Strategic Plan 2013–2017

Collaborating to Achieve a Sustainable World
The Atkinson Center’s First Years

In our first five years, the Atkinson Center has helped to build a more sustainable world by developing new knowledge and technologies in energy, the environment, and economic development.

We are the only academic institution that unites these three pillars of sustainability in one center. By drawing on the broad and deep capacities at Cornell—both a private Ivy League and a state land-grant university—we have spurred innovative thinking and nurtured integrated, multidisciplinary solutions to complex problems facing people and our planet. Our grant programs and other activities have pioneered new approaches, techniques, and technologies so that today’s seeds of knowledge can grow into tomorrow’s solutions.

Here are a few promising ideas from the 60-plus research teams we’ve backed in our first five years:

- Improved methods for locking carbon in soils to help farmers mitigate and adapt to climate change
- Creative incentives to improve medical care for HIV-infected women and children in the poorest areas of sub-Saharan Africa
- Crop pollination using native bees
- Promoting sustainable agriculture as a market-friendly alternative to poaching protected wildlife
- A blueprint for building public-sector green jobs in a changing climate
- A way to harvest energy from small-scale turbines on building surfaces
- A strategy for converting algae into a sustainable fuel source and high-value enzymes
- Architectural design tools for sustainable buildings

The Atkinson Center believes that a thriving, sustainable future is attainable. The path forward requires technological, scientific, social, and political breakthroughs to provide adequate energy, a resilient environment, and robust economic development in the United States and abroad.

For more information: www.acsf.cornell.edu
What Is Needed Now

A SENSE OF URGENCY
The Cornell community has the unparalleled potential—and obligation—to be a global leader in shaping a sustainable future. Our planet and its people are faced with unprecedented challenges that can’t be addressed in isolation. Climate change is already affecting natural ecosystems, infrastructure, food security, and human health and well-being worldwide. At our current pace, 50 to 60 percent of the planet’s species could be extinct in 100 years. Use of clean energy is growing, but much more needs to be done to replace traditional fossil fuels. Social and economic issues—a growing population, urbanization, increased consumption, and persistent poverty and hunger—are also critical drivers. Today’s complex problems must be approached as parts of an interconnected and interdependent system of human endeavors and hopes. The time for action is now.

A NEW APPROACH
Technological breakthroughs and best practices alone cannot deliver a sustainable future. Collaboration with other organizations—community, private sector, government, nonprofit, and philanthropic—is essential to unleash our collective power for broader, more timely, and durable impact. We will engage with external partners that have common aspirations and complementary resources to identify real-world problems, apply the multidisciplinary approaches needed to solve them, and mobilize the practical means to scale up. Together we can achieve the transformational changes that are so urgently needed.

CONSTANCY OF PURPOSE
Achieving practical solutions to difficult problems will take time and require constancy of purpose. Nevertheless, we live in a period of rapid change, so we must also be nimble enough to tackle critical new problems as they emerge. Our strong connections across Cornell give us the resources and agility to address challenges with a comprehensive, integrated approach, while the Center’s endowment provides a long view and a solid foundation for growth.
To date our formula has been simple: Give researchers from disparate disciplines a central place to convene around a compelling problem, provide the necessary support, and nurture the innovative thinking that emerges.

Our Faculty Fellows come from 76 different departments and all of Cornell’s colleges and schools, tapping Cornell’s unique strengths in sustainability:

- Research excellence in agriculture, computation, economics, energy, engineering, and life and social sciences
- A long history of public engagement, providing practical problem solving and translation from research into practice
- A global network of engaged alumni

A critical step toward implementing this strategic plan is to articulate focus areas that match Cornell’s strengths with existing and emerging world needs. These initial focus areas will be our starting points for two new priorities. One: We will develop robust and comprehensive collaborations with external parties or individuals with similar aspirations and complementary strengths. Two: We will grow our signature programs that have been so successful in connecting faculty, generating innovative discoveries, and broadening the sustainability conversation.

OUR PLANNING PROCESS

We sought advice from more than 50 thought leaders and stakeholders:

- Cornell senior administration, deans, and development officers
- ACSF External Advisory Board, including business leaders, venture capitalists, and entrepreneurs
- Foundation and NGO leaders, including The Nature Conservancy, Environmental Defense Fund, Oxfam, and CARE
- Faculty Advisory Board, individual faculty, and faculty focus groups
THE WAY FORWARD
Emphasize activities in emergent focus areas.
Develop strategic external partnerships.
Strengthen existing multidisciplinary research programs.

CLIMATE CHANGE
An Overarching Challenge

The most recent scientific findings provide new evidence for human influence on the frequency and intensity of temperature extremes, heavy rainfall, drought, and coastal flooding exacerbated by rising sea levels. Sustainable development must work on parallel tracks to slow the pace of climate change, while also building the resilience of ecosystems, infrastructure, economies, and communities.
Beyond the Three Es

FOCUS AREAS

The Atkinson Center has built its reputation on integrating the “three Es”: energy, the environment, and economic development.

Our past program experience guides us as we move forward—now with new areas of strategic focus incorporating all three Es. These six focus areas are not set in stone; they will evolve in response to Cornell’s novel ideas and discoveries, world needs, and collaborator interests. Underlying all focus areas is the global imperative for vibrant societies, healthy ecosystems, climate change resilience and solutions, biodiversity, and sustainable use and conservation of resources.

SUSTAINABLE AGRICULTURE AND FOOD SYSTEMS

A major sustainability challenge for the 21st century is reconciling the food and energy needs of an expanding population with conservation and sustainable land management for long-term ecosystem services, economic growth, and human well-being. Poverty, inequality, malnutrition, and food insecurity are strongly linked. Sustainable agriculture and food systems promise to improve food security and human health, increase resilience to climate change, and protect environmental resources. More than 100 Faculty Fellows are engaged in all aspects of this globally important topic.

ENERGY TRANSITIONS

Countries around the world are already converting from fossil fuels to renewable energy, but we need to accelerate this transition and transform our energy infrastructure. While improvements to renewable energy technology are critical, these developments must be coupled with multidisciplinary research in grid integration, energy efficiency, new materials, societal adaptation, economic markets, and policy frameworks. ACSF connects faculty from every school and college, as well as the world-renowned Lab of Ornithology, to work on the overarching goal of environmentally low-impact energy. Given the pace of climate change projected for this century, the shift to carbon-neutral energy takes on ever more urgency.

ONE HEALTH

Human health, animal health, and ecosystem health are inextricably linked. One Health research emphasizes the connections between these elements to promote, improve, and defend the health and well-being of all species. This focus area may involve collaboration among clinicians, natural scientists, and social scientists working in universities, health institutions, and environmental organizations. Cornell boasts a top-ranked vet college, medical school, and environmental sciences across several colleges. Project teams have demonstrated success in working together in innovative combinations to tackle the complex, interlinked issues of species health, sustainable populations, and ecosystem functioning.
**SUSTAINABLE COMMUNITIES**
Sustainable communities utilize cost-effective energy sources releasing minimal carbon, provide efficient buildings and transportation systems, build equitable and affordable housing, promote climate resilience, and establish clean water and sanitation systems. Sustainable communities also offer environmentally and economically sound food systems, recreational opportunities, and opportunities for civic engagement. The concept of community is central to sustainability. Twenty ACSF seed projects in this area are an indicator of the strong commitment and depth of talent at Cornell already engaged.

**NEW MATERIALS**
Materials—both commodity substances such as cement, copper, and iron, and specialty substances such as magnets, semiconductors, and polymers—are a basis of technological advancement, and demand is growing as world population and wealth increase. Some of these materials are energy-intensive to produce, some are in short supply, and some are available in only a few places. Inexpensive, recyclable or reusable, multifunctional substitutes and new materials with outstanding performance and capabilities are greatly needed. Cornell has more than 100 faculty and several centers in the materials research area.

**COMPUTATIONAL SUSTAINABILITY**
Massive computation and data-intensive methods are necessary to address complex problems as we seek to optimize outcomes across many constituencies within the three Es. Cornell’s Institute for Computational Sustainability and resources and capabilities spread across all colleges, as well as new applied efforts taking shape at Cornell NYC Tech, are being brought to bear on sustainability challenges. Harnessing the power of computational methods to balance environmental, economic, and societal needs is a new wave of exploration that holds great promise.
The Priority Initiatives
2013–2017

PRIORITY INITIATIVE ONE

Build strong, comprehensive, strategic collaborations with external organizations that have common aspirations and complementary capabilities in one or more of the Center’s new focus areas.

Rationale
Combining the unique assets of Cornell with those of external organizations, including business and industry, government, nonprofits, and foundations, will significantly increase our collective power to address major challenges in sustainability, resulting in measurable impacts.

Outcome
Develop two or more high-impact strategic alliances with external collaborators. Jointly define goals, create programs, and fund teams to produce scalable solutions to complex problems. These programs will be cross-disciplinary, with multiple points of connection to different Cornell strengths and colleges; multidimensional, including both research and application; feature a multiyear portfolio of projects; and be backed by diverse sources of support.

Tasks
• Build on currently existing early collaborations with NGOs and individual philanthropists.
• Develop and expand a target list of potential collaborators. Hold exploratory conversations that find and define areas of common interest.
• Initiate collaborations that generate and apply new ideas and discoveries to significant, practical problems.
• Provide ongoing support to joint teams to develop robust partnerships and help projects achieve their maximum potential.
• Engage with the faculty and administrators of Cornell NYC Tech to cultivate sustainability work across campuses.
• Raise awareness and get the word out through traditional media, new and social media, and targeted briefings for media, government, and foundations.
• Develop ACSF infrastructure, staffing, and resources required to support implementation of this strategic plan.

PRINCIPLES FOR STRATEGIC COLLABORATIONS

Leadership: We embrace comprehensive, integrated thinking and action to advance practical solutions.

Cooperation: We are committed to working with partners at all stages, from concept development to implementation.

Integrity: We earn credibility by delivering on our commitments.

Independence: Our work is conducted with transparency and without constraints from our sponsors or supporters.

Objectivity: We are guided by open inquiry, deep curiosity, and empirical research.

Durability: We start with the end in mind and are committed to the long campaign.
PRIORITY INITIATIVE TWO

Strengthen existing programs and create new programs to stimulate more multidisciplinary, cross-campus collaboration and research on sustainability topics.

Rationale
Feedback from our internal and external stakeholders was overwhelmingly enthusiastic about our current programs, such as the Academic Venture Fund (AVF) and Rapid Response Fund (RRF). We seek to grow these successful programs and create new initiatives so that Cornell can have greater local and global impact by generating ideas and discoveries that fuel progress toward a sustainable world.

Outcome
Expanding these programs and launching new endeavors will harness the passion, focus the energy, and increase the commitment of Cornell faculty on critical issues in sustainability. Broadening Cornell’s sense of community and purpose will draw creative faculty to the university, promote interdisciplinary cross-fertilization of ideas, and build ties among disciplines to help Cornell retain top researchers. Building the base of committed teams with broad expertise in sustainability fields will make Cornell even more attractive to outside collaborators.

Tasks
• Diversify fundraising and investment initiatives aimed at Cornell alumni and friends, foundations, and corporations.
• Build on our existing relationships with Cornell’s colleges and independent units to magnify cross-campus engagement.
• Expand our capacity to communicate with both policy and lay audiences, infusing public and political debates over sustainability issues with empirical results.
• Develop ACSF infrastructure, staffing, and resources required to support implementation of this strategic plan.
2017: Measuring Our Success

SPECIFIC MILESTONES

- Expand the successful Academic Venture Fund to $1 million annually, an increase of approximately 25 percent.
- Maintain a high return-on-investment: Every one dollar ACSF spends will return at least seven in new external grants, investments, or other financial support.
- Design, fund, and manage two new fellowship programs to train the next generation of sustainability thought and action leaders.
- Develop two or more enduring strategic collaborations with external partners for interdisciplinary research and practical application.
- Launch two significant new communications programs designed to reach high-influence individuals and institutions and raise awareness of the ACSF brand and Cornell’s strengths in sustainability.
- Develop and meet fundraising and investment goals that will diversify the Center’s financial foundation and support important growth.

GENERAL OUTCOMES

- One or more high-profile innovations associated with ACSF and a partner will significantly, measurably improve sustainability and well-being for humans and the planet’s flora and fauna.
- Initial teams funded by ACSF will generate sustainable and significant increases in investment from third-party sources—investors, foundations, philanthropists, and agencies.
- Initial alliances will grow, so that what began as two organizations working together attracts others and becomes a thematic focus with a strong set of key partners.
- We will build our capacity to communicate effectively and creatively the impacts of ACSF work, engaging the public, policymakers, and the private sector.
- ACSF Faculty Fellows will increasingly inform and shape public policy to create a more sustainable world.
- ACSF, in collaboration with Cornell’s colleges, will help attract, engage, and retain the talent necessary to make breakthroughs in sustainability science and scholarship.
- Cornell will be recognized as one of the top three universities in the world in sustainability and as a leader in linking sustainability thought and action.
Into the Future

OUR VISION
To create a world in which people can meet their needs and pursue their dreams without compromising the ability of future generations to do the same.

OUR MISSION
To discover and implement sustainable solutions to world needs for reliable energy, a resilient environment, and robust economic development.

OUR APPROACH

Connect: We bring together Cornell faculty, staff, and students to address complex issues in sustainability. We connect to external organizations and individuals to maximize impact.

Accelerate: We stimulate research to speed game-changing innovations from discovery to local and global implementation.

Evaluate: We continually improve processes and outcomes by measuring results and articulating new understandings.

Communicate: By sharing our results and ideas broadly, we increase the visibility of cutting-edge advances in sustainability and multiply the impact of our work.

WHAT’S NEW

Co-create: We will engage with external partners to identify real-world problems, the multidisciplinary approaches needed to solve them, and the practical means to scale them up.

Focus: While continuing to stimulate innovations in sustainability across the full spectrum of our world-class university, we will enhance our impact by emphasizing multidisciplinary focus areas to tackle chronic and emerging problems.