Small Scale Food Processing Plant
- Supports teaching, research and extension for Food Science
- 4 Food Science student interns assist staff of 3
- Produces Cornell Big Red, A.D. White Cheddar and Cornell Greek Yogurt
- Works with industry on product development projects (DSM, IFN, Chr. Hansen, Old Chatham)
- Partners with artisanal cheese and yogurt makers (Keelys, Crossmans Farm & Creamery, Tumino Cheese Company)
- Supports the Cornell Cheese Club and student product development teams
High Pressure Processing Validation Center

- 20-30 food products tested per month
- New process utilizes pressure instead of heat to preserve foods
- Supporting the industry with development of fresher, safe and nutritious foods
- Biosafety Laboratory to perform FDA/USDA product safety validations
Extension and Outreach
State-of-the-art small scale model of a full-sized dairy industry plant. Designed to be transparent for teaching purposes.

Milk comes from Cornell’s Veterinary Teaching Dairy Farm

Dairy Plant processes, on average, 1.5 million pounds of raw milk every year (175,000 gallons)

13,000 gallons go to research

146,000 gallons of fluid milk and cream

20,000+ gallons of ice cream are produced

Products: Fluid milk, Ice Cream, Yogurt, Cheese, Juice (including processing and packaging Cornell Orchards apple cider)

Distribution: 80% of products sold to Cornell Dining facilities, Statler Hotel, Cornell Store and Mandible Café in Mann Library.

20% sold to fraternity and sorority houses, individual departments, the Dairy Bar, caterers
Sensory and Consumer Product Testing Services

Since the early 1990s Cornell’s Sensory Evaluation Group has served a variety of companies, from Fortune 500 to small businesses, by helping develop and improve their product offering through consumer and sensory testing.

Whether you are looking to develop a new product or improve upon the existing one, we can help.

Cornell Sensory Evaluation Center offers a variety of customized sensory and consumer research services to commercial entities:

- Consumer Acceptability and Preference Testing (CLTs)
- Discrimination Testing (Triangle, 2-AFC, etc.)
- Qualitative Research (Focus Groups, IDIs)
- Sensory Training Workshops

Cornell University
Department of Food Science
Sensory Evaluation Center
“...any person...any study.”

Phone: 607-255-3463
Web: http://blogs.cornell.edu/sensoryevaluationcenter
E-mail: ap262@cornell.edu
Cornell Craft Beverage Institute (CCBI)
Cornell Food Venture Center (CFVC)
Cornell Institute for Food Systems Industry Partnership Program (CIFIS-IPP)
Dairy Foods Extension
Food Microbiology & High Pressure Processing
HACCP Training for Food Processors
Institute for Food Safety at Cornell University (IFS@CU)
New York Sea Grant (NYSG)
Produce Safety Alliance (PSA)

Hours of Training Delivered, 2018

<table>
<thead>
<tr>
<th>Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6,232</td>
<td>Cornell Craft Beverage Institute</td>
</tr>
<tr>
<td>8,624</td>
<td>Cornell Food Venture Center</td>
</tr>
<tr>
<td>14,640</td>
<td>Dairy Foods Extension</td>
</tr>
<tr>
<td>3,536</td>
<td>HACCP Training</td>
</tr>
<tr>
<td>1,600</td>
<td>Institute for Food Safety at Cornell University</td>
</tr>
<tr>
<td>480</td>
<td>New York Sea Grant</td>
</tr>
<tr>
<td>25,457</td>
<td>Produce Safety Alliance</td>
</tr>
<tr>
<td>60,569</td>
<td>Total Hours</td>
</tr>
</tbody>
</table>

Events & Trainings, 2018

- CCBI: 46
- CFVC: 28
- Dairy Foods Extension: 15
- HACCP Training: 12
- IFS@CU: 3
- NYSG: 9
- PSA: 149

Total Events: 262
The Institute for Food Safety at Cornell University (IFS@CU) supports the production of safe foods that increase the economic viability and sustainability of the food industry in New York and beyond. 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.

- GMPs Part 117 Online Course
  - 732 Participants

- FD152 Pilot Course
  - 39 Participants
The Produce Safety Alliance (PSA), established in 2010, is a collaboration between Cornell University, FDA, and USDA to prepare produce growers to meet the regulatory requirements included in the FDA's FSMA Produce Safety Rule (PSR). Through the development of novel educational materials and training approaches, the PSA also provides technical assistance to growers and trainers.

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

| 1,359 Grower Training Courses Offered | 77 Train-The-Trainer Courses Offered |
| 31,174 Participants                  | 2,479 Participants                  |
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.

- **Courses Offered:** 46
- **Training Hours:** 14,640
- **Participants:** 838

Cornell Dairy staff, in collaboration with Dairy Foods Extension, instruct participants in Unit Operations in the new Cornell Dairy Plant.
Cornell Food Venture Center (CFVC) provides comprehensive assistance to new and established food entrepreneurs to enhance food safety, satisfy regulatory compliance and promote economic development. Services include scheduled process and process review validation for processed foods and meat products, laboratory services for product safety and stability, reduced oxygen environment/vacuum packing hazard analysis and validation, heat penetration studies, food classification letters, and access to the fruit and vegetable processing pilot plant.

5 Better Process Control Schools
81 Participants

2,143 Validations for Value-Added Food Products
FOOD MICROBIOLOGY & High Pressure Processing

Cornell's Food Microbiology Laboratory specializes in evaluating the microbial safety of fruit and vegetable processed foods and beverages. In addition to analytical services, the team provides training and assistance to the food and beverage industries as well as state and federal inspectors. 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.

- 128 Product Evaluations
- 96 Safety Validations Issued

The Food Microbiology Laboratory and the HPP Validation Center not only conduct cutting-edge research, but also provide technical services for the food and beverage industries.
WINE & Cider

The Wine & Cider extension program (part of CCB) provides resources to help winemakers and cider makers with important decisions from fruit sourcing and fermentation techniques to quality assurance and regulatory compliance. Cornell staff provide research, tools, and extension support to transfer research-based innovations and technologies that benefit growers, producers, and consumers.

Research Aide Pam Raes prepares a plate to look for remaining yeast and bacteria in a recently bottled wine. This helps a winery or cidery know that a product is safe to sell without fear of popping corks or shattered glass from re-fermentation.

In addition to training and workshops, extension services also include the NYS Wine Analytical Laboratory, which offers chemical, microbiological, and sensory analyses of juice, wine, and distillates for quality assurance, troubleshooting, and regulatory compliance.

1,762 Samples Analyzed from Craft Beverage Businesses

2,500 Samples Analyzed from Cornell Research & Extension Groups
In 2018, Extension Associate Kaylyn Kirkpatrick joined Cornell as the brewing expert. The Brewing Extension Lab supports the local hop industry by offering hops quality analysis testing, which ensures acceptable brewing values.

The Brewing & Distilled Spirits extension program, part of Cornell Craft Beverage Institute (CCBI), supports craft producers through quality control programs and also helps to promote New York breweries. The lab and pilot facilities provide for product evaluation and pilot testing on industrial-scale equipment to improve processing, product composition and quality.

The Cornell Vinification & Brewing Technology Laboratory is a pilot plant dedicated to research and teaching in wine and brewing sciences. Craft beverage services include laboratory analyses, regulatory guidance and troubleshooting specific to brewing and distillation, hop and malt production, and alternative beverage industries.
New York Sea Grant (NYSG), a cooperative program of Cornell University and the State University of New York (SUNY), is one of 33 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.

New York Sea Grant Seafood Specialist works with the seafood industry to promote safe, sustainable production of high quality seafood.

Online Seafood HACCP Course
1,501 Participants

3 In-Person Seafood HACCP Courses
60 Participants
HACCP TRAINING for Food Processors

Principles of Hazard Analysis and Critical Control Points (HACCP) is a systematic approach to identify, assess and control the risk of hazards from a food production process. HACCP is a preventive strategy to ensure safe processing of food, especially meats, seafood, dairy and juice. FDA and USDA have issued regulations specific to juice, seafood and meat processing in response to concerns about foodborne illness outbreaks and securing the US food supply. Trainings are designed to provide industry and inspectors with the knowledge they need to develop or evaluate HACCP plans and practices.

Food Science Professor Dr. Randy Worobo mentors a group during a breakout session as part of Juice HACCP training offered at Cornell University.

9 Courses Offered

281 Participants
Industry Partnership Program

An exciting public-private partnership that expands and enhances engagement of Cornell University with industry scientists, engineers and business leaders at companies throughout the food system.

Program revised in 2019 with the guidance of the AC subcommittee
<table>
<thead>
<tr>
<th>Category</th>
<th>Offerings</th>
<th>Members</th>
<th>Affiliates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Technical Symposium</strong></td>
<td>Annual Technical Symposium and Networking Summit (May 8)</td>
<td></td>
<td>Two attendees; $500/additional attendee</td>
</tr>
<tr>
<td></td>
<td>Technical consultation meeting, up to four faculty hours, during day 2 of the Symposium (May 9)</td>
<td>Yes</td>
<td>------</td>
</tr>
<tr>
<td><strong>Consultation and Services</strong></td>
<td>Consultation meeting, a maximum of four faculty hours, in Ithaca or Geneva, NY, or via Zoom (based on faculty availability)</td>
<td>Yes</td>
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</tr>
<tr>
<td></td>
<td>Opportunity to invite a faculty member to visit and/or give a talk at your facility</td>
<td>Yes</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>Priority access to Department processing facilities and services</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Research</strong></td>
<td>Quarterly communication of government/foundation/non-profit current research</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Early notification for auxiliary research opportunities</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Opportunity to submit a proposal for a 8-12 month project to be completed, if accepted, by a Professional Master student (literature or research based)</td>
<td>One proposal per membership year</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>Access to Graduate Research Seminar Series (7-weeks/semester)</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td></td>
<td>Opportunity to submit a proposal for a 10-week project to be completed, if accepted, by an undergraduate student</td>
<td>One proposal per membership year</td>
<td>------</td>
</tr>
<tr>
<td><strong>Student Engagement</strong></td>
<td>Invitation to highlight your company at the Food Systems Career Fair held in Stocking Hall (August/September 2019)</td>
<td>Premium location and two tables</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Assistance with scheduling and advertising an Informational Session with students</td>
<td>Priority scheduling access</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Space and scheduling assistance for on-campus interviews in Stocking Hall</td>
<td>Fall and Spring</td>
<td>Spring Only</td>
</tr>
<tr>
<td><strong>Recognition</strong></td>
<td>Company logo on CIFS-IPP website, within Stocking Hall and on associated public materials</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Company Spotlight on CIFS-IPP website</td>
<td>Yes</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>Invitation to Cornell reception at IFT</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
2019 Program Details and Key Dates

Membership Composition:
– Members pay $25,000/year
– Affiliates pay $10,000/year

Infrastructure:
– Industry Liaison, reporting to Department Chair
– Faculty Advisory Committee
– External Leadership Committee – Past, Present, Incoming Chair from Full Members

Annual Technical Symposium & Networking Summit:
– Wednesday and Thursday, May 8-9, 2019
– Join us for the “Sustainable Food Technologies Symposium”

Food Systems Career Fair:
– Tuesday, September 3, 2019
– 200+ students from Food Science and other majors who are interested in pursuing internships and careers in food and related industries
Objective
Share knowledge of cutting-edge research and emerging technologies currently being pursued by faculty and their graduate students, as well as more intimate interaction with faculty members and CIFS-IPP peers.

Details

- **Day 1: Technical Symposium (Members and Affiliates)**
  - Research and development presentations by faculty
  - Members to present and engage faculty on challenges shared across the food science industry
  - Members and Affiliates network with each other to discuss combining efforts on larger-scale collaborations
  - Posters by graduate students
  - Networking reception and dinner

- **Day 2: Technical Consultation Meetings (Members only)**
  - Break-out meetings for members to discuss potential specific research with faculty per individual interests (up to four faculty hours)
For further information please contact:

Janette Robbins
Interim Industry Liaison Officer
607-255-7637
jmr65@cornell.edu
AC Subcommittees
1. Student Advisory Council Mentoring and Advising Sub-Committee:

*Faculty Member liaison:* Carmen Moraru  
*AC Chair:* Peter Salmon

**Goal:** We look to this sub-committee to provide mentoring and advising support. This could include a variety of options:

- Provide guidance to our product development teams
- Career direction and guidance
2. Industrial Relationships Sub-Committee: Faculty Member liaison: Janette Robbins
AC Chair: Nick Dokoozlian

Goal: This sub-committee’s focus would be three-fold:

Help faculty attract an additional $500,000 industry research funding.

Help us attract five additional companies to the Industrial Partnership Program. We’ve found that engaged companies have funded research and hired our students.

Our international students are often unable to obtain internships, which you’ve indicated is one of the primary employment pathways. Please help us develop five international internship opportunities.
2. Industrial Relationships Sub-Committee:
Faculty Member liaison: Janette Robbins
AC Chair: Nick Dokoozlian

New focus for 2019:

Establishing a model/strategy to work with companies in a very integrated and successful way.

The main elements of a strategy for integrating Cornell food science resources with companies’ needs, utilizing the professional and physical assets available, include:

- Research projects and initiatives of mutual interest, complementing and/or matching available funding to maximize the scope of the projects
- Enhanced student participation in internships and research projects; opportunities for possible job placement
- Increased industry utilization of Cornell core facilities, centers and services: We have many excellent resources that we do not advertise at the moment and our goal is to make them available, attractive and economically viable.
- Develop a mechanism for companies to provide continuous feedback to the department.
3. Philanthropy Sub-Committee:
Faculty Member liaison: Olga Padilla-Zakour
AC Chair: Chuck Marble

Goal: to develop strategies to name spaces in Stocking Hall based on departmental priorities.

http://stockinghall.cals.cornell.edu/pages/naming-opportunities#underground-research-kitchen
This subcommittee was dissolved due to a slow progress from the department in NYC activities

4. NY City Engagements Sub-Committee:
Faculty Member liaison: Bruno Xavier
AC Chair: Kristin Alongi

Goal: Cornell FVC office in NY City provides an amazing opportunity for Food Science, with the outreach that will be provided by the Center of Excellence in Food and Agriculture. This sub-committee could first focus on:

• Propose a strategy to leverage Cornell food science resources with industry initiatives and resources already established in NYC – focused on supporting new companies, and growing established ones. What is the best way to engage a larger number of companies to have the most impact?
Thank You!