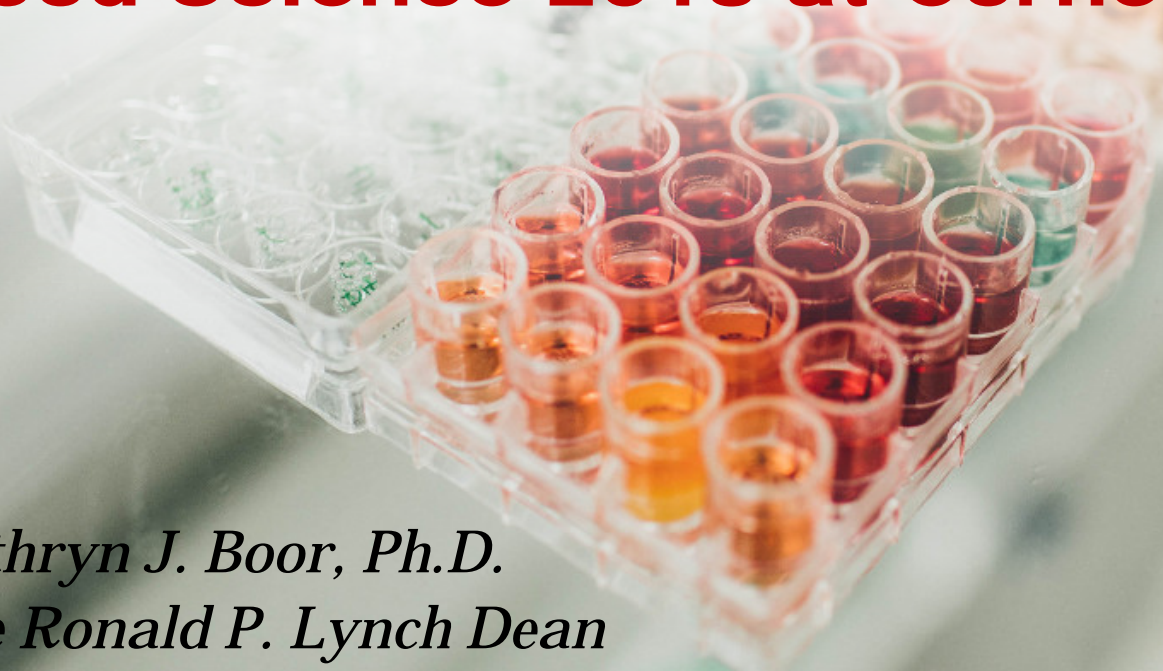


Cornell CALS

Not Your Mother's Ag School: Food Science 2018 at Cornell University



*Kathryn J. Boor, Ph.D.
The Ronald P. Lynch Dean
College of Agriculture and Life Sciences
Cornell University*

Overview

- Introduction to Cornell University
 - Cornell's College of Agriculture and Life Sciences (CALS)
- Food Science programming at Cornell
 - Tales from the deep freeze

Cornell University

Founded in 1865
with a revolutionary
commitment from
Ezra Cornell to create
a university open to
all, “where any person
can find instruction in
any study.”



Ithaca is in New York ... State



Cornell University At a Glance

Private
University
**With a Public
Mission**

Ranked No. 14 in
the world



1,605
Faculty

8,283
Staff

Cornell is the federal
Land Grant University of
New York State



7,155
Total degrees
conferred

Cornell University Structure

Colleges & Schools

College of Agriculture and Life Sciences | College of Architecture, Art and Planning | College of Arts and Sciences | Cornell SC Johnson College of Business: The Hotel School • Dyson School of Applied Economics and Management • Johnson Graduate School of Management | College of Engineering | College of Human Ecology | School of Industrial and Labor Relations (ILR) | Faculty of Computing and Information Science | Cornell Tech | Cornell Law School | College of Veterinary Medicine | Graduate School | Weill Cornell Medicine (NYC) | Weill Cornell Medicine (Qatar)

14,907

Undergraduate
students

5,605

Graduate Students

2,504


Professional

23,016

Total

College of Agriculture and Life Sciences (CALS)

- What does it mean to be a college of agriculture in 2018?
 - Rapidly, but unevenly, increasing global population
 - Increasing weather volatility
 - Water shortages in key food-growing regions around the globe
 - Rapidly shifting consumer food preferences
 - Trade barriers/Tariffs/Political instability
- Bill Gates says: “If we are serious about ending extreme hunger and poverty around the world, we must be serious about transforming agriculture.”
- Enabling agricultural transformation:
 - Biological Systems
 - Food and Nutrition Security
 - Climate Change
 - Socio-Economic Resilience
 - Media and Communication Technologies
 - Big Data

A photograph showing two people from the waist down, standing in a raised garden bed. They are both reaching into the bed to harvest leafy green vegetables, likely spinach. The person on the left is wearing a light blue denim jacket, and the person on the right is wearing a black and white plaid shirt. The garden bed is filled with rows of healthy green plants. The background is slightly blurred, showing more of the garden and some wooden structures.

CALS Mission: Life. Changing.

We connect the life, agricultural, environmental and social sciences to provide world-class education, spark unexpected discoveries and inspire pioneering solutions.

More specifically, to ensure human well-being while protecting and restoring the environment, CALS aims to transform food systems in socially, financially and ecologically sustainable ways.

CALS by the Numbers

Second
Largest
College at Cornell

\$194M

Research Expenditures

23
Majors

32
Minors

3,690
Undergraduate
students



980
Graduate students

350
Faculty

930
Staff

440
Non-professorial academics

Data as of 1/22/18

Academic Schools & Departments

11

In CALS

Animal Science | Biological and Environmental Engineering | Biological
Statistics and Computational Biology | Communication | Development
Sociology | Entomology | Food Science | Landscape Architecture |
Microbiology | Natural Resources | School of Integrative Plant Science

6

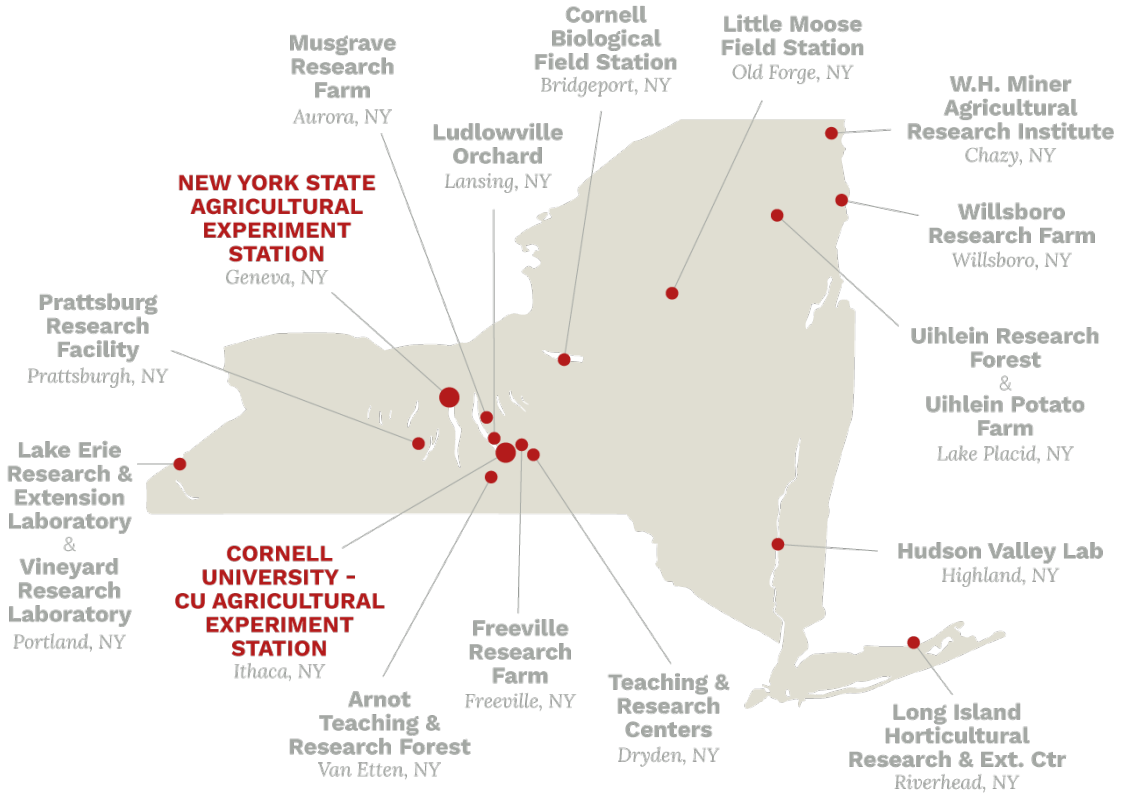
Shared by
CALS and
other colleges

Charles H. Dyson School of Applied Economics and Management –
Cornell SC Johnson College of Business
Earth and Atmospheric Sciences – College of Engineering
Ecology and Evolutionary Biology – College of Arts & Sciences
Molecular Biology and Genetics – College of Arts & Sciences
Neurobiology and Behavior – College of Arts & Sciences
Nutritional Sciences – College of Human Ecology

Field Stations, Research Farms & Forests

CALS' presence throughout NYS includes:

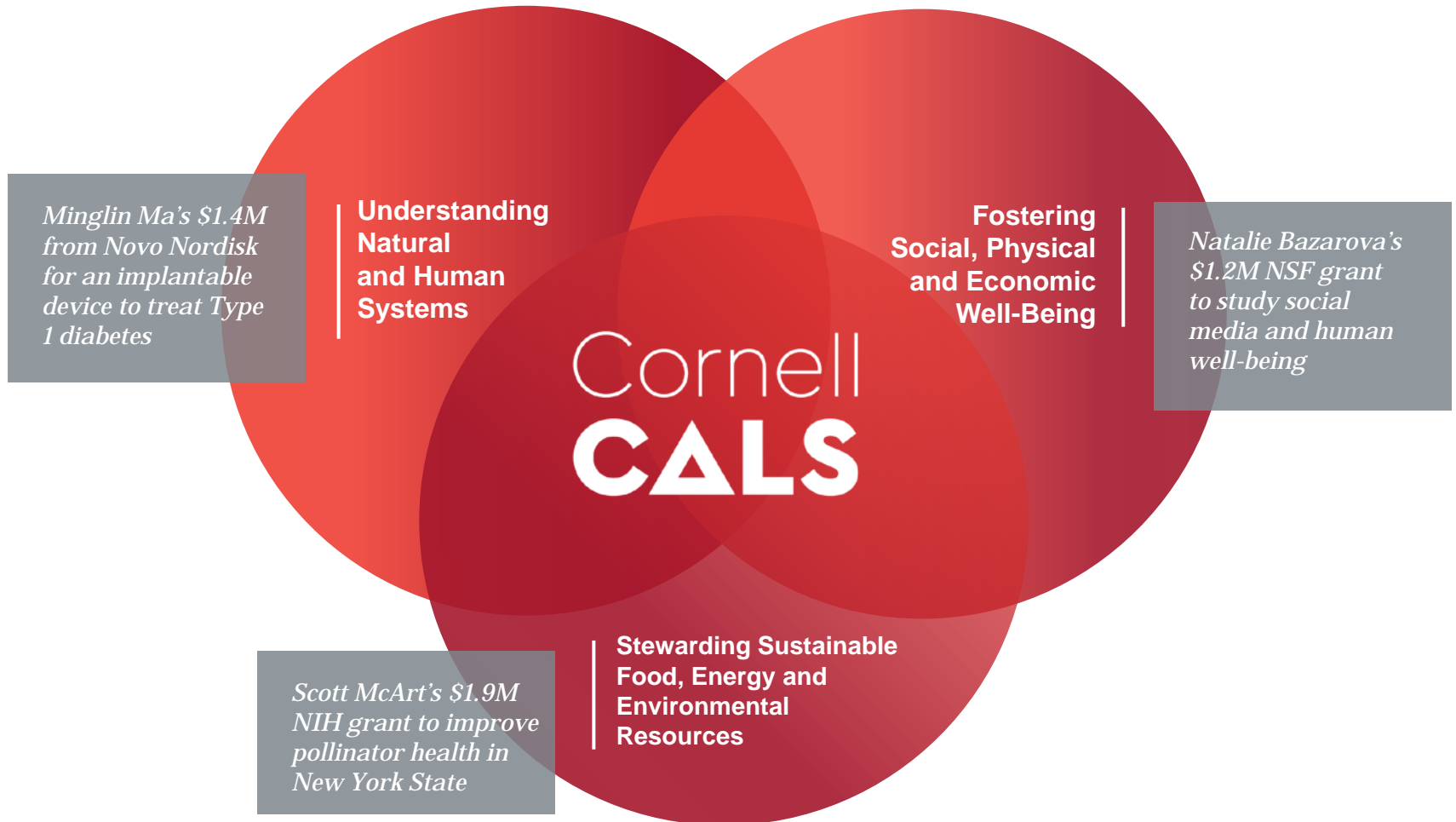
- 10,314 acres outside Tompkins County
- 2,075 acres within Tompkins County
- 5,022 acres on Ithaca's main campus (includes Cornell Botanic Gardens, Lab of Ornithology, Campus Farms)



CALS Global Reach



CALS Programmatic Foci



Department of Food Science



Ithaca



Geneva

Cornell Food Science, Back Then ...



Cornell Food Science in 1979



Food Science: 1994



Cornell Food Science: Now



Our Food Science Department

- 23 Professorial Faculty
- 2 Sr. Extension Associates
- 7 Extension Associates
- 3 Lecturers
- 16 Post Docs
- 92 Support personnel
- **125 Undergraduates in FS + 21 in Enology**
- **92 Graduate Students**

Our Curriculum:

- IFT Approved
- Depth in chemistry, biology and math
- Breadth in social sciences, humanities and communication
- Depth and breadth in food science disciplines: Food chemistry, food microbiology, food engineering/processing and sensory science

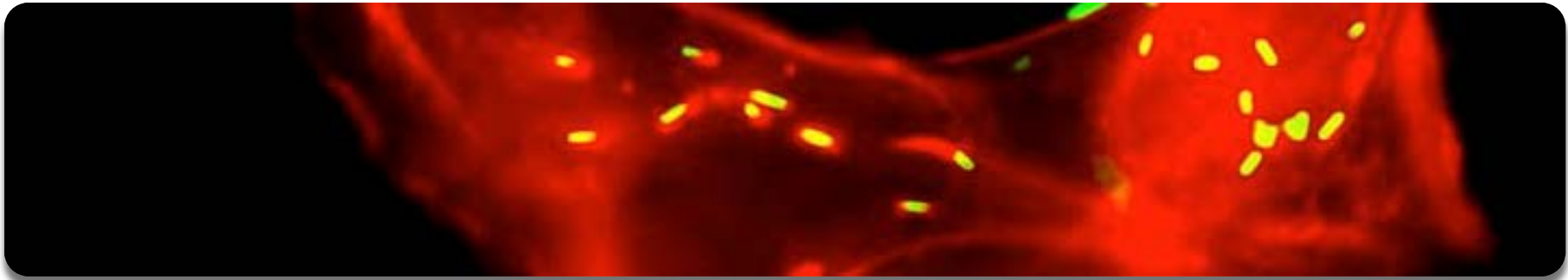
Cornell Food Science: Our Mission



To enhance the safety, quality, and abundance of the global food supply by preparing students for leadership roles, advancing research on foods and beverages, and translating and communicating discoveries for the benefit of all people

Cornell Food Science: Research & Technology

- Food microbiology/food safety
- Food chemistry
- Food engineering/processing
- Foods for health
- Sensory science
- Enology
- Sustainable food systems



Teaching Winery



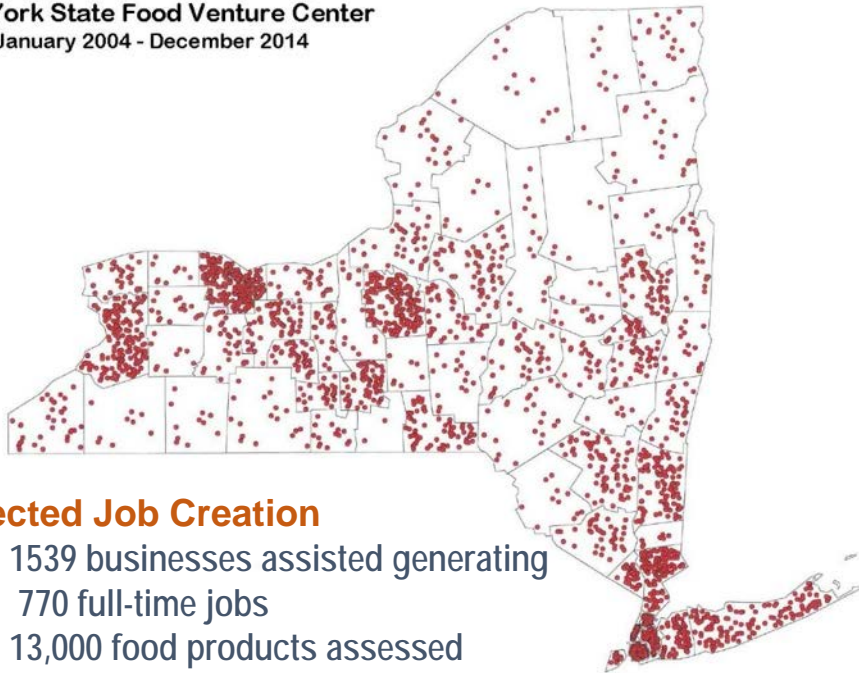
Process Validation



Our Hiperbaric 55 high-pressure food processor provides commercial-scale process validation of foodborne pathogen destruction and shelf life extension.

Cornell Food Science: Food Entrepreneurship

New York State Businesses
Assisted with a New Product by the
New York State Food Venture Center
January 2004 - December 2014



Projected Job Creation

- 1539 businesses assisted generating
- 770 full-time jobs
- 13,000 food products assessed



Tomorrow's Food Scientists ...

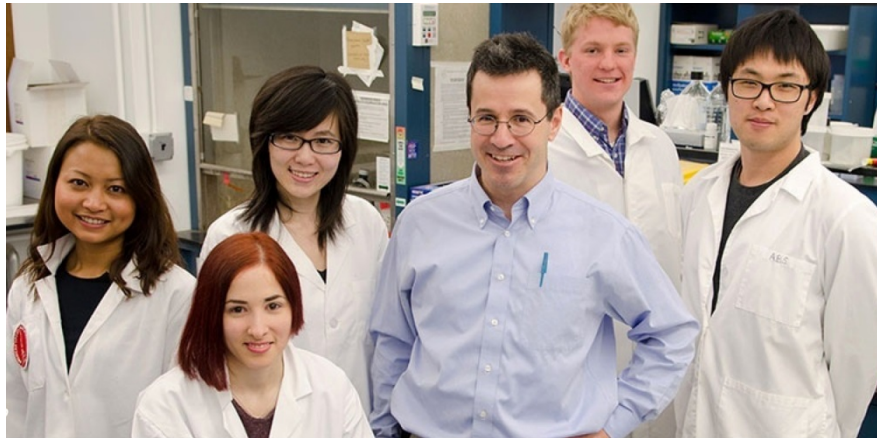


The IFTSA/Mars Product Development Team won 1st place in the 2017 competition for their product Jack'd Jerky, a jackfruit-based vegan jerky treat.

The 2018 IFTSA/Mars Product Development Team placed in the finals for the 10th consecutive year for their product FroMo, a vegan, gluten-free frozen dessert.

Cornell Food Science: Food Safety

- National Good Agricultural Practices (GAPs) Program & Produce Safety Alliance (PSA)
- Fruit, Vegetable & Juice Processing and Safety – Juice HACCP Certification, Better Process Control Certification
- Cornell Food Safety Laboratory



New York State Integrated Food Safety Center of Excellence

- **Partnership with:**
 - New York State Department of Health
 - *Laboratory, Epidemiology, and Environmental Health*
- Provides a regional approach to food safety by establishing a dynamic, academic-government “Learning Collaborative” with regional states
- Focus on 3 main areas of food safety:
 - Surveillance
 - Lab detection
 - Training



Food Safety Laboratory Alumni





Protecting Public Health: On the Front Lines

The Science of Ice Cream







Thank you!