

FOCUSING ON THE FUTURE: The Four Academic Priorities of the College of Agriculture and Life Sciences

By Susan A. Henry, the Ronald P. Lynch Dean of Agriculture and Life Sciences at Cornell University

Cornell University, one of the great universities in the world today, occupies a unique position as a private, Ivy League, land-grant institution. As we embark on our second century of extension, teaching, and research efforts within the university, the College of Agriculture and Life Sciences (CALS) proudly proclaims its essential role in maintaining Cornell's long tradition of excellence.

Cornell has a well-deserved reputation for supporting the changing needs of human society, not only in New York State but throughout the world, and particularly in developing countries. We in CALS are proud of our college's flagship role in making Cornell a global land-grant university.

At the same time, as New York State's land-grant college of agriculture, we are committed to excellence in research, extension, and teaching in science and scholarship that benefits society in our state and the nation as a whole.

Beginning in academic year 2002–2003, with leadership from then Senior Associate Dean Bill Fry, a broadly representative committee of CALS faculty and senior staff defined a new mission for the college, reiterating our commitment to teaching, research, and extension. We articulated a vision of our role in developing leaders to address the global challenges of the 21st century.

Since the publication of our mission and vision statements in 2003 (page 3), the CALS Advisory Council, department chairs, administrative leadership team, other CALS faculty leaders, and I have engaged in conversations about connecting our mission and vision to the areas of academic strength and excellence for which our college is known. In doing this, we carefully

considered how our academic priorities connect our college to the priorities of the university as a whole.

We identified four academic areas that are fluid, overlapping, and interdependent. These four areas of academic priority are:

- Land-Grant Mission;
- Applied Social Sciences;
- Environmental Sciences;
- New Life Sciences.

Very few of our departments, students, or faculty members would see themselves as confined to just one of these areas. Most participate in two or more.

Each of the priorities is also connected to broader themes at Cornell, enabling us to see ourselves in an interdisciplinary context, both supporting and being sustained by the university as a whole.

The interactive nature of these priorities is illustrated in the figure (page 2), shown as overlapping circles with the land-grant mission at the center. Our core undergraduate curriculum is designed to help our students become leaders in society in each of the four areas and in the land-grant overlap. In each area, we also conduct basic and applied research and promote the integration of applied research and extension for the betterment of society. Because our students participate in all levels of experiential learning, our teaching programs are likewise linked to research and extension.

Land-Grant Mission



I am very proud of the CALS tradition as standard-bearer for the land-grant mission at Cornell. We have a firm commitment to research and extension that benefits the citizens, communities, and economic well-being of the state of New York, the nation, and the world. The land-grant ideal has been the foundation of our academic mission since the inception of Cornell as the land-grant university of the state of New York. Through discussions led by panels convened by the Board of Trustees, we are delighted that the land-grant mission has come to be regarded as a primary focus of commitment by the entire university.

Our historical roots in Cornell's land-grant mission are in agriculture and land stewardship, but agriculture has always been connected with and dependent on progress in the life and environmental sciences. This includes advances in our understanding of the pests and diseases that affect our crops and animals, the role that agriculture plays in the environment, and the benefits of promoting biodiversity in plants and animals.

Our land-grant mission is also linked to economics—the economics of farming and businesses related to agriculture and food production—and to economic development for communities in the state of New York and the nation, as well as for developing economies throughout the world.

The land-grant mission also relates to the well-being of our urban, rural, and suburban communities. Many economic, environmental, and social issues transcend the rural-urban interface. The ability of CALS to integrate diverse disciplines enables us to fulfill our land-grant mission for New York. In this respect, agriculture, environment, and the life sciences are linked to applied social sciences like education, communication, development sociology, and others that help frame public policy.

Applied Social Sciences



Social scientists in CALS are motivated by the desire to address important social needs and public issues and to make a positive difference in people's lives. Our applied social sciences are built on a firm foundation of disciplinary strength and contribute to Cornell's university-wide priority of promoting excellence in the social sciences. The applied nature of our approach to social sciences and connections to our land-grant mission distinguish CALS' programs within the spectrum of social sciences at Cornell. We are significant players

and strong collaborators in the university's Institute for Social Sciences.

The applied social sciences also provide means by which to translate our work in technical areas—including the life sciences and environmental sciences—to enhance the public good and communicate the results of our endeavors to the community at large. These applications include increasing public awareness of the role of technology and science in society, influencing the way we develop public and social policy, stimulating economic development, and using technological developments for the benefit of society.

CALS' involvement in the applied social sciences is most evident through our programs in applied economics, communication, education, and development sociology. For example, CALS is unique in housing Cornell's accredited Undergraduate Business Program—the largest single-department major in the college—in the Department of Applied Economics and Management.

In another example, faculty in the Department of Communication collaborated with the faculty of Computing and Information Science (CIS) to establish an interdisciplinary, intercollege major in information science.

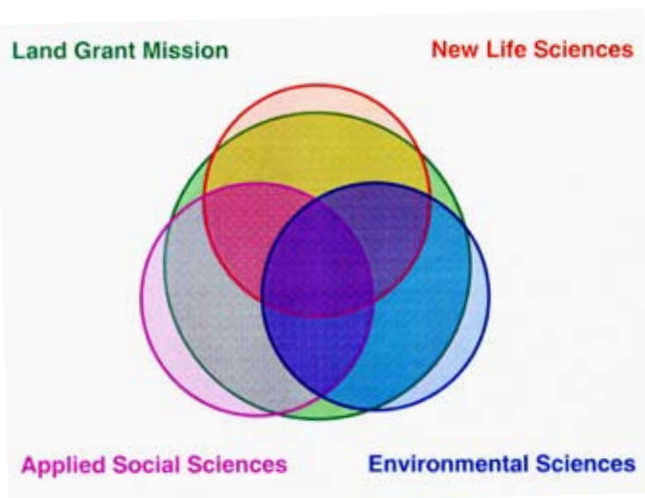
Our involvement in the applied social sciences is also evident in the research, extension, and educational programs we conduct in areas with an effect on public policy in a number of disciplines, including those related to natural resources, life sciences, and agriculture.

Environmental Sciences



A third priority for the college is the environment. Environmental sciences are essential to the land-grant mission and focus on some of the most important issues facing society in our time. Dean Liberty Hyde Bailey's founding vision for the New York State College of Agriculture in 1904 included land stewardship and the role of agriculture in the rural environment. Agriculture is one of the human activities most profoundly influencing the environment. The environmental sciences are intricately connected to the life sciences, and, as mentioned above, also link to the applied social sciences in the areas of public policy, landscape architecture, and human dimensions.

There has been a significant movement across campus to elevate the environmental sciences to a university-wide priority. Our college's strengths in ecology, biodiversity, atmospheric science, earth systems, and environmental engineering as well as natural resource management and biological resource conservation, including soil, water, sustainable agriculture, and nutrient and waste management, have enabled us to play a leading role in a number of university-wide initiatives.



CALS' programs span emerging interdisciplinary areas such as biobased industries; energy and the environment; agriculture and the environment; detection and remediation of pathogens, toxins, and pollutants; chemical and behavioral ecology; biogeochemistry; and biodiversity. An example of our leadership in environmental sciences at Cornell is the establishment of an interdepartmental undergraduate major in the science of natural and environmental systems. In addition, CALS has partnered with the College of Engineering on an intercollege major in environmental engineering.

New Life Sciences



Our fourth priority, the new life sciences, constitutes the largest university-wide initiative and seeks to enhance and support interdisciplinary research, education, and collaboration among biologists, physical scientists, engineers, and computational scientists. The College of Agriculture and Life Sciences has taken a leading role in this initiative from the beginning, providing faculty leadership and a major share of new faculty hires.

Our college offers unique strengths to this campus-wide effort in areas such as the plant sciences, biodiversity, microbiology, biostatistics and computational biology, biological engineering, bionanotechnology, animal science, evolutionary biology, ecology, and many applications critical to agriculture and the environment. CALS faculty play many roles in this multidisciplinary initiative, including conducting basic and applied research on topics such as improving the food supply, food safety, nutrition, health, the environment, business, and the economy. We bring a unique balance to the new life sciences by emphasizing very basic studies in genetics, developmental biology, neuroscience, molecular and cell biology, and more applied biology. We also explore the ethical, legal, and social implications emanating from new life science technologies.

As this partial list of topics makes clear, research, teaching, and extension related to the life sciences include many areas linked to environmental sciences and applied social sciences. Moreover, our work in the life sciences has unique applications that enhance the entire university initiative and ensure that connections are made to Cornell's land-grant mission.

As we continue to strengthen our leadership role in these four academic priority areas, we achieve our vision "to be the preeminent college for research, teaching, and extension of agriculture and the life sciences, developing leaders to address the global challenges of the 21st century."

We continue to refine and build momentum in our strategic priorities by engaging members of the CALS community in communication with the college leadership through annual

CALS Vision

To be the preeminent college for research, teaching, and extension of agriculture and the life sciences, developing leaders to address the global challenges of the 21st century.

CALS Mission

As a college uniquely situated in a land-grant, Ivy League university, we are committed to research, teaching, and extension that makes an important difference in the lives of our stakeholders in New York State, the nation, and the world by:

- Providing a world-class education for our students
- Encouraging lifelong learning through extension education
- Advancing a productive and sustainable agriculture
- Understanding the unity and the diversity of life through discovery in the life sciences
- Promoting a wise stewardship of the environment
- Supporting a safe, secure food supply
- Fostering economic vitality
- Facilitating individual and community health and well-being
- Pursuing scholarship that addresses social issues

CALS Core Values

In CALS, we embrace a unique blend of values directed at achieving the highest standards of scholarship and the highest levels of commitment to society. We value:

- Respect, honesty, and integrity
- Diversity in all its dimensions (ideas, people, places)
- Inquisitiveness
- Free and open exchange of ideas
- Responsible risk-taking and innovation
- Commitment to scientific rigor, academic excellence, and entrepreneurship
- Dedication to applying knowledge to public needs
- Engagement of partners and stakeholders in scholarship

faculty reporting, departmental strategic planning, and the ongoing work of the CALS Advisory Council. We constantly seek information from faculty, alumni, and stakeholders about how we can best fulfill our land-grant mission to society; how the four priority areas can best be strengthened to support that effort; and how we can best realize our vision in the 21st century.

—Susan A. Henry, PhD,
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