should be evident from further reading, these efforts are not static. Our extension teams regularly adapt their offerings to address emerging needs and new audiences. In 2023, this included the development of a Spanish-language podcast series by the Produce Safety Alliance team; the introduction of a Food Innovation Lab and a food safety regulations course designed for smaller food manufacturers through the Cornell Food Venture Center; and online course materials from the Institute for Food Safety to address Good Manufacturing Practices for dietary supplement manufacturers.

The Food Science Extension team continues to excel in revising their "manual of handicraft" in response to New York State's evolving food sector. We hope you enjoy learning about their accomplishments as much as we did.

Sincerely,



A new research and test kitchen for food entrepreneurs opened at Cornell AgriTech, further enriching a robust ecosystem to help grow New York's food and agriculture industries. The Food Innovation Lab is a collaboration between the New York State Center of Excellence for Food and Agriculture and the Cornell Food Venture Center. It opened on July 25 with a ribbon-cutting ceremony attended by Cornell leadership and public officials.



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## Education, Innovation, Integration to Strengthen Food Industry Connections

**Cornell Food Science Extension Programs** apply research and provide education in areas related to food safety, food production and the principles of food science. The Cornell Food Science Extension mission is to help farmers, food businesses and consumers in New York State and beyond produce safe, healthy, and wholesome foods. Through delivery of events, courses, client-based services and applied research, the Food Science Extension Programs educate, problem-solve and apply practical information that strengthen the food industry—and 2023 saw the introduction of new programs that continue to leverage these strengths.

#### **Educate: Bringing Food Products to Market**

The Cornell Food Venture Center (CFVC) introduced a 10-week online certificate program as part of Food Spark, a program for qualified candidates to participate in a virtual eCornell Food Product Development Certificate program. During five interactive courses, students are guided through the process of bringing a new food or beverage product to market. Course participants learn how to create a prototype and evaluate the feasibility of a new food or beverage product, identify hazards and control measures, determine appropriate processing and packaging systems, and learn about applicable regulations.

#### Innovate: Fostering Student Collaboration in Sustainability, Health and Waste Reduction

The Cornell Institute for Food Systems Industry Partnership Program (CIFS-IPP), with support from Cornell AgriTech, the Cornell Nolan School and the Tata-Cornell Institute, sponsored its first Food Hackathon event in October. Hackathons act as catalysts to spur collaboration and discovery by exposing students to real-world problems. Twenty-two student teams worked to create and pitch solutions in four focal challenge areas in new sustainable food products, consumer health and wellness, food waste mitigation, and flexible manufacturing set by food industry partners.

#### Integrate: Workforce Development

The Cornell Dairy Foods Extension team implemented a major expansion of its workforce recruitment and development pilot program, Food and Dairy Processing Bootcamp. The bootcamp, conducted in partnership with regional economic development organizations, introduces high school seniors and individuals seeking advancement to careers in dairy processing. Grant funding from the NY Department of Labor and Empire State Development allowed the hiring of workforce specialists who create a pipeline from career seekers to dairy-specific training, reduce barriers to employment and a link to available positions in the New York dairy industry.

# 2023

**Cornell Food Venture Center (CFVC)** developed a new course, Food Safety and Food Safety Modernization Act (FSMA) Regulations for Small Food Processors, administered online by the Institute for Food Safety at Cornell University. The course reviews the requirements of FSMA's Preventive Controls for Human Foods Rule as it applies to small-scale food manufacturers.

**CFVC Pilot Plant** manages the operation of the new Food Innovation Lab, in collaboration with the New York State Center of Excellence for Food and Agriculture. Conveniently located near the Pilot Plant, it provides entrepreneurs and food companies with the necessary resources and expertise needed to develop innovative food products.

**Food Processing and Development Laboratory** offered technical assistance and access to its facility for participants of the inaugural Northeastern Dairy Product Innovation Competition, produced by Cornell's Center for Regional Economic Advancement in partnership with the Northeast Dairy Foods Research Center. The competition supports food innovators in launching products made from Northeast dairy ingredients.

**Institute for Food Safety at Cornell University** launched a new on-demand online course, Good Manufacturing Practices (GMPs) Part 111 for Dietary Supplements, which reviews federal requirements for GMP compliance in manufacturing, packaging, labeling, or holding operations for dietary supplements.

**Produce Safety Alliance** released a six-part Spanish-language podcast series "¿Qué vaina con la inocuidad?" to support Latino/Hispanic growers and packers as they increase their produce safety understanding and work to establish a positive food safety culture on farms and in packinghouses.

## By the Numbers

#### **Total Events**

401	Events Delivered or Presented
13,060	Stakeholders Participated
67,277	Total Contact Hours

#### **Adult Education**

91	Courses Conducted
2,685	Attendees/Participants

#### **Client-Based Services**

1,289	Businesses Served
8,542	Services Conducted
6,230	Consultation Hours

#### Applied Research

119	Research	Studies	Assisted
110	itesearen	Diddies	11001000

#### **Program Growth**

7	New Extension Associates
	and Staff Members

## Institute for Food Safety at **Cornell University**

The Institute for Food Safety at Cornell University (IFS@CU) takes a comprehensive approach to providing training and conducting applied research to support the food industry in reducing foodborne illness risks. With expertise in fresh produce, dairy, juice and food processing, the IFS@CU aids the food industry in complying with federal regulatory requirements in the Food Safety Modernization Act (FSMA) and addresses food safety challenges that stretch from farms to consumers' tables.

In 2023, the IFS@CU continued to offer the GMPs Part 117 for Human Food Online Course and the series Food Industry Virtual Office Hours. In addition, the IFS@CU launched two new on-demand and self-paced online courses. The Good Manufacturing Practices (GMPs) Part 111 for Dietary Supplements Course reviews the requirements in 21 CFR Part 111 - Current Good Manufacturing Practice in Manufacturing, Packaging, Labeling, or Holding Operations for Dietary Supplements and provides examples and strategies for compliance, as well as resources for additional information. The Food Safety and FSMA Regulations for Small Food Processors Course, developed by the CFVC, reviews requirements of the FDA's Food Safety Modernization Act (FSMA) Preventive Controls for Human Foods Rule (21 CFR Part 117) as it applies to small-scale food manufacturers.

Website: cals.cornell.edu/institute-for-food-safety

Contact: Nancy Long (foodsafety@cornell.edu)



IFS@CU launched a new on-demand online course, Good Manufacturing Practices (GMPs) Part 111 for Dietary Supplements, which reviews federal requirements for GMP compliance in manufacturing, packaging, labeling, or holding operations for dietary supplements.



13 Events Delivered or Presented 1,041 Total Attendees/Participants 5,934 Total Contact Hours



**GMPs Part 117 Online Course** 364 Certificates Issued 5,242 Training Hours

## Cornell Institute for Food Systems Industry Partnership Program

#### The Cornell Institute for Food Systems Industry Partnership Program (CIFS-IPP)

is a public-private partnership that facilitates and enhances the engagement of Cornell University faculty, staff, and students with industry scientists, technologists, and business leaders across complex global food systems. Bringing together expertise in scientific research, business economics, and industry practice, CIFS-IPP works to find solutions to today's food systems challenges and help shape tomorrow's discoveries.

A key accomplishment for 2023 was the launch of a new annual Food Hackathon event. Hackathons are designed as catalysts to spur innovation using minimal physical resources and maximum brain power through a highly facilitated event that exposes students to real-world industry and consumer problems.

The 2023 Cornell Food Hackathon brought together 150 interdisciplinary students from diverse degree programs, majors, and every college and school at Cornell. Twenty-two student teams worked to create and pitch solutions in four focal challenge areas in new sustainable food products, consumer health and wellness, food waste mitigation, and flexible manufacturing set by our food industry partners.

Website: cals.cornell.edu/cifs-ipp

Contact: Rajni Aneja (<u>ra283@cornell.edu</u>)



Students collaborate during a brainstorming session at the 2023 Cornell Food Hackathon.



**18 Corporate Partners** 

10 Full Members

8 Affiliate Members



15 Events Delivered or Presented570 Total Attendees/Participants

## National Good Agricultural **Practices Program**

The National Good Agricultural Practices (GAPs) Program has helped to ensure the safety of fruits and vegetables since 1999, by working with growers and packers to reduce microbial risks during growing, packing, storage, and transportation. Through a comprehensive education and extension program, National GAPs Program personnel facilitate the development of farm food safety plans to increase understanding and implementation of GAPs, as well as how they align with FDA's regulations under the Food Safety Modernization Act (FSMA) Produce Safety Rule and third-party audit requirements.

Program personnel focus on in-person and online training to small and midsized farm and packing house owners, farm workers, beginning farmers, sociallydisadvantaged farmers, small processors, and small fresh fruit and vegetable wholesalers. In addition, National GAPs Program personnel conduct needs-based research including evaluating microbial risks associated with soil amendments and water used during fresh produce production. They support growers, packers, and farm workers to effectively implement food safety practices, which helps to keep safe and wholesome produce available for consumers and maintain farm economic viability.

**Contact:** Michele Humiston (mmc15@cornell.edu)



Fall kale harvest on a New York farm.



4 Produce Safety Courses Offered 48 Participants 96 Total Contact Hours

## **Produce Safety Alliance**

The Produce Safety Alliance (PSA) provides fundamental, science-based, on-farm food safety knowledge to fruit and vegetable growers, packers, educators, regulatory personnel, and others interested in the safety of fresh produce. Established in 2010, the PSA is a collaboration between Cornell University, FDA, and USDA to prepare produce growers to meet the regulatory requirements in the Food Safety Modernization Act (FSMA) Produce Safety Rule (PSR). The PSA team trains and mentors PSA Trainers and Lead Trainers to ensure high quality courses are available globally so that growers can comply with the FSMA PSR training requirement in § 112.22(c).

In addition to its focus on effective training, the PSA team also provides technical assistance to growers and trainers. These efforts include the development of novel English and Spanish educational materials, supplementary training information, and one-on-one bilingual consultation. Helping the produce industry to implement food safety practices protects consumers and ensures the economic viability of farms and rural communities. Recognizing that the produce industry is comprised of diverse growers from all over the world, the PSA team continues to expand accessibility to information through additional translations of its training manual. This includes Chinese, Portuguese, and Korean manuals, the development of illustrations for low literacy individuals, and updated policies that allow trainings to be extended to growers regardless of the language they speak or literacy level.

Website: cals.cornell.edu/produce-safety-alliance

Spanish: es.producesafetyalliance.cornell.edu

Contact: Michele Humiston (mmc15@cornell.edu)



The PSA Advanced Trainer Workshop provides an opportunity for educators, trainers, regulators, and produce industry personnel to expand their food safety technical knowledge. This three-day workshop features lectures and hands-on activities that provide opportunities to improve participants' food safety skills.

For more information, visit: <a href="mailto:cals.cornell.edu/psa/advanced-trainer-workshop">cals.cornell.edu/psa/advanced-trainer-workshop</a>

\*Note: the data below represents training activities conducted by the PSA team, along with their national and international cadre of trainers, as a cumulative total since September 2016.



4,413 Grower TrainingCourses Offered\*92,038 Participants885,986 Training Hours



136 Train-The-Trainer Courses Offered\* 3,714 Participants 67,664 Training Hours

#### Cornell Food Venture Center

Cornell Food Venture Center (CFVC) provides comprehensive assistance to new and established food entrepreneurs, processors, and farmers to enhance food safety, satisfy regulatory compliance and promote economic development. Services include scheduled process and process review validation for processed foods, laboratory services and consultation for product safety and stability, reduced oxygen packaging hazard analysis and validation, heat penetration studies, food classification letters, and training.

In 2023, the CFVC worked with 612 food businesses-half of which were brand new companies—to evaluate the food safety parameters of 1,922 samples and to approve 1,800 scheduled processes for food products. This paved the way for 1,373 new food products entering the marketplace. The CFVC's Small-Scale Food Entrepreneurship Initial Guide, which provides guidance on food science, food safety, and food business development, was viewed/downloaded 1,019 times.

The CFVC developed a new course, Food Safety and FSMA Regulations for Small Food Processors, which is administered by the Institute for Food Safety (IFS@ CU). Additionally, in collaboration with New York's Agriculture in the Classroom program, the CFVC delivered "Edible Science" training to 25 high school teachers from across the state, in coordination with other programs at Cornell AgriTech including Horticulture, Microbiology, Center of Excellence, and IFS@CU.

Website: cals.cornell.edu/cfvc

Contact: cfvc@cornell.edu



Dr. Bruno Xavier, Associate Director of the Cornell Food Venture Center, runs tests on a jar of Amish Agriculture shiitake mushroom sauce.



36 Events Delivered or Presented 695 Total Attendees/Participants 1,875 Total Contact Hours



5 Better Process Control School **Trainings Offered** 98 Certificates Issued



612 Businesses Served 2,379 Services Conducted 375 Consultation Hours

#### **CFVC Pilot Plant**

The CFVC Pilot Plant has the perfect combination of established food processing and preservation technologies with innovative equipment to promote the development and production of healthy, high quality foods. With a variety of equipment and product development resources available including the new Food Innovation Lab, the CFVC Pilot Plant provides clientele the ability to make their final food product prototype—from starting materials to the final packaged product—all in one location. It also provides a unique setting to trial and compare different equipment and technologies to address quality and shelf-life stability, and to determine the optimal manufacturing process. The CFVC Pilot Plant assists clientele with research and development, scale-up trials, and start-up runs.

In 2023, the CFVC Pilot Plant conducted product trials with 38 different clients, providing 300 services and 5,112 hours of consultation. In addition, Cornell faculty, staff, and students conducted a total of 20 research trials utilizing the state-of-the-art equipment located in the pilot plant.

Website: <a href="mailto:cals.cornell.edu/cfvc-pilot-plant">cornell.edu/cfvc-pilot-plant</a>
Contact: Roger Morse (<a href="mailto:rtm1@cornell.edu">rtm1@cornell.edu</a>)



Cathy Young, NYS Assemblyman Jeff Gallahan, Olga Padilla-Zakour, NYS Senator Pam Helming, Carmen Moraru, Shannon Ealy, Brendan Tydings and Amie Hendrix celebrate the opening of the Food Innovation Lab.

A collaboration between the CFVC Pilot Plant and the New York State Center of Excellence for Food and Agriculture, it provides entrepreneurs and food companies with the necessary resources and expertise needed to develop innovative food products.



2 Courses Offered59 Total Attendees/Participants544 Total Contact Hours



38 Businesses Served300 Services Conducted5,112 Consultation Hours



20 Research Trials Assisted (Cornell University)

## **Dairy Foods Extension**

Dairy Foods Extension's mission is to provide comprehensive training and consulting to the dairy industry to assist in the sustainable manufacture of safe, quality dairy products. Courses provide training to dairy processors in vital topics including milk and dairy product quality and safety, basic dairy microbiology, GMPs, unit operations, sanitation, food safety plans, audits, and state and federal regulations. The program offers an extensive set of live and virtual workshops that lead towards certificates in fluid milk production, membrane processing, cheese production, ice cream production, and production of yogurt and other cultured dairy products.

In 2023, Dairy Foods Extension implemented a major expansion of its workforce recruitment and development pilot program, Food and Dairy Processing Bootcamp. The bootcamp, conducted in partnership with regional economic development organizations, introduces high school seniors and adults seeking advancement to careers in dairy processing. Grant funding from the NY Department of Labor and Empire State Development allowed the hiring of workforce specialists who create a pipeline from career seekers to dairy-specific training, reduce barriers to employment and a link to available positions in the New York dairy industry. To date, there have been 105 participants across four bootcamps held in separate locations across New York with another four bootcamps planned for 2024.

Website: cals.cornell.edu/dairy-extension Contact: Louise Felker (<a href="mailto:lmf226@cornell.edu">lmf226@cornell.edu</a>)



Participants in the Cornell Dairy Foods Extension certificate program workshop conduct a sensory evaluation of cottage cheese samples.



35 Events Delivered or Presented 1,009 Total Attendees/Participants 13,150 Total Contact Hours



110 Businesses Served 122 Services Conducted 724 Consultation Hours



14 Research Trials Assisted (Cornell University)

## Cornell Dairy Plant

The Cornell Dairy Plant is an IMS-rated, New York State Department of Agriculture and Markets licensed, Kosher certified facility with 4,760 sq. ft. of processing area and over 10,000 sq. ft. of climate-controlled refrigerated and frozen storage. Capabilities include: fluid transportation, raw and pasteurized fluid milk storage, a computer-generated batching system, HTST pasteurization, a homogenizer two-stage system, a cold milk separator, a yogurt room (minimum batch size 50 gallons), ice cream production and packaging (minimum batch size is 100 gallons), fluid packaging, and butter production and packaging (minimum batch size is 10 gallons).

In addition to producing products for Cornell and other campuses, the plant is designed to support Dairy Foods Extension efforts by providing a hands-on training facility to more than 200 industry professionals and students during an average year. Specific trainings that take place in the Dairy Plant include the Food Safety, Sanitation & Membrane Extension Workshop. Several university courses use the facility to host lessons, including Food System Approaches to Food Safety, and Basic Food Science.

Website: cals.cornell.edu/cornell-dairy

Contact: <a href="mailto:cornell.edu">cornell.edu</a>



Student teams from the Basic Food Science Class compete to create the best ice cream flavor, which will be produced in large scale using the Cornell Dairy Plant.



136,260 gal. of Milk Bottled 100,864 lb. of Yogurt Produced



42,816 gal. of Ice Cream Produced 1,885 lb. of Butter Produced



6 Classes Used Facility for Lessons278 Students

3 Workshops Used Facility for Demonstrations/Activities

80 Participants

## Food Processing and **Development Laboratory**

The Food Processing and Development Laboratory (FPDL) is a 6,000 sq. ft. pilot plant that serves as a statewide center for food and dairy processing education and training, product development, and cutting-edge food processing research. The facility is ideal for manufacturing test runs of new formulations, producing consumer samples, and testing the shelf-life of samples on a scale that mimics real production.

The FPDL is a licensed New York State dairy plant and meets all state and federal regulatory requirements for processing food for human consumption. It is equipped with a wide selection of pilot-scale equipment with capabilities including drying, evaporating, HTST and vat pasteurizing, separating, and packaging. The FPDL also maintains a cheese making area with various equipment. Experienced full-time professionals are able to assist in all aspects of development and processing. Specific workshops that take place in the FPDL include Introduction to Artisan Ice Cream and Frozen Desserts, HTST Workshop and the Basic Science of Cheese.

Website: cals.cornell.edu/fpdl

Contact: Robert Ralyea (rdr10@cornell.edu)



The FPDL offers services to clients seeking to test food concepts or prototypes, as well as offering expertise in food safety and production optimization.



10 Internal Clients/ **Cornell University** 

18 External Clients/ **Businesses Served** 

4,847 lb. of Cheese Produced



3 Workshops Used Facility for **Demonstrations/Activities** 

80 Participants

#### Cornell Sensory Evaluation Center

The Cornell Sensory Evaluation Center has served the Department of Food Science, the larger Cornell Community and a variety of businesses, large and small, since the early 1990s. Its mission is to provide learning opportunities to students interested in the fields of sensory and consumer research, to advance research in sensory evaluation, and to help businesses develop and improve their consumer product offerings through consumer and sensory testing.

The Sensory Evaluation Center conducts contract sensory evaluation and consumer product testing for commercial clients. It also offers consultations and custom learning experiences in all matters related to sensory product testing. The Sensory Evaluation Center supports the Food Science Milk Quality Improvement Program through its milk sensory panel, the Dairy Foods Extension program through teaching sensory modules within Dairy Foods Extension courses, the New York State Dairy Industry by preparing defective milk kits and providing consultation services, and other Cornell extension programs (e.g., the Cornell Maple Program, and the Viticulture & Enology Program) through sensory product testing.

Website: blogs.cornell.edu/sensoryevaluationcenter

Contact: Alina Stelick (ap262@cornell.edu)



Samples of wine are prepared for testing in the Cornell Sensory Evaluation Center.



8 Businesses Served 332 Services Conducted



5 Events Delivered or Presented4 Courses Offered

150 Participants

## Cornell Craft Beverage Institute

**Cornell Craft Beverage Institute (CCBI)** provides resources to help winemakers and cider makers with important decisions from fruit sourcing and fermentation techniques to quality assurance and regulatory compliance. CCBI staff deliver extension support and research-based innovations to benefit growers, producers and consumers.

In addition to training and workshops, the extension program also offers services through the Cornell Craft Beverage Analytical Lab. Services include chemical, microbiological and sensory analyses of juice, wine, cider, beer, and distillates for quality assurance, troubleshooting and regulatory compliance.

Website: cals.cornell.edu/cornell-craft-beverage-institute

Contact: Beth Chang (eab54@cornell.edu)



CCBI specializes in educating and training craft beverage professionals at every level of their business, as well as processing samples for industry and research.



13 Events Delivered or Presented 975 Total Attendees/Participants 5,870 Total Contact Hours



5 Courses Offered 110 Participants



261 Industry Clients Serviced 3,123 Industry Samples Analyzed 1,302 Research Samples Analyzed 4,756 Services Conducted 37 Research Trials Assisted (Cornell University)

## Cornell Microbial Food Safety and Quality and Outreach Program

The Cornell Microbial Food Safety and Quality and Outreach Program specializes in evaluating the microbial safety of fruit and vegetable processed foods and beverages. The lab offers services to conduct UV validations, product shelf-life studies, and microbiological analyses. In addition to analytical services, the team provides training and assistance to the food and beverage industries as well as state and federal inspectors. In 2023, the program provided client-based services to 203 businesses for a total of 931 services conducted.

Website: blogs.cornell.edu/worobolab/worobo-service-lab

Contact: Ann Vegdahl (acv45@cornell.edu)



The Microbial Food Extension Lab works closely with food producers and processors to provide fee-based services focused on microbial food safety.



6 Juice HACCP Workshops189 Participants128 Virtual Consultations6,720 Total Contact Hours



421 Product Microbial Analyses47 Product Microbial AnalysesPerformed for Product Deviations147 Product Shelf-Life Analyses



27 Pathogen Challenge Studies175 UV Validations33 UV Pathogen Validations9 Research Trials Assisted (Cornell University)

#### High Pressure Processing Validation Center

The High Pressure Processing (HPP) Validation Center conducts cutting-edge research and tests HPP-processed food products requiring a validation to establish processing conditions that meet regulatory requirements. HPP is a non-thermal alternative to thermal pasteurization, allowing food products to maintain sensory qualities and nutritional characteristics that are often diminished in heat-treated products.

The HPP Validation Center offers three types of customized services, including validation studies to provide HPP processing conditions that meet regulatory requirements for pathogen inactivation; physicochemical evaluations to detail color, texture and overall product quality after varying HPP treatments; and microbiological shelf-life studies to evaluate variable HPP treatments of packaged products for spoilage bacteria, yeast and molds.

Website: cals.cornell.edu/hpp-validation-center

Contact: Andy Humiston (gah78@cornell.edu)



As an alternative to thermal processing, HPP offers a solution to keep food products safe while maintaining freshness, delivering superior sensory quality, and preserving nutritional characteristics.



49 HPP Safety Validations 5 HPP Shelf-Life Analyses



32 HPP Facility Tours 2 Visiting Scientists 256 Total Attendees/Participants 100 Total Contact Hours

## New York Sea Grant: Seafood Safety Training

The New York Sea Grant (NYSG), a cooperative program of Cornell University and the State University of New York (SUNY), is one of 34 university-based programs under the National Oceanic and Atmospheric Administration's National Sea Grant College Program. Since 1971, NYSG has represented a statewide network of integrated research, education and extension services promoting coastal community economic vitality, environmental sustainability, citizen awareness and understanding about the State's marine and Great Lakes resources. The NYSG's Seafood Safety Training program works with the seafood industry to promote safe, sustainable production of high quality seafood by providing training and resources for consumers, producers, processors and fishermen.

In 2023, NYSG hosted and assisted with seven Seafood HACCP Segment Two trainings. NYSG training efforts resulted in a total of 83 participants earning their Seafood HACCP training certificate.

Website: nyseagrant.org/seafood

Contact: Michael Ciaramella (mc2544@cornell.edu)



New York Sea Grant worked to expand its training program to include seaweed-specific food safety trainings to support the emerging seaweed industry in New York State. A variety of new resources have been published online and a USDA grant awarded to create a seaweed specific hazards and controls guide.



Seafood HACCP Online Course 2,118 Participants 21,180 Training Hours



Seafood HACCP Segment Two 7 Courses Offered 83 Certificates Issued 554 Training Hours



12 Businesses Served19 Consultation Hours

#### For More Information













Department of Food Science Extension Programs cals.cornell.edu/food-science/outreach-extension

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