Food and agriculture systems are in a period of profound change that is driven by four factors:

1. **Improved scientific understanding**, especially regarding the genetic basis for biological traits, how this basis interacts with the environment to produce crop attributes, how genomes can be edited and how this understanding can be used to improve and manage crops.

2. **A changing climate** that leads to greater weather variability and related stress to crops and extended ranges, altered phenologies and increased abundance of pests.

3. **Dynamic consumer preferences** to which food suppliers are increasingly responsive. Consumers now want more nutritious in-season foods, locally produced in a sustainable manner and delivered with minimal processing.

4. **Increased demand for food worldwide** coupled with a fixed resource base for producing food.
Discoveries and innovations generated by food and agricultural research can drive economic development and job growth if properly translated to industry. Climate change and demand for more nutritious and safer foods, as well as for more environmentally sustainable crop production systems, are challenges that require cross-disciplinary approaches to improve development, management and use of fruit, vegetable and specialty fiber and oil crops (henceforth referred to collectively as specialty crops).

Integrated management systems that provide nutritious and safe food, while reducing environmental impacts, must be devised and delivered to stakeholders. In addition, continued training of future scientists and the broader agricultural workforce is paramount to maximize the ability to address these new challenges and opportunities.

Cornell University’s Cornell AgriTech at the New York State Agricultural Experiment Station is uniquely positioned to address these issues and opportunities through science-based, solutions-oriented food and agricultural research and education that will pioneer new technologies, develop advanced plant varieties and help New York farmers and food businesses expand and generate profits.

Given this context, programmatic direction for Cornell AgriTech must be prioritized to build on existing strengths and take advantage of new opportunities.

This strategic plan provides a framework to leverage a rich history and position Cornell AgriTech as Cornell’s focal point for mission-focused research and education covering the entire plant-based food systems enterprise, from breeding new cultivars to sustainable crop production systems, including sustainable crop protection approaches, coupled with food products development and safety that is responsive to consumer needs.
Cornell AgriTech is a preeminent center for food and agricultural research and education that is an integral part of Cornell University’s College of Agriculture and Life Sciences (CALS).

Cornell AgriTech is considered "a one-stop shop" by stakeholders due to the continuum of research— from breeding, physiology, protection and production of these crops to the development of value-added products—and the delivery of research-based information to clients through extension programs.

The faculty and staff base, geographical location, field and laboratory facilities and rich history of Cornell AgriTech make it a logical choice as a center for specialty crop innovation in New York.

Several collaborating partners and mission-based programs located at the Geneva campus provide resources and expertise that contribute to the strength of Cornell AgriTech. Geneva-based USDA scientists conduct research on fruit and vegetable crops, collaborate with Cornell AgriTech faculty, and provide access to national germplasm collections.

Cornell AgriTech is recognized globally for development of new vegetable and fruit crop cultivars, innovative plant production systems, research and extension in plant protection, systems for food and beverage processing, fermentation technologies and strategies for detecting and mitigating microbial food contaminants. Opportunities for enhancing food and agricultural businesses across New York state abound, and Cornell AgriTech is strategically positioned to play a lead role.
1. Breeding and release of high-quality fruit, vegetable and fiber and oil crop cultivars that are particularly suited to the New York state region and provide business advantages to New York growers. New cultivars and their value-added products foster partnerships with agricultural and food industry stakeholders in New York, the U.S. and internationally.

2. Support for and partnerships with the value-added plant-based food and beverage product sector, enhancing the prosperity of farm and food businesses.

3. Development of integrated cropping system technologies, including crop protection, to maximize production of fruit, vegetable and other specialty crops while preserving resources and fostering a healthy environment.

CASE FOR SUPPORT

Food and agriculture in New York adds over $96 billion annually to the state economy.

Major impacts of Cornell AgriTech to New York stakeholders will continue to be realized through the following:
The quality of Cornell AgriTech research, teaching, training and the quality of Cornell AgriTech research, teaching, training and outreach mirrors the strengths of its relationships with communities of scholars, government and industry leaders, entrepreneurs, business owners and organizations that support the food and agricultural sector in New York state and beyond.

Successful implementation of the research, extension and education priorities identified in this strategic plan will have far-reaching effects on New York’s economy and will strengthen the outreach of both CALS and Cornell University.

The strategic plan described herein is specific to the unique resources, location and opportunities afforded by the Cornell AgriTech campus and its faculty, staff and students. This plan emphasizes activities in Geneva, but this should not be construed as diminution of the value of our many interactions with colleagues throughout Cornell.
There are three overriding issues that must be addressed for Cornell AgriTech to be a center of excellence for specialty crop innovation and a driver of economic growth in New York:

1. **Faculty Renewal:**

   Over the last decade, nearly a quarter of the faculty at Cornell AgriTech have retired or entered into phased retirement, and many more faculty will retire over the next 5 to 10 years. New faculty and academic staff must be hired to lead the research and educational programs that the food and agricultural industries depend on. Faculty renewal at Cornell AgriTech must be directed towards the three impact areas identified above and should reflect the interdisciplinary, systems-oriented work that is fostered at Cornell AgriTech and which is increasingly needed to address the challenges identified in this plan.
2. **Facility Management:**

Older, antiquated facilities must be renovated to support the research and education envisioned at Cornell AgriTech. A facility master plan should be developed that supports interdisciplinary research and extension programs and integration of entrepreneurship and economic development with the research and extension programs at Cornell AgriTech.

3. **Financial Support:**

Faculty and facility renewal are needed at a time when public support for food and agricultural research is in decline. This necessitates development of alternative funding models that include strengthening of public–private partnerships, greater emphasis on educating the public on the importance of agricultural research and extension, and prioritization of resource use so that the college can meet its mission most effectively in the agricultural and food arenas.
OUR MISSION

We create future food and agriculture systems by working across disciplines to explore questions from all sides, and translate our discoveries into practical solutions to help growers and businesses thrive.

OUR PURPOSE

We improve the health of the people, environment and economy of New York state and beyond through innovative food and agricultural science.

OUR VISION

Leading science-based innovation in specialty crops and the foods, beverages and products derived from them.
GOALS & OBJECTIVES

A. Research
B. Education & Outreach
C. Personnel & Organizational Structure
D. Facilities
E. Marketing & Communications
F. Leadership Model
A. RESEARCH

Goal: Create the knowledge and technology needed for sustainable plant-based food and specialty crop systems for the 21st century.

**Objective 1:**
Identify the genetic basis for traits important for sustainable crop production, use the corresponding information for the development of novel, improved cultivars, and transfer these products to growers, processors and consumers.

**Objective 2:**
Identify the biological foundations and process chemistry underpinning the development and safe production of healthy food products that meet the needs of society; extend this knowledge to stakeholders using efficient methods.

**Objective 3:**
Understand the genetic and ecological underpinnings of plant interactions with abiotic (nutrients, water, soil structure) and biotic (beneficial microbes/symbionts, diseases, arthropods, weed competitors) environments as a basis for sustainable crop management, and translate these discoveries to growers, service providers, regulators and consumers.

**Objective 4:**
Understand attributes of sustainable and safe production methods, including crop protection, agroecosystem biodiversity and resource management, incorporating precision technology to maximize production and profitability and then disseminating this knowledge to stakeholders.
B. EDUCATION & OUTREACH

Translating research and technological advancements and providing information about breeding, production, protection, value-added products and food safety to stakeholders is critical to fostering economic prosperity and sustainable agricultural practices, especially in light of climate change, environmental challenges and concerns about food safety and security.

Cornell AgriTech— including NYS IPM, the Institute for Food Safety, the Pilot Plant/Food Venture Center and field research facilities— provides an ideal setting for creating a center of excellence for extension and education focused on specialty crops and their products.

Educating K-12 students, undergraduate and graduate students and the public on issues facing agriculture systems and food safety is essential for developing a vital workforce in education, research, industry and government and for increasing public awareness and knowledge.
Goal 1: Provide stakeholders and the food system workforce with the knowledge they need to excel. This will be done by translating and disseminating research knowledge, integrating new technological advancements and regulatory information relevant to specialty crops and food products, thereby improving production practices, stimulating entrepreneurial activity and strengthening workforce development.

**Objective 1:**

Deliver responsive translational extension programming to extension educators, specialty crop producers and agricultural and food systems professionals using innovative and impactful methods.

**Objective 2:**

Offer specialty and customized training options that meet the needs of the specialty crops and food systems industries to further enhance their enterprise, including certificate and non-thesis graduate degree programs.
Goal 2: Educate the agriculture and food systems workforce, and provide experiential learning opportunities to undergraduate and graduate students while participating in enriching the science education of local K–12 students.

**Objective 1:**
Provide graduate students a distinctively integrated and interdisciplinary educational experience to prepare them for careers and leadership roles in academia, agribusiness, governmental research/policy and nonprofit organizations.

**Objective 2:**
Enrich the educational curricula of the affiliated undergraduate majors and graduate fields through participation of faculty in delivery of course offerings on the Ithaca campus or through distance learning systems.

**Objective 3:**
Enhance the preparation of undergraduate students for careers in the agricultural sciences through residential experiential summer research and extension internships, with a particular emphasis on expanding the participation of underrepresented groups in scientific research.

**Objective 4:**
Work cooperatively with local educators to enrich the science, technology, engineering and mathematics (STEM) education of K–12 students.
C. PERSONNEL & ORGANIZATIONAL STRUCTURE

Goal: Ensure the long-term viability of Cornell AgriTech operations and program function through effective leadership and personnel management and a widely recognized identity and value.

Objective 1:
Identify and recruit the faculty and staff needed to realize our vision and deliver our mission.

Objective 2:
Provide outstanding facilities, equipment and expertise for conducting farm-based research.

Objective 3:
Facilitate the integration and coordination of Cornell University Agricultural Experiment Station strategic planning and operations with that of CALS, Cornell AgriTech and the academic units that are homes to Geneva-based faculty.
D. FACILITIES

To remain a world-class research, extension and education center, Cornell AgriTech requires modern facilities and infrastructure while managing operations and utilities expenses to meet budgetary constraints and campus greenhouse gas emissions targets.

Goal: Provide the facilities and equipment required to realize our vision and deliver our mission.

Objective 1:
Develop modern communications facilities and affiliated building infrastructure in support of in-house training/teaching and distance learning, including undergraduate education and Master of Professional Studies and certificate training.

Objective 2:
Facilitate the integration and coordination of Cornell University Agricultural Experiment Station strategic planning and operations with that of CALS, Cornell AgriTech and the academic units that are homes to Geneva-based faculty.
Objective 3:

Develop facilities and equipment needed for integrating field and laboratory research, including but not limited to the following:

- Modern automated phenotyping facility in support of breeding and genetics.

- Infrastructure in support of precision agriculture for specialty crops, including investment in new farm equipment, sensors and processors, extension of wireless communications to field farms for remote sensing equipment and data collection and rainout shelters for drought simulation.

- Modern agriculture/food systems research laboratories with flexible space for molecular and microbiological research.
E. MARKETING & COMMUNICATIONS

We live in a time when many people—including our stakeholders, policymakers and the general public—obtain information and build opinions based on brief social media posts and videos. It is critical that people associate the work we do with a high-quality brand and that we communicate the goals and impact of the work we do with concise and targeted messages.

Goal: Develop and implement an effective marketing and communications strategy that will raise awareness and understanding of the impact of our work.

Objective 1:

Develop and articulate a brand for Cornell AgriTech that will be widely understood by diverse clients.

Objective 2:

Develop and implement a communications approach that will reach broad audiences with positive impact on interactions with the community, stakeholders, peers and policymakers.
F. LEADERSHIP MODEL

Cornell AgriTech is an integral part of CALS and its academic units. At the same time, programs and resources in Geneva are distinctive from, and complementary to, those in Ithaca.

Most significant is that Geneva has a transdisciplinary focus that emphasizes integration across academic disciplines to foster agriculture and food systems innovation that contributes to sustainability and economic development.

A Geneva leadership structure must guide strategic decisions with a focus on the mission of Cornell AgriTech while facilitating collaboration and integration with the college and academic units.

Towards this end, strategic decisions at Cornell AgriTech will be made by an Executive Committee in consultation and agreement with college and academic unit leadership. The Executive Committee will be led by the Cornell AgriTech director and will consist of four members, one from each of the academic disciplines that are homes to Cornell AgriTech faculty and academic staff.

A main responsibility of the Executive Committee will be to lead and facilitate the implementation of the Cornell AgriTech strategic plan. Executive Committee members will also serve as the Cornell AgriTech representative for their academic discipline (SIPS: Horticulture, SIPS: Plant Pathology and Plant Microbe Biology, Entomology, and Food Science). Executive Committee members will collaborate to ensure coordination and efficiencies within and across program areas at Cornell AgriTech.
The Cornell AgriTech director will meet regularly with the Executive Committee to discuss issues and make tactical and strategic decisions. The Cornell AgriTech director will also meet regularly with the SIPS director, SIPS section leaders and department chairs in Entomology and Food Science.

**Executive Committee members will also serve as the Cornell AgriTech representative for their academic discipline.** The Cornell AgriTech director will meet regularly with the Executive Committee to discuss issues and make tactical and strategic decisions. The Cornell AgriTech director will also meet regularly with the SIPS director, SIPS section leaders and department chairs in Entomology and Food Science.

With input from faculty in each academic discipline and in consultation with department, SIPS and section chairs, the Cornell AgriTech director will appoint Executive Committee members. The dean of CALS will appoint the director of Cornell AgriTech, following consultation with faculty and leadership of the academic units represented at Cornell AgriTech.

The director of Cornell AgriTech leads the faculty, staff and students of Cornell AgriTech in delivering scientifically based innovation and management practices to advance the specialty crop industries of New York, the region and the world.

In this leadership position, the director will guide investment of resources allocated to the Geneva-based facility to fulfill its mission. The director will also play a key role in articulating the critical and distinctive role that Cornell AgriTech plays in CALS' and Cornell University’s mission to ensure food and nutrition security, human health and sustainability.