



College of Agricultural, Consumer and Environmental Sciences

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

**Strategic Plan, Version 2.0
2006-2010**

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Executive Summary

This strategic plan represents the culmination of several planning processes engaged in by the College of ACES, its subsidiaries, and its stakeholders in recent years. The College's strategic plan was developed within the framework of the campus's strategic plan for 2006-2010. The College's strategies are also presented in the context of the ACES' Statement of Strategic Intent, which was adopted in 2005. To the extent possible, the College's plan reflects how it will contribute to the goals and strategies of the University of Illinois at Urbana-Champaign to reinforce and build comprehensive excellence. At the same time and in concert with the campus strategic initiatives, the College will pursue important strategic directions that will position it for long-term preeminence on a global scale, with the essential corollary that the College must balance its commitment to provide exceptional value and relevance to address local needs.

The College of ACES has responsibility for University of Illinois Extension and the Illinois Agricultural Experiment Station. These subsidiaries provide a statewide presence for the University of Illinois and the College. University of Illinois Extension is physically present in all 102 counties in the state and its virtual presence on the internet reaches tens of millions of people around the world. Extension is a valuable asset for engagement by the University of Illinois with audiences that are crucial to the institution's learning, discovery, engagement, and economic development missions across many dimensions. University of Illinois Extension must be an integral part of the strategic marketing plan of the campus.

The agenda for the College over the next five years is ambitious and broad, but a few distinctive priorities stand out in the College's strategic plan.

- ▶ **Globalization:** Develop a sound global program base for those with a stake in the College of ACES to excel on a global stage, increasing study abroad, strengthening ACES Global Connect, and building ACES Academy for Global Engagement.
- ▶ **Leadership:** Educate and prepare students and stakeholders to lead, innovate, and create, with special attention to a college-wide leadership initiative.
- ▶ **Collaboration:** Align incentives and build capacity to undertake larger, more complex collaborative initiatives.
- ▶ **Knowledge and Decision:** Insist on competitive first class science, deliberately translated to transform lives, providing the means and tools for effective decision making.

Among the College's strategic directions, special emphasis will focus on making the University of Illinois at Urbana-Champaign the leader in promising interdisciplinary fields:

- ▶ Bioenergy and bioprocessing
- ▶ Healthy and nutritious food systems
- ▶ Sustainable rural and urban landscapes
- ▶ Resilient families and communities

University of Illinois Extension has also identified key priorities for its engagement mission.

- ▶ Entrepreneurship, both within the organization and among clientele.
- ▶ Community and economic development, with an emphasis on community leadership.
- ▶ Urban Extension, especially leveraging Extension's capabilities to reach audiences in the state's metropolitan communities and among changing populations.

In addition to these important priorities, the College of Agricultural, Consumer and Environmental Sciences will fully participate in the strategic initiatives of the campus.

Section I Overview

The University of Illinois began with a vision to provide higher education and to benefit Illinois's society as a whole. Signed into law by President Lincoln, the Morrill Act of 1862 established federal land grants intended to create institutions focused on advancing learning and improving the lives of citizens, initially by benefiting agriculture and mechanical arts. Chartered by the Illinois General Assembly in 1867, the Illinois Industrial University embraced this mission. As the institution moved into the twentieth century, visionary leaders at the University of Illinois conceived of a comprehensive university that would make world-class contributions to scholarship and society. Comprised today of three campuses, located in Chicago, Springfield, and Urbana-Champaign, the University of Illinois embraces the land-grant mission of comprehensive higher learning, research and creative scholarship, engagement and public service, and economic development. The University's first campus, established in the communities of Urbana and Champaign, is the flagship of the University of Illinois system.

The College of Agriculture was the first college established at the University of Illinois in 1868. In partnership with the United States Department of Agriculture, the Hatch Act of 1887 established the system of agricultural experiment stations at land-grant universities devoted to mission-oriented research, and the Smith-Lever Act of 1914 resulted in the Cooperative Extension System. University of Illinois Extension integrates campus faculty, local staff, and communities within an institutional system of outreach education, based on deliberate assessment of community needs and educational programs designed to address those needs. Good institutions excel in teaching and scholarship, but great institutions also change things, suggesting that engagement is critical.¹

In 1995 the College of Agriculture and the School of Human Resources and Family Studies were reorganized into the College of Agricultural, Consumer and Environmental Sciences (ACES). Today, the ACES is the home for seven academic departments and an interdisciplinary graduate division. The Illinois Agricultural Experiment Station and University of Illinois Extension are integral subsidiaries of the College. ACES reflects the breadth of the College mission, and in this first decade of the twenty-first century the College possesses the unique combination of disciplines, organizational infrastructure, and relationships necessary to address complex issues, to seize opportunities that cut across bounds of disciplines and mission functions and to create a brilliant future in agricultural, consumer and environmental sciences.

The Meaning of Agriculture, Consumer and Environment in Today's ACES²

Agriculture: The College was founded primarily to educate students and to develop applied research that supported innovation in Illinois's agriculture and secondarily on home economics education and applied research to improve the well-being of rural families. Agriculture no longer narrowly refers to crop and livestock production on Illinois's farms. It extends to natural resource management, environmental quality, and sustainability of food, energy, and renewable materials production in the state, nation, and world. It encompasses food processing, retailing, service, and trade. The scope of agriculture, its role in the global economy, and its relationship to other sectors in the state are changing dramatically as the agricultural sector expands and the structure of farming changes to meet varied demands for food and agricultural products

¹ *Internal Culture Task Force*, Report to the College of ACES, 2004

² *Identity Task Force*, Report to the College of ACES, 2004

throughout the world, and consumers' concerns about food quality. Agriculture now includes such diverse constituencies as the consumer overseas, the local farmer's market, the multi-national food service chain, and the soil and water resource base.

Consumer: From the original mission of home economics, the consumer dimension of ACES has evolved to improving the quality of life, physical and economic well-being, and successful development of culturally diverse children, families, and communities. Consumer efforts encompass providing a safe, nutritious, and affordable food supply to enhance human health. How social and physical environments affect human health, diet, and food consumption choices are another dimension of the consumer effort. Finally, consumer concerns incorporate the social and physical effects from the commercial marketing and industry environments involved in processing foods, bioactive food components, and value-added agricultural products.

Environment: Environment encompasses diverse concerns of people and communities. It includes what affects human health – water, air, and soil quality, soil productivity, and water quantity. It also incorporates aesthetics – the way plant, soil and water systems affect sight, smell, and temperature. Enhanced biology or the active and passive green spaces in urban environments as well as the biodiversity of plants and animals are part of its scope. By attending to these broad environmental factors the College enhances the human environment in rural and in urban systems.

The College of ACES uniquely combines a mix of disciplines that incorporate the full food and bio-products chain from biotechnology, production, and the environment, to consumption. College programs have expanded and evolved so that agricultural, consumer, and environmental relevance are apparent in every unit. We have a competitive advantage if we capitalize on the integration of our inherent multi-disciplinary mix. ACES is well positioned to lead in consumer issues of household and community behaviors for: consumption of food and natural resources; and the social and physical environments in which consumption takes place. We are also well positioned to meet national funding opportunities that target environmental implications of agriculture; communities through local level participation, leadership and contextual issues in agricultural production and environmental management; and family, child, and community health and well-being.

The Strategy Context for the College of ACES

At this stage, it is important to reflect on ACES' current position, to articulate the vision and goals for the future, and to establish a process for planning how to accomplish those goals over the next five years.

More than ever, the College of ACES has a critical role in the University of Illinois as the keeper of the land-grant mission, while the College

- Fulfills numerous mandates to the University for education, research, and outreach,
- Adapts to the evolving nature of the land-grant mission,
- Orients its efforts intrinsically to economic development, and
- Leads the modern notion of engagement and its role for the campus.

ACES' Strategic intent is "Global Preeminence and Local Relevance," meaning

- The College of ACES works for all of Illinois, including downstate Illinois and the Chicago metropolitan area, and

- ACES will be recognized on the national and global stages for its contributions.

The College of ACES is structured with an inherent interdisciplinary nature, which includes

- A continuum of basic and applied social, physical, and biological sciences,
- Integration around themes related to agriculture, consumer, and environment, and
- Relationships, formal and informal, with other campus units, e.g. Veterinary Medicine, Applied Life Studies, Education, Social Work, Business, Engineering, and Liberal Arts and Sciences.

ACES is differentiated from its external peers and competitors, as well as other internal campus units, in key ways such as

- Being part of a comprehensive university campus with most major disciplinary and professional programs on a single campus,
- Associating on the same campus with premier programs in engineering, life and physical sciences (e.g. biology, chemistry, and medicine), social sciences (e.g. psychology), and business (e.g. accounting).
- Providing the vital land-grant linkage for this campus to various communities and audiences in the broader society through extension and outreach, and
- Maintaining strong relationships with other intra-state educational institutions, e.g. Southern Illinois University, Western Illinois University, Illinois State University, and community colleges throughout the state.

ACES has demonstrated its organizational and disciplinary flexibility over time, since the College

- Reorganized a decade ago to create the College of Agricultural, Consumer and Environmental Sciences,
- Created a revised identity and structure for University of Illinois Extension to reach changing audiences,
- Developed innovations such as the Illinois Council on Food and Agricultural Research (C-FAR), Urban Extension, and the College's early foray in biotechnology, and
- Systematically reallocated faculty and staff resources under the basic principle that academic departments, University of Illinois Extension, and support units can retain sufficient resources from vacancies to rehire entry level personnel, to accomplish other priorities, or to meet financial management objectives.

Section II Strategic Intent: Mission, Vision, Principles, and Themes

ACES' Mission:³

ACES: Discovering, advancing, and integrating new knowledge to ensure nutritious and safe food, sustainable and innovative agriculture, strong families and communities, and environmentally sound use of natural resources to benefit the people of Illinois and the world.

ACES' Values:⁴

The College of ACES values the land-grant university mission of learning, discovery, and engagement. A commitment to this mission is woven into the fabric of all the College's activities.

ACES Values...

- A unique culture that is entrepreneurial, intellectually aggressive, collegial, open to new ideas, and oriented toward public and professional service.
- Responsibility for leadership on the campus in offering outreach to stakeholders, creatively funding new endeavors, and providing unique educational programs.
- An environment that is student-friendly and conducive to learning and intellectual growth.
- Relevant, high-quality, and affordable educational services that instill the qualities of leadership and self-sufficiency in continuing the learning process throughout life.
- A focus on priorities most relevant and important to food and agricultural systems, to the environment, and to communities, families, and individuals.
- An inclusive community that values and respects diversity in its faculty and staff and in programs reflecting societal needs.
- Integrity in all its endeavors.

ACES' Guiding Principles:

The College will create:

- An inclusive, diverse, and rewarding atmosphere for work and learning.
- An enabling environment for highly creative scholarly activity.

The College expects:

- Leading scholarship at all levels.
- The finest education for undergraduates, graduates, and other audiences.
- Active engagement with public audiences in its areas of scholarship.
- Active citizenship within the institution and professionally.

The College will reward:

- Contributions to the organization's health and growth.
- Innovation and superior performance in all aspects of its mission.

The College will encourage:

- Responsibility for individual and collective actions.
- Accountability for program outcomes and effects.

³ *Identity Task Force*, Report to the College of ACES, 2004

⁴ Modified from: *Making Change Work*, ACES' Strategic Plan, Version 1.0, 2000

ACES' Strategic Intent:

Our Strategic Intent in a phrase – “Global Preeminence and Local Relevance”

Two overarching goals—global preeminence in our scholarship and exceptional value to society, especially on issues relevant to Illinois—frame the strategic intent of the College of ACES.

ACES will be recognized as the global leader in learning, discovery, and engagement in the most promising areas of scholarship broadly relevant to agricultural, consumer, and environmental sciences. The College of ACES will be acknowledged in Illinois, across America, and around the world.....

- ▶ For preparing globally competitive undergraduate, graduate, and mid-career students
- ▶ For first-class discovery research that is purposefully translated into practice
- ▶ As the preferred source of knowledge that informs sound individual and collective decisions, transforms lives, and deepens cooperative relationships

Strategically, we in ACES intend

...to be recognized for preeminence in the global context.

...to be noted for educating students, alumni, and clients more than proportionately represented among the leaders and entrepreneurs who make a significant difference in their respective fields and occupations.

...to be known for our ability to draw on both internal and external resources to achieve an unusual degree of innovative collaboration.

...to be acknowledged as a first class science college that creates and applies knowledge to assist policymakers, managers, and others in making sound decisions.

ACES' Strategic Directions:

Consistent with our strategic intent of “Global Preeminence and Local Relevance,” ACES will invest its discretionary resources to achieve a desired leadership position and exceptional value in key areas of strategic opportunity, including:

- Bioscience innovation: processes, products, environment, and energy
- Progressive food and agricultural systems with sustainable landscapes
- Complementary advances in food, nutrition, and health
- Resilient families and communities
- Decision support for people, enterprises, and public policy

Programmatic directions will be based on four defining principles: (1) explicit value proposition for relevant audiences, (2) potential to establish a robust critical mass across a continuum from discovery scholarship to application, (3) opportunity to leverage campus-wide intellectual and other resources and, (4) realistic assessment of long-term funding potential. Each strategic direction will be subject to systematic program review to determine areas of future commitment and endeavor.

ACES will not sustain programs to address every research, educational and public service need and will deliberately judge the value of programs, establish priorities, and form relationships with appropriate peer institutions where necessary to fill the gaps.

ACES' Criteria for Success:

In the context of our strategic directions, ACES will strive for:

- Students and alumni who make a difference.
- Major scholarly and scientific impact on society.
- Leadership in significant decision processes and policy considerations.
- Meaningful contributions to robust economic development.
- Productive engagement with critical new audiences.
- Center stage in significant events.
- Competitive leadership among top peers.

Along that pathway, we will gauge our success by evidence of:

- Rising demand by top students for education in ACES.
- Rising demand by the best institutions and employers for our graduates.
- Rising demand from highly qualified prospects to join ACES' faculty and staff.
- More demand from influential people and organizations in Illinois, the nation, and the world for ACES' knowledge, expertise, and partnerships.
- Increasing demand from media and influential institutions to partner with ACES for program and informational content.
- More people willing to pay more for products and services from ACES.
- Growth in local communities, including Urbana-Champaign, through positive ACES' impacts.
- Top competitive rankings in commonly acknowledged benchmarks of excellence.

Section III College of ACES Planning Strategy

The planning strategy of College of Agricultural, Consumer and Environmental Sciences is organized to reflect the strategic plans of the University of Illinois and the Urbana-Champaign campus with respect to the four-part mission of the institution: research and scholarship, education, engagement, and economic development. The College's planning strategy maps aspects that are unique to the College of ACES and its subsidiaries as well as the intersections with the overall institution's plan for preeminence over the next five years. The College's plan follows a similar format with essentially the same components.

- Identification and analysis of Colleges which are peers in similar institutions for competitive benchmarking purposes.
- Evaluation of the strengths, weaknesses, opportunities, and threats facing the College of ACES.
- Analysis of distinctive competencies of the College that differentiate ACES from its peers and competitors.
- Strategic goals that the College of ACES will achieve in the next five years.

Competitive Benchmark Analysis

In keeping with the commitment of the College of Agricultural, Consumer and Environmental Sciences to advance the land-grant mission of the University of Illinois and for consistency with the stated intent of the campus to be a preeminent public research university, progress toward the College's strategic goals will be measured against a selected group of the premier public land-grant universities, which have comparable portfolios of mission functions and disciplinary programs. (See *Appendix A – Competitive Benchmark Analysis*)

For a comprehensive competitive analysis, different competitive parameters may be appropriate. The College's competition does not consist solely of other public land-grant or research universities, because we compete for a variety of resources within the university and among a broad array of knowledge and educational service providers, government agencies and institutions, and private firms in our areas of competence. However in this planning context, the College has selected peer land-grant institutions in each major mission area for benchmarking purposes.

Peers for Research / Scholarship Goals

Cornell University⁵

University of Wisconsin at Madison

University of California at Davis

Pennsylvania State University

Purdue University

These five land-grant universities are among the most highly regarded institutions nationally and internationally in research and scholarship related to agricultural and human sciences. For comparison to the College of ACES, two of the universities are in close proximity and three are more distant from Illinois.

⁵ Cornell is both a privately endowed university and the contract land-grant university in New York. The College of Agricultural and Life Sciences and the College of Human Ecology are publicly funded contract colleges.

Peers for Educational Goals

Cornell University
University of Wisconsin at Madison
University of California at Davis
Pennsylvania State University
Purdue University

These five institutions with land-grant educational missions all rank highly among the U.S. News and World Report Best Colleges. Not coincidentally, they are the same institutions selected by the College of ACES for competitive benchmarking in research and scholarship.

Peers for Engagement / Public Service Goals

University of Wisconsin at Madison
Purdue University
Texas A&M University
University of Florida
Michigan State University

The College of ACES is responsible for a large component of the campus's engagement portfolio, especially with respect to University of Illinois Extension, so the selection of peers for engagement and public service benchmarks mirrors that of the campus plan. All of these land-grant universities have significant engagement roles and similar responsibilities for extension, although the organizational structures differ. University of Illinois Extension also plans to include the Ohio State University and the University of California system in its peer evaluation group, because these extension systems were previously compared for the Chancellor's Commission on Extension in the late 1990s.

Peers for Economic Development Goals

University of Wisconsin at Madison
Purdue University
Texas A&M University
University of Florida
Michigan State University

Economic development goals in the College of ACES are closely but not exclusively connected to the engagement mission. Since this is also true for many of our peer institutions, the selection of benchmark peers for economic development goals is the same as for the engagement goals.

International Peers

Wageningen University
University of Guelph

The strategic intent of the College of ACES is "Global Preeminence and Local Relevance." In the future, global excellence will be measured against a relatively small number of institutions which set the standard around the world. While comparative data for benchmarking may be more difficult to obtain, the College has selected two additional international peers for future reference. Wageningen University in the Netherlands and the University of Guelph in Ontario, Canada, are both highly regarded research institutions in food and agriculture, human sciences, and related fields. Some of our U.S. peers also have notable international programs. Purdue and

Michigan State were both recognized with the Paul Simon Award for Campus Internationalization, and Cornell has an outstanding reputation for international programs.

Distinctive Assets

Conventional wisdom about this campus holds that unique combinations are present at UIUC. For example, we often point to top-flight engineering programs that complement the agricultural sciences, which few other land-grant universities can claim. Our stellar research enterprises are part of a university which has at its heart a commitment to take knowledge to the people, through applied research and extension education. Many highly-ranked research universities have no such organizational strengths. Among our positive competencies should be an acknowledgment of the unique opportunities for novel combinations and clusters of innovation.

Unlike a number of our peer institutions, the College of ACES includes the breadth of food and agriculture, human sciences, and natural resources in one College. On the other hand, some peers have significant elements of their campus life sciences or biochemistry programs in the same unit as the food and agricultural disciplines.

The College of ACES administers University of Illinois Extension and the Illinois Agricultural Experiment Station, entities established by statute in cooperation with federal, state, and local units of government. Other land-grant universities have used different models for separate or campus administration of these units, which may offer some advantages for wider integration of their functions across the whole institution. In contrast, the decentralized approach at Illinois and in similar institutions results in closer integration with the managing College and its departments.

The College of ACES was one of the first major land-grant colleges to reorganize substantially into fewer, larger and more integrated units, more than a decade ago. Thus, ACES has the advantage of prior experience with such consolidation.

The University of Illinois has a unique asset in its large-scale field laboratory contiguous to its campus, also known as the South Farms. Most other campuses have removed field laboratories at greater distances from their central campuses, so Illinois has the unique opportunity to undertake field scale experimentation and education in a manner that integrates the full landscape of the Champaign and Urbana communities and a wide range of possible disciplines.

Among the Midwestern land-grant universities, the University of Illinois and the College of ACES are situated in the most populous state, with the largest metropolitan area and a large industrial and service economy that is globally engaged. At the same time, Illinois is one of nation's premier agricultural states, not only in terms of crop and livestock production, but also with respect to its nationally and internationally critical agricultural input, food processing, transportation, financial, and other related industries, such as the expanding "green" industry.

Strategy Foundation

The College of Agricultural, Consumer and Environmental Sciences built its strategic analysis on several prior processes engaged in by the College, which substantially involved internal units and personnel as well as external stakeholders. They were adapted as necessary to coincide with the campus and university planning processes. In review, the primary processes and outcomes that served as the foundation for the current strategic planning process included the following:

- 2000—Making Change Work—ACES’ Strategic Plan, Version 1.0
 - http://www.aces.uiuc.edu/About_ACES/Strategic_Plan1_Q3.pdf
- 2003—ACES’ Strategy Retreat and Conference at Allerton Park
- 2003—Extension 2010 White Paper—Extension Partners
 - <http://www.extension.uiuc.edu/oeo/documents/Vision%202010%20White%20Paper.pdf>
- 2003—University of Illinois Extension—Strategic Agenda
 - <http://www.extension.uiuc.edu/oeo/documents/Final%20Web%20Version%20July%201%202003.doc>
- 2004—Task Force on ACES’ Identity
 - http://www.aces.uiuc.edu/About_ACES/TaskForces/IdentityTskFrceFinalRpt5.pdf
- 2004—Task Force on ACES’ Internal Culture
 - http://www.aces.uiuc.edu/About_ACES/TaskForces/Culture_Task_Force.pdf
- 2005—ACES Strategic Intent
 - http://www.aces.uiuc.edu/About_ACES/strategic_plan05.pdf

Strategic Analysis

The College’s analysis of its strengths, weaknesses, opportunities, and threats (SWOT) is presented in *Appendix C*. Following the model of the campus plan, these elements are identified across our four primary missions:

- Research / Scholarship
- Education
- Engagement / Service
- Economic Development

An environmental assessment was compiled from work done previously in preparing 2000 ACES Strategic Plan, *Making Change Work*, updated with analyses from the ACES strategic conference in 2003 and the College’s task force on identity in 2004. The key external trends and conditions in the environmental assessment are presented in *Appendix D*.

The College of Agricultural, Consumer and Environmental Sciences has a uniquely significant set of statutory mandates and obligations at federal, state, and local levels. The most significant ones, with citations to their statutory authorities, are indicated in *Appendix E*.

Strategic Initiatives

The College of ACES has articulated its strategies in the context of the ACES’ Statement of Strategic Intent. The College’s plan discusses its strategies to reinforce and build comprehensive excellence in Section IV, in terms of unique aspects of ACES’ strategic intent and how the College’s strategies entwine with the campus initiatives. ACES’ strategic directions align well with the strategic initiatives of the campus, so ACES’ strategies and goals are described in Section V as participation in the campus strategic initiatives.

The College also identified the most important initiatives and critical needs for facilities over the next five years in Section VI: the Food and Nutrition Institute, the Bioprocessing Research Laboratory, the 4-H Youth Development building, South Farm modernization, field research and education centers, and core facility renovation and maintenance.

Section IV Reinforce and Build Comprehensive Excellence

College of ACES – Comprehensive Excellence Goals

The College of Agricultural, Consumer and Environmental Sciences is committed to strategies to build comprehensive excellence in its core functions that will enhance its own preeminence in the institution and among its competitive peers. In many ways, these goals will also pertain to campus initiatives articulated in Section V.

Consistent with ACES' Statement of Strategic Intent, in measuring success, we will seek evidence of progress with respect to:

- Globalization
- Leadership
- Collaboration
- Knowledge and decisions

1. Research / Scholarship

Challenges and Opportunities

Appropriated financial resources are disproportionately fixed cost obligations, with opportunity for change only at the margin, and resources are currently insufficient for sustained competitiveness.

Without an exceptional degree of willing coordination, the decentralized management model may cripple the College's ability to respond to rapidly changing competitive pressures, cause redundancy, and result in fewer resources for the academic core.

The College of ACES confronts strong competition from other institutions and the private sector for recruiting and retaining talented faculty and staff.

Demographic change among ACES students, faculty, staff, students, alumni, and clientele has diminished the natural and historic connectivity between stakeholders, raising the transaction costs for fostering collaboration.

Among its competitive peers, ACES has a unique opportunity to leverage the presence of world-class science and engineering programs on the same campus and can offer the rest of campus its substantial experience and mechanisms for translating research into practice, including field research capacity adjacent to campus that has major potential implications for large-scale multidimensional projects.

ACES disciplinary strengths provide opportunities to lead complex interdisciplinary initiatives, e.g. bioscience, food and agricultural systems, nutrition and health, environment, family and community development, decision support systems. ACES can raise the level of its scholarly impact in influential policy and decision making venues.

Specific Goals

1.1 Set the intellectual agenda of influential organizations and at forums that address crucial global issues for agriculture, consumers, and the environment.

Current status: The College of ACES lags some of its peers in consistently being the preferred source of intellectual contribution in global deliberative venues. Our institutional Office of International Agriculture was disbanded ten years ago. Leadership and resource constraints have limited the functionality of its successor effort, ACES Global Connect. However, the College has begun to build its capacity to influence global agendas, for example in international agricultural policy and the World Trade Organization.

Five-year goal: Develop a comprehensive plan for ACES' globalization efforts. Establish permanent leadership and structures in the College for its global efforts in all of its mission areas. Solidify strategic international partnerships, such as the Euroleague for Life Sciences and North American Universities and among strategically important institutions in Asia.

Resources: Existing faculty and staff, College, departments, ACES Global Connect

Who's responsible: Deans, department heads, ACES Global Connect

1.2 Weave global experiences and perspectives into programs of our faculty, students, and staff.

Current status: ACES Global Connect is a limited resource effort to encourage and coordinate global perspectives throughout the College and its programs. A new program, ACES Academy for Global Engagement, has just been inaugurated with seven scholars to provide a basis for interested faculty and staff to gain global knowledge and experience. University of Illinois Extension has created a grant program to encourage global engagement of professional staff.

Five-year goal: Devise management and incentive systems to increase the level of global perspective in the College, including Extension, raise the status of global scholarship and program activity, and market the College as a global leader. Institutionalize and expand the ACES Academy for Global Engagement to involve at least 30% of the tenure system faculty as scholars or fellows and provide additional opportunities for professional staff. Raise an endowment of at least \$1.5 million that will yield annual revenue to support at least seven scholars annually for the ACES Academy for Global Engagement.

Resources: ACES Global Connect, ACES Academy for Global Engagement, International Programs and Studies, donors

Who's responsible: Deans, department heads, faculty, professional staff, ACES Global Connect, Office of Advancement

1.3 Empower teams of faculty to create and manage complex programs and center grants that cut across disciplines and missions.

Current status: The College of ACES has limited capacity, e.g. National Soybean Research Laboratory, to support, develop, and manage complex interdisciplinary programs.

Five-year goal: Develop and staff a grant development center to provide critical assistance for complex grant proposals. The center will aid in discovery of appropriate grant opportunities, facilitate coordination of faculty teams, and provide logistical and administrative support. Amplify the presence of ACES' faculty teams in major national and international initiatives, returning sufficient revenue to support the senior level position in the grant development center. Create superior management systems to establish and sustain at least two additional complex, cross-cutting programs.

Resources: Office of Research (Agricultural Experiment Station), Office of Extension and Outreach, academic departments, College

Who's responsible: Deans, department heads

1.4 Invest in generation of external resources and create exceptional value to decision makers.

Current status: While there is a general expectation that internal investments of resources in ACES should leverage external resources wherever possible, there is no systematic process to evaluate proposals internally and provide input to ACES' investigators and grant writers.

Five-year goal: Reorient discretionary investments to leverage external resources. To complement the College's investment decision processes, the Office of Research will develop a streamlined process to evaluate external proposals, ensuring that proposals are vetted for scientific merit and for relevance to the request.

Resources: Existing faculty, Office of Research (Agricultural Experiment Station), Office of Extension and Outreach, academic departments, College

Who's responsible: Deans, department heads

1.5 Organize translational teams that channel our investment in basic research to identify solutions to real world problems.

Current status: Team approaches are relatively common on the applied science and outreach side of the ACES' continuum, but greater collaborative ties need to be developed with the basic sciences for more effective translation and commercialization of breakthrough work.

Five-year goal: Devise incentive systems to reward leadership of and participation in collaborative efforts.

Resources: Existing faculty, Office of Research (Agricultural Experiment Station), Office of Extension and Outreach, academic departments, College

Who's responsible: Deans, department heads

1.6 Become a preferred collaborator for the private sector, other campus units, and leading public research institutions.

Current status: Specific faculty and program areas in ACES and University of Illinois Extension are already preferred collaborators.

Five-year goal: Implement creative mechanisms to transcend academic and organizational boundaries and lower transaction costs for collaboration with high priority partners.

Resources: Existing faculty, professional staff, Office of Research (Agricultural Experiment Station), Office of Extension and Outreach, academic departments

Who's responsible: Deans, department heads

2. Education

Challenges and Opportunities

Competition is strong within and outside of the University for high-achieving and underrepresented students. Competition for high achieving graduate students is increasing internationally. ACES risks losing support from small communities in the state as a higher proportion of available undergraduate seats are taken by high performance students from metropolitan areas.

Tuition increases reduce our cost advantage and increase pressure to deliver high quality distinctive programs. Tuition increases may reduce accessibility of an ACES education to low to middle income students and non-residents. With rising tuition, more students are likely to enter community colleges, which enjoy strong local support. The College of ACES can make its transfer programs more visible and attractive to allow opportunities for lower income students to

earn degrees from the University of Illinois at Urbana-Champaign. The College can expand its current efforts to guarantee transfer admissions in collaboration with community colleges.

The College of ACES can appeal to broader demographic segments of talented students by marketing programs attractively and changing perceptions of the College and by differentiating its undergraduate curricula as uniquely integrated and focused on interrelated aspects of agricultural, consumer and environmental sciences. ACES can also leverage its capacity in some upper level teaching programs, increasing attention to transfer student recruitment and articulation with community colleges.

Executive or professional graduate programs can tap the latent demand for mid-career professional education in a number of technical and management areas.

Distance learning methods and technology will enable ACES to extend the reach of its educational programs and share its expertise nationally and globally.

Specific Goals

2.1 Enhance undergraduate recruitment.

Current status: Latent demand for specific ACES' curricula is evident among the population of potential transfer students. The College currently admits about 100 transfer students annually.

Five-year goal: The College of ACES intends to increase the number of undergraduate transfer students by at least 50% over the next five years, through guaranteed transfer agreements, undergraduate enrollment in a Chicago-based horticulture program, and admission of international students from agricultural universities in China.

Resources: Office of Academic Programs, academic departments

Who's Responsible: Office of Academic Programs, academic departments

2.2 Integrate global knowledge into the programs of study for all of our students.

Current status: Global knowledge is supplemental to the design of most curricula and courses in the College of ACES. Study abroad programs have grown to include 30-35% of our students upon graduation. The College provides about \$70,000 of aggregate scholarship support for study abroad and international internships. Graduate students have not generally been supported for study abroad in ACES.

Five-year goal: All curricula in ACES will have global knowledge components. Study abroad will expand to 45% of our undergraduate students. ACES will increase total scholarship support by at least 50% for study abroad and international internship programs. A graduate study abroad program will be established.

Resources: Existing faculty and staff, Office of Academic Programs, ACES Global Connect, campus international programs and studies, donors

Who's responsible: Office of Academic Programs, academic departments, Advancement

2.3 Amplify leadership and entrepreneurial skills within the fabric of our programs of study to differentiate our students markedly from those in peer institutions.

Current status: The College is in the early stages of developing academic emphases on leadership and entrepreneurship. Deferred gifts of approximately \$1 million in value will eventually under gird College-wide leadership programs.

Five-year goal: Review curricula and programs. Introduce innovations to enhance leadership and entrepreneurial skills in all of ACES' students and program partners. Build the endowment to support the College's leadership program initiatives.

Resources: Campus leadership initiative, Office of Academic Programs, departments, donors

Who's responsible: Office of Academic Programs, departments, Office of Advancement

2.4 Enable our graduates, alumni, and clients to advance rapidly in leadership.

Current status: A new program in leadership is being developed in the Department of Human and Community Development, and ACES has played a leading role in development of a campus leadership program.

Five-year goal: Provide incentives and raise expectations for faculty, students and clientele to maximize their potential for leadership and entrepreneurial success. Develop a college-wide, student-oriented leadership program, engaging students, faculty, and alumni on campus and in communities through closer collaboration with University of Illinois Extension and the Alumni Association and increasing opportunities for students to shadow accomplished leaders.

Resources: Campus leadership initiative, Office of Academic Programs, departments, and ACES Alumni Association

Who's responsible: Office of Academic Programs, departments, Office of Advancement

3. Engagement/Service

Challenges and Opportunities

Measures for scholarship of engagement are not as uniformly recognized and valued as are the measures commonly recognized for scholarship in research and teaching activities. Hence the incentives for the engagement mission are also less tangible. The historical commitment to public engagement and service is challenged in the face of pressure to achieve highly valued research scholarship.

Investment in University of Illinois Extension has shifted dramatically from federal and state to local support. Increasing emphasis on revenue from instruction and overhead at the campus level favors investment in teaching and research rather than outreach capacity. Campus investment in Extension faculty and statewide programs has been compromised and campus level influence on local programs has diminished.

The College and University of Illinois Extension face competition from the private sector and other institutions in effective and innovative engagement in many areas (e.g. e-learning, lifelong learning, continuing technical education, engaging seniors).

ACES can offer the University a tremendous asset for engagement, marketing, and visibility by extending the reach of University of Illinois Extension to other units and program areas. Extension is deliberate educational program delivery focused on specific community needs and audiences. If closer ties between campus specialists and local units are created, new audiences and expanded markets can be reached through University of Illinois Extension, especially in urban areas of the state and among diverse communities, e.g. rapidly expanding Hispanic audiences. University of Illinois Extension is physically present in all 102 counties in Illinois, with over 1,000 employees and 75 units, serving as the doorway to the University of Illinois for audiences throughout the state.

Specific Goals

3.1 Increase the scholarly capacity for engagement and translation of science in the faculty and professional ranks.

Current status: Faculty Extension appointments have declined from 85 FTE to 31 FTE since 1988, and center-based educators supported on state funds have also been reduced. The General Assembly authorized \$300,000 of recurring funds in the FY 2007 budget to start restoring Extension specialist and educator capacity.

Five-year goal: Establish scholarly incentives and commensurate recognition for the engagement mission in promotion, tenure, and compensation systems. Reverse the erosion of faculty and professional human resources with statewide engagement responsibilities. Raise recurring funding levels for statewide Extension / engagement faculty and professionals by at least \$2 million over anticipated future state funding levels, and achieve net increases of up to 15 FTE of faculty Extension / engagement specialists campus-wide and up to 15 FTE of field based professionals in strategic areas of priority engagement within the next five years.

Resources: University of Illinois Extension, academic departments, campus leadership

Who's responsible: University of Illinois Extension, faculty, academic units

3.2 Increase entrepreneurial activity associated with Extension and engagement and become the epicenter for entrepreneurial activities in Extension nationally.

Current status: The campus received a major grant from the Kauffman Foundation to establish the Academy for Entrepreneurial Leadership. University of Illinois Extension has integrated its vision with the campus vision of an entrepreneurial organization.

Five-year goal: Develop \$4 million in support from the Kauffman Foundation and others to increase the level of entrepreneurial activity in Extension and to lead the nation in entrepreneurial Extension education.

Resources: University of Illinois Extension, Office of Extension and Outreach, Office of Research, Academy for Entrepreneurial Leadership (Kauffman Foundation)

Who's responsible: Deans, University of Illinois Extension

3.3 Increase external grants among Extension professionals and scholars in the engagement mission and increase grant income for University of Illinois Extension.

Current status: Competitive external grants in University of Illinois Extension account for about \$650,000 of current indirect cost recovery. Extension has redirected 10 FTE of field professional staff with ten-month appointments to encourage grantsmanship.

Five-year goal: Over the next five years, increase the external competitive grant portfolio in University of Illinois Extension to yield at least \$1 million annually in indirect cost recovery, and reach a total of 20 FTE of ten-month appointments for field professionals in Extension. Develop and staff a grant development center to provide critical assistance for complex grant proposals.

Resources: University of Illinois Extension, Office of Extension and Outreach, Office of Research

Who's responsible: Deans, University of Illinois Extension

3.4 Increase the economic value of products and services from our engagement and outreach functions, and raise the level of returns generated on a cost-recovery basis.

Current status: Most of the products and services associated with Extension and engagement functions are provided to audiences at little or no cost. An initial marketing program for sales of publications has been developed, called "Publications Plus."

Five-year goal: Develop and implement a comprehensive business plan for appropriate products and services with more predictable cost and revenue analysis.

Resources: Information Technology and Communications Services (ITCS),

Who's responsible: University of Illinois Extension, ITCS, College marketing

3.5 Strengthen the assets of our external partners and enhance our mutual capabilities.

Current status: University of Illinois Extension has provided support for local community organizations to receive significant external grant funding for their communities. Neither Extension nor the University accounts for such support to local communities.

Five-year goal: Establish a data system to account for grants received by third parties with leveraged in-kind contributions from University of Illinois Extension. Invest discretionary funds as incentives to develop the faculty and staff leadership needed to create major program collaborations with external and local partners. Raise the level of external grant funding for community partnerships by at least \$1 million.

Resources: University of Illinois Extension, local units

Who's responsible: Deans, University of Illinois Extension, local units

3.6 Organize and lead high profile activities at the nexus of science and policy.

Current status: Faculty and staff in the College of ACES lead a limited number of high profile scientific and policy activities that reach beyond the campus community.

Five-year goal: ACES faculty and staff will be broadly recognized for policy contributions and have the capabilities and resources to organize signature science and policy activities.

Resources: Office of Research, Office of Extension and Outreach, academic departments

Who's responsible: Deans, academic departments

3.7 Increase engagement and donor activity with international alumni and friends

Current status: Engagement and donor activities have focused mainly on alumni who earned bachelor's degrees from the College, rather than the significant numbers of international alumni who generally earned advanced degrees from programs in ACES. The College has started to reach this population with international alumni gatherings and faculty calls on alumni.

Five-year goal: Fully implement the advancement model to reach international alumni and potential donors. Leverage international alumni relationships to create strategic partnerships. Develop stronger and more regular relationships with scientific and educational representations at foreign consulates and affiliated organizations in Chicago.

Resources: Office of Advancement, ACES Global Connect, academic departments, faculty and emeriti, ACES Alumni Association

Who's responsible: Office of Advancement, ACES Global Connect, academic departments

4. Economic Development

Challenges and Opportunities

Public universities compete with the private sector in ACES' research areas with economic value. As public sector investment in ACES' research areas has declined and intellectual property rights have strengthened, research that has potential commercial value or application is increasingly done by private scientific entities.

University of Illinois Extension offers a robust delivery mechanism for economic development that can leverage additional campus assets. Expertise in community assessment and economic development planning is in strong demand.

ACES faculty has opportunities to expand development and use of valuable innovations and create more intellectual property, but effective support systems (e.g. research parks, technology management capabilities, financing mechanisms) will be required.

Specific Goals

4.1 Create and develop private and public partnerships, leveraging University of Illinois Extension and other campus networks, to enable more effective decision making and policy formation by individuals, firms, and various private and civic organizations.

Current status: Significant segments of the extension and outreach functions of ACES, its faculty, and University of Illinois Extension are oriented towards economic impact as a function of the land-grant mission, both in terms of generic goodwill and specific economic development goals. Extension has begun to place professionals in partner organizations to assist with economic development and other goals.

Five-year goal: Broaden and integrate the networks on campus to leverage campus resources more effectively for economic development outreach in communities of interest, segmenting audiences for more strategic economic development impact. Integrate campus economic development units, by building a cadre of faculty and specialists on campus with specific interests that link economic development and engagement with external communities. Expand the fee and grant value of off-campus economic development programs by at least \$6 million.

Resources: University of Illinois Extension, various campus economic development and engagement functions and units. Seek campus support for a program to hire faculty and professionals who are specifically oriented towards community and economic development.

Who's responsible: Deans, Office of Extension and Outreach, University of Illinois Extension, academic departments

4.2 Enable faculty, professional staff, students, and clients to transform innovation through invention into entrepreneurial action.

Current status: The campus and colleges have made significant progress in improving the systems to transform innovation into action, with establishment of the Office of Technology Management and creation of the University of Illinois Research Park and Enterprise Works, and Illinois Ventures.

Five-year goal: Increase disclosures associated with research and development programs in ACES and University of Illinois Extension by 25%, and thereby increase the number of patents and licenses and income from royalties. Create more effective capital financing mechanisms for bridging gaps between discovery and the market. Help to increase the ACES-related representation in the research park by at least one occupant annually. Develop partnerships necessary to realize initiatives like the Agri-Science Discovery Corridor in mid-Illinois, with explicit interests in transforming science into valuable innovation. Expand on progress to date with more deliberate facilitation and training for entrepreneurial action, integrated with University of Illinois Extension. Develop educational programs for students involving both theoretical and applied entrepreneurial practice with respect to scientific innovations.

Resources: Office of Research, Office of Extension and Outreach, academic departments, Office of Technology Management, external partners

Who's responsible: Deans, academic departments, University of Illinois Extension, OTM

ACES-UIUC Integrated Strategies for Comprehensive Excellence

The following goals are stated in the context of the campus UIUC strategic plan and represent the aspirations of the College of ACES as it contributes to the campus goals to reinforce and build comprehensive excellence. (*For reference, see a summary of the goals for the University of Illinois at Urbana-Champaign in Appendix F.*)

1. Strengthen Excellence in Disciplines Critical to National Stature

Challenges and Opportunities

Valid comparison with peers is difficult across the breadth of the College of ACES program areas. Among land-grant universities, the composition of colleges that historically included agricultural, consumer, and environmental sciences varies considerably. ACES has program areas that are regarded among the best in the nation, even though valid rankings are not available for most of the College's programs.

Disciplines in the College of ACES are closely integrated with others on the University of Illinois campus. For example, our third ranked Department of Agricultural and Biological Engineering is fully integrated with our highly ranked College of Engineering and a number of the sub-disciplines in the College of ACES, such as animal and plant sciences, agricultural and consumer economics, human development and family studies, and agricultural education, affiliate with basic disciplines in other colleges.

The complement of disciplinary foci in the College of ACES has always had a strong emphasis on translation of science into applications and outcomes for society's benefit. The reputation of the College of ACES is not only based on research preeminence, as indicated by measures such as academic rankings, grant volume, or publications. The College's stakeholders commonly expect science to result in beneficial applications. Research findings are deliberately applied through integrated education and extension programs with specific audiences.

Several pillars of current disciplinary preeminence in the College of ACES include comparative nutrition and health, bioactive compounds, animal and plant molecular biology and genomics (e.g. soya, maize, cattle, and pig), mammalian immunology, reproductive physiology, whole organism biological models, bio-processing (e.g. fermentation and wet milling), environmental sustainability of managed systems (e.g. air, soil, water quality, and global climate change), precision agriculture (e.g. power machine engineering and mechatronics), agricultural and consumer finance, risk management (e.g. futures and options), commodity marketing, production management decision analysis, spatial analysis, production management (e.g. dairy, beef, pork, soybean, and corn production systems), child development, and family studies.

The College of ACES has an excellent reputation for education, particularly with regard to residential undergraduate programs, advising, honors programs, study abroad, and a number of highly regarded graduate programs.

University of Illinois Extension is well regarded for its work in areas such as nutrition and wellness, production management, child development, and environmental management. Major opportunities exist to expand programming in the metropolitan areas and in community and

economic development. Initiatives are already under way to expand upon the largest urban Extension program in the nation.

Specific goals

1.1 Increase stature of core academic programs

Current status: Some disciplines and program areas in the College are at or near the top echelon while some lack the critical mass to reach their full potential to excel.

Five-year goal: Build more uniform excellence of academic programs in ACES, by adding a minimum of two new tenure track positions per year to the College. ACES will identify and phase out academic programs for which the College does not expect to maintain preeminence.

Resources: Incrementally build the productive faculty core with up to \$1.0 million recurring funding over the five-year period, aggressively pursuing campus faculty programs, such as Faculty Excellence and TOP, and hiring faculty strategically in critical areas.

Who's responsible: Deans, academic departments

1.2 Increase stature of key professional programs

Current status: The College of ACES currently has no professional programs to compare with medicine, law, or business, except for the accredited program offered in dietetics. Animal Sciences serves as a primary undergraduate pipeline for the professional program in veterinary medicine. While the College does not intend to replicate key professional programs on campus, there is evidence of latent demand for terminal master's programs in technical areas related to ACES domains for practicing professionals, as well as potential for expanded joint doctoral professional degree programs that can enhance the standing of other professional programs on campus. (*See Excellence in Graduate Education*) In addition, the College has observed evidence of demand for short-term continuing education programs aimed at professional audiences.

Five-year goal: Conduct a thorough assessment of market demands for specialized master's and joint doctoral professional degree programs and develop strategies and action plans that will differentiate and enhance UIUC professional programs. Challenge each academic department to develop a short-term educational program for a strategic professional audience.

Resources: Use existing resources and seek additional support to assess market potential and develop plans for professional programs involving ACES.

Who's responsible: Deans, department heads, key faculty members

2. Ensure Excellence in Academic Programs and Service for Undergraduate Students

Challenges and Opportunities

The College of ACES regards access to a superior quality higher education as an important principle for students from the entire state of Illinois. Access to the College for a segment of high aptitude students from other states and nations is important to provide a diverse undergraduate experience for all of ACES' students and to extend the reach of the College of ACES to global audiences. In addition to the populations in metropolitan areas, the College of ACES views high potential students from downstate and rural districts to be an important pool of promising students and future leaders.

The College has a unique capacity to provide higher education for students who have applied interests, as well as for students who desire opportunities in basic sciences.

The College of ACES has capacity to support additional undergraduate enrollment in some of its curricula, even though the campus on the whole is challenged to maintain the academic quality and service for the expanded student body.

Specific goals

2.1 Increase undergraduate students' access to academic advisors

Current status: ACES' student-to-advisor ratio ranges from 120:1 for freshmen in departments where graduate students advise freshmen to ratios of 50:1 or less in other units.

Five-year goal: Reduce the student-to-advisor ratio for all students in the College to a ratio of 50:1 or less.

Resources: Use existing faculty focused on student interests. Academic Programs will work closely with the campus and with advising coordinators in departments to optimize advising models in the College.

Who's responsible: Office of Academic Programs, academic departments

2.2 Ensure availability of small, interactive seminar courses for undergraduate students, particularly in gateway math, science, and writing courses (supplemental merit sections)

Current status: The mean section size of classes in the College of ACES is 29.3 students, below the campus mean of 30.5, and 27.7% of the instructional units in the College are taught to undergraduates in other colleges.

Five-year goal: Recruit additional students for ACES' small, interactive undergraduate courses, increasing undergraduate instructional units taught in ACES by 10%.

Resources: Particularly in upper level courses, the College of ACES has capacity to teach additional students in a variety of applied science courses.

Who's responsible: Office of Academic Programs, academic departments

2.3 Use instructional technology to promote quality in large-lecture courses

Current status: ACES has three large lecture courses, with more than 500 students.

Five-year goal: Use blended learning models, incorporating active learning both online and in class, to promote quality in all large lecture classes.

Resources: Center for Teaching Excellence, College Teaching Improvement workshops

Who's Responsible: Office of Academic Programs, academic departments

2.4 Increase undergraduate freshman-to-sophomore retention and six-year graduation rates

Current status: Data on undergraduate retention and six-year graduation rates in the College of ACES need to be analyzed to assess how the College contributes to the campus trends.

Five-year goal: Create a reliable College database for undergraduate retention and graduation rates to assess consistency with campus goals, and participate in campus improvement strategies.

Resources: In-house data on undergraduate retention and six-year graduation rates.

Who's Responsible: Office of Academic Programs, academic departments

2.5 Develop undergraduate and graduate interdisciplinary academic programs that link to emerging areas of scholarship

Current status: ACES has taken a leading role on campus in developing and implementing an undergraduate minor in leadership. The College is also represented in the campus initiative for a minor in entrepreneurship.

Five-year goal: See through to fruition the cross-campus undergraduate minor in leadership. ACES faculty will teach leadership courses and provide campus-wide weekday or weekend leadership retreats for undergraduates. The College also intends to take a leadership role in bringing the entrepreneurship minor to fruition.

Resources: Campus seed funding, support from regular funding streams, initial funding from the Kauffman Foundation for entrepreneurship, and potential donor sources to endow programs for leadership and entrepreneurship.

Who's responsible: Office of the Provost, Office of Academic Programs, Office of Advancement, Department of Human and Community Development

3. Ensure Excellence in Graduate Education

Challenges and Opportunities

Globally preeminent graduate programs are crucial to a globally preeminent institution. The number of graduate students in the College of ACES has declined from over 600 students to just over 500 in recent years. This trend is attributable to a number of factors, including fewer faculty members and accelerated faculty retirements, erosion in the international student pool, and competitive pressure for the best domestic students.

Compensation for graduate students, especially a robust portfolio of graduate fellowships, is critical for attracting the most qualified students.

The College has significant opportunities to strengthen and expand its master's degree programs for professional education, both for existing programs and by creating new programs where demand exists globally.

Specific goals

3.1 Focus efforts to strengthen recruiting of exceptional underrepresented, international, and domestic majority students

Current status: Competition has intensified among ACES' peer institutions for underrepresented, international, and domestic graduate students. One current limitation is the ability to offer enough fellowship support to outstanding underrepresented students.

Five-year goal: Create at least eight new College fellowships, one per department/unit, for underrepresented international and domestic graduate students.

Resources: Participate aggressively in campus fellowship programs and build an endowment of at least \$3 million to increase the number of endowed fellowships offered each year in each department.

Who's responsible: Graduate College, Office of Academic Programs, Office of Advancement, academic departments

3.2 Increase completion rate and reduce time-to-degree in doctoral programs

Current status: Documentation is required to determine if the current campus concern that doctoral degrees have too long a completion time is also a problem in ACES.

Five-year goal: Create a reliable database and then increase completion rates by at least 10%, and decrease the time-to-degree by at least 10% consistent with campus goals. Participate in campus strategies for improvement.

Resources: In-house data on completion rates and time-to-degree.

Who's responsible: Office of Academic Programs, academic departments

3.3 Increase opportunities for cross-disciplinary doctoral education.

Current status: ACES has a highly successful cross-disciplinary graduate program in the Division of Nutritional Sciences. The Division has successfully competed for three federal training grants and a prestigious research award from Bristol Myers Squibb.

Five-year goal: Increase the grant funding received and number of doctoral students in this program by at least 10%. Resolve issues of credit and overlap with the graduate degree programs in the Department of Food Science and Human Nutrition. Examine the model for creating additional interdisciplinary graduate programs.

Resources: Participate in campus fellowship and faculty recruitment programs. Recruit outstanding faculty into the nutritional sciences program who will attract funds and train graduate students.

Who's responsible: Graduate College, Nutritional Sciences, Office of Academic Programs

3.4 Develop professional master's programs in areas of need

Current status: ACES has off-campus master's degree programs in Crop Sciences, Natural Resources and Environmental Sciences, and Food Science and Human Nutrition, with total current enrollment of approximately 40 students.

Five-year goal: Increase enrollment in the current off-campus master's degree programs by at least 25%. Use instructional technology to deliver a large percentage of these programs to regional locations and to individual residences with anytime access. Establish at least one new professional master's degree program related to international agribusiness management. Develop recurring donor support or an endowment to create a recurring funding stream of \$100,000 to support new programs.

Resources: Market existing programs aggressively, using grant, campus, and college resources to provide course training and development as well as faculty incentives to increase interest in delivering these programs and extending their reach on a cost recovery basis.

Who's responsible: Office of Academic Outreach, Office of Academic Programs, departments

4. Foster an Inclusive Campus Community

Challenges and Opportunities

The racial and ethnic diversity of ACES' student population slightly lags the campus mean. In part, this is attributable to the composition of populations that the College has historically drawn from in recruiting students.

An important element of diversity that ACES contributes to the campus is the complement of rural and downstate students, even though ACES also recruits the majority of its students from metropolitan areas.

University of Illinois Extension has significantly diversified its staffing pattern, but more importantly is strategically serving a highly diverse set of audiences in Illinois with potential to significantly expand its reach, especially in metropolitan communities.

Specific goals

4.1 Require a plan for creating a more inclusive campus community from each academic unit; work with each college and administrative unit to establish stretch goals for the diversification of faculty and staff

Current status: ACES has expressed its intent to expand faculty, staff, and student diversity and has programs addressing that intent, particularly for student recruitment and University of Illinois Extension, but the College does not have a comprehensive diversification plan.

Five-year goal: The College will work with the campus to develop an appropriate comprehensive plan for diversification of its faculty and staff.

Resources: Existing faculty and staff time

Who's Responsible: College administrative units

4.2 Increase representation of African-American, Latina/o, and Native American faculty

Current status: ACES has 14% minority faculty representation by these groups among tenure-system faculty.

Five-year goal: Commensurate with the campus ambition of increasing by 2.4% the representation of these groups in the tenure-system faculty, ACES expects to add or replace at least one highly qualified faculty member per year from among these groups.

Resources: Use campus Target of Opportunity (TOP), Faculty Excellence, and other recruiting mechanisms, such as potential programs for faculty extension specialists.

Who's Responsible: College, academic departments, University of Illinois Extension

4.3 Increase the representation of African-American, Latina/o, and Native American academic professionals in units across campus

Current status: The College of ACES, considering the large number of academic professionals associated with University of Illinois Extension, is comparable to the campus mean.

Five-year goal: ACES will increase representation of these groups in the academic professional ranks commensurate with the campus ambition of increasing their representation by at least 2.5% over the five-year period.

Resources: Participate in campus programs that may be developed or can be extended to include academic professionals, such as Targets of Opportunity (TOP) and utilize other recruiting methods, particularly with respect to University of Illinois Extension.

Who's Responsible: College, academic departments, University of Illinois Extension

4.4 Increase the representation of women among tenured faculty members, particularly in the sciences

Current status: Approximately 19% of ACES' tenured faculty members are female.

Five-year goal: Increase the number of female tenured faculty members by 21 in ACES or an average of three per department over a five-year period, with particular attention to sciences and engineering departments with low female representation.

Resources: Participate in campus programs and use other recruiting methods.

Who's Responsible: College, academic departments

5. Enhance the Campus Work Environment

Challenges and Opportunities

As part of the University of Illinois, the College of ACES shares a culture of individual initiative rather than strong directive leadership. Decentralized management delegates significant decision making authority to the department and faculty level.

Support services have waned more relative to other functions in the recent budget reduction environment. Many support functions have been driven down to the individual level, which in some cases creates better alignment of resources with needs, but also leads to inefficient use of resources.

Specific goals

5.1 Expand training and professional development programs

Current status: The College of ACES already has a professional development program, oriented significantly towards University of Illinois Extension but also providing programs for campus-based personnel.

Five-year goal: Maintain professional development in ACES, seeking ways to increase the utility for all classes and ranks of faculty and staff. Integrate with human resource functions.

Resources: ACES' Professional Development, Human Resources

Who's Responsible: College, academic departments, University of Illinois Extension

5.2 Expand childcare options

Current status: The College provides the campus childcare resource in the Child Development Laboratory and the Early Child Development Laboratory. The Department of Human and Community Development also manages the Child Care Resource Service, which provides childcare referral services for six counties in east-central Illinois.

Five-year goal: Maintain current services within ACES and leverage campus investments in childcare programs and facilities

Resources: Participate in campus expansion of childcare programs and facilities

Who's Responsible: Facilities and Services, College, Human and Community Development

5.3 Expand work/life programs

Current status: Referral to faculty/staff assistance program is the direct responsibility of employees and their supervisors, with assistance from College human resources as necessary.

Five-year goal: Fully cooperate with campus expansion of faculty staff assistance program.

Resources: Campus faculty/staff assistance program, existing supervisory structure

Who's responsible: Campus, College units, Human Resources

5.4 Reward performance

Current status: Different models for evaluation of faculty and staff are used across subunits in the College. Standard evaluation methods are employed by University of Illinois Extension, and new performance and evaluation procedures will be implemented by Extension in FY 2007.

Five-year goal: Performance evaluation will be optimal and routinely conducted for all faculty and staff in the College, and rewards will be clearly linked to meaningful performance parameters that encourage outcomes desired for the organization. Working with campus promotion systems, the College will seek to strengthen the recognition of scholarship in the education and engagement missions.

Resources: Existing staff, Human Resources

Who's Responsible: Deans, department heads, Human Resources

Section V Strategic Initiatives

College of ACES – Strategic Directions

The College will invest to achieve its intent to be globally preeminent and locally relevant in domains that are consistent with our mission, have a fundamental base of excellence in advanced areas of discovery, contribute to our educational enterprise, and create value for our stakeholders.

Bioscience Innovation: Processes, Products, Environment, and Energy:

Biotechnology: Commitment to molecular biology remains a top priority, including investment in genomics and its functional derivatives. The Institute for Genomic Biology will enhance dimensions from animal and plant genomics and bioinformatics, to metabolism, comparative physiology and nutrition, and whole organism biology, to the socioeconomic implications of biotechnology. Unique opportunities exist to translate new knowledge from molecular biology to applications in society, using field-scale studies of whole organisms and biophysical systems on the new South Farms and biomedical applications based on animal models.

Bio-based initiatives: The College is well positioned to lead on issues related to the management and use of bio-based resources to benefit society and the environment. Significant research efforts exist in ACES and among Midwest collaborators, related to air, water, renewable energy, bio-based resources, and bio-refining for chemicals and materials. The College has the potential to bring together a nationally prominent critical mass around sustainable agricultural, food, and energy systems and applications.

Progressive Food and Agricultural Systems with Sustainable Landscapes:

Food and agricultural systems: The College of ACES has redoubled efforts to leverage strengths in food value chains and consumer behavior where we can truly be a globally preeminent intellectual center. At the same time, food and agricultural systems are viewed in ACES from multiple perspectives, from sustainable local production systems to global supply chains of inputs and outputs.

Integrated landscapes: Continuous rather than bounded systems, integrated landscapes focus on issues ranging from systems biology and bio-complexity to precision technology and management. Global issues pertaining to urban-rural interface are critical, due to changing demographics, urbanization, land use, environmental impacts of agriculture and human activity, economies of scale and scope in the food and agricultural sector, and emerging opportunities for “green” industries (horticulture to turf grass), companion animals, and restoration ecology and wildlife. Given the ideal laboratory of the South Farms and transfer of the arboretum to ACES, exciting concepts for green spaces and multiple uses can become features of the integrated landscape.

Environmental sustainability: The context of integrated systems management offers a host of potential problems and issues to solve, including managed ecosystems and climate change, inland waterways and great rivers, rural-urban transition, resource systems and process management, planning and information systems, and economic development.

Complementary Advances in Food, Nutrition, and Health:

Food, nutrition, & health: Interdisciplinary opportunities to investigate disease prevention, obesity, food bioactivity, and global nutrition are manifest on this campus. Such collaboration is clearly evident in nutritional sciences, the World Initiative on Soy in Human Health, work in bioactive foods, and chemo-prevention of cancer and other diseases. The College's vision extends to global food, nutrition, and health issues. Development of a World Food and Health Initiative or Center, anchored in a new Food and Nutrition Institute, would pay substantial dividends to the University, allowing this institution to engage more globally in nutrition and wellness, have more global impact on food policies, and enhance product development for human health.

Food security: Institutionalized as a campus initiative, the food security initiative is creating novel approaches to complex systematic problems. This area is of keen interest to public and private partners, who are forging new relationships with the College and the University.

Resilient Families and Communities:

Human development and family resiliency: The mission of the College of ACES explicitly emphasizes a commitment to quality of life for people. The commitment to family resiliency is supported by the campus initiative and major donations for Christopher Hall and the endowed chair in family resiliency, building a platform for unparalleled scholarship. Related engagement efforts are being significantly enhanced in the Chicago metropolitan area as a result of targeted new state appropriations.

Leadership: Leadership studies are being institutionalized with the arrival of new faculty in leadership and community development, in tandem with our communications, agricultural education, and agribusiness management programs. Programs in Extension provide the outreach basis for individual and community leadership development. The College will provide intellectual and structural underpinnings to partner with the campus to develop the leadership curricula and programs that will serve students across campus. The new doctoral program in community studies and outreach will provide an intellectual home for scholarship.

Decision Support for People, Enterprises, and Public Policy:

Public policy engagement: Food, agricultural, and community leaders play crucial roles in state, national, and international policy decisions relating to trade, intellectual property, transportation, regulation, and funding for research, extension, and education programs. For example, the Gardner/Farm Bureau Chair in Agricultural Policy advances the essential role of the College in state and federal agricultural policy. The College intends to consciously increase its commitment to policy-related scholarship for decision support.

Scientific literacy and communications: Raising the level of scientific understanding, increasing awareness of the role of science in society, and translating scientific knowledge for adaptation and application is a signal opportunity for a next-generation land-grant institution. ACES and Extension have unique capabilities to move in this direction. A high-visibility global outreach program on biotechnology already raises the University's profile in substantive policy forums.

Engagement and outreach: Significant opportunities exist to expand the knowledge and tools available to individuals and enterprises to make more informed decisions. For example, the *Farmdoc* program offers producers excellent practical tools for business decision making. *MaketMaker* is a web based tool that facilitates market research and development within the food and agricultural sector in Illinois and in coming years, nationally. *Going Solo* is a computer software product that teaches youth about business development and entrepreneurship.

eXtension: Internet and related technologies promise huge opportunities to expand the reach and impact of education and extension activities. University of Illinois Extension participates in national planning for innovation in educational delivery methodology. As the campus considers strategies to expand online education, Extension and ITCS are important resources. National and international use of the Urban Extension web site continues to grow rapidly.

Executive and professional education: The College already has successful graduate degree programs aimed at professionals in agricultural education, crop sciences, food science, and natural resources and environmental sciences, as well as numerous short-term and certificate programs. Opportunities have been identified in other areas such as global entrepreneurial leadership. University of Illinois Extension is developing distance education programs to address work force preparedness.

ACES-UIUC Integrated Strategic Initiatives

The College of Agricultural, Consumer and Environmental Sciences views strategic initiatives as new directions that the institution will take based on its future strategic investments. Following are goals in the context of the UIUC strategic plan to which the College of ACES will aspire as it contributes to the campus strategic initiatives. *For reference, see a summary of the initiatives and goals for the University of Illinois at Urbana-Champaign in Appendix F.*

1. Implement Interdisciplinary Approaches to Emerging Opportunities

1.1 Critical Initiatives in Research and Scholarship

The Goal: Enhance and expand our capacity for initiating multidisciplinary research through programs that build teams capable of addressing the most pressing problems in emerging areas of inquiry or scholarship.

Challenges and Opportunities

One of the primary points in ACES' Statement of Strategic Intent is to be known for our ability to draw on both internal and external resources to achieve an unusual degree of innovative collaboration. This statement implies the idea that multidisciplinary collaboration is fundamental to innovation.

The College of ACES also intends to be acknowledged as a first class science college that creates and applies knowledge to assist policymakers, managers, and others in making sound decisions. Translation of research is also a foundational concept of this intent.

Specific Goals

1.1.1 Expand the capacity of the campus to expedite the creation of multidisciplinary programs or projects that explore innovative ideas and accelerate the translation of research advances.

Current status: A number of ACES' faculty have participated in or have led major interdisciplinary efforts across the campus, such as the Institute for Genomic Biology, the Division of Nutritional Sciences, the Environmental Council, the Family Resiliency Initiative, and the Food Security Initiative. Innovative multidisciplinary approaches have also been seeded under C-FAR Sentinel grants and the Dudley-Smith Initiative for sustainable agriculture.

Five-year goal: Revive the C-FAR Sentinel program to its previous level, if C-FAR partners are able to increase state funding again to at least the \$15 million threshold. Participate to the fullest extent in program proposals for the Critical Research Initiatives of the campus, at or above a level of \$1 million annually.

Resources: Campus Critical Research Initiatives, Council on Food and Agricultural Research (C-FAR), Office of Research (Illinois Agricultural Experiment Station)

Who's responsible: Office of Research

1.1.2 Initiate bold new programs in the humanities, arts and social sciences

Current status: The College of ACES has programs and faculty capacity in social sciences, particularly in applied aspects of economics, sociology, psychology and human development. Similar to the situation at the campus level, expertise and experience is limited for building collaborative proposals and large-scale projects. University of Illinois Extension provides complementary engagement opportunities for units in ACES and other units. Other colleges, e.g. Education and Applied Life Studies, are integrating with Extension in their strategic plans.

Five-year goal: Integrate social sciences in the College of ACES with the social science fields across campus and participate in the dramatic expansion of CRI proposals involving social science faculty.

Resources: Office of Research (new grant development center), academic departments

Who's responsible: Office of Research, academic departments, faculty

1.1.3 Increase the number of multidisciplinary center or program grant proposals

Current status: ACES' researchers are currently leading large program grants related to swine genomics and to soy isoflavones in human health.

Five-year goal: The Office of Research and the Office of Extension and Outreach intend to redirect resources in order to build capacity to support large program grant proposals.

Resources: Office of Research and Office of Extension and Outreach

Who's responsible: Deans, academic departments

1.1.4 In collaboration with Carle Foundation Hospital, fund seed projects in Translational Biomedical Research that will stimulate collaboration and lead to external funding for research.

Current status: Faculty and research programs, in areas such as comparative nutrition and use of animal models for biomedical research, are promising contributions from the College of ACES to projects related to Translational Biomedical Research.

Five-year goal: ACES faculty will lead or participate in Translational Biomedical Research projects undertaken by campus units. A biomedical swine research facility will be established on the modernized south campus as a resource for whole animal model biomedical research.

Resources: Division of Nutritional Sciences, Food Science and Human Nutrition, Animal Sciences, Institute for Genomic Biology

Who's responsible: Deans, academic departments, Division of Nutritional Sciences

1.2 Illinois Informatics Initiative

The Goal: Lead an integrated approach to information systems, focusing on knowledge creation in the natural sciences, the humanities, the social sciences, and the arts, and on decision support for business and government.

Challenges and Opportunities

Decision support for people, enterprises and public policy is one of the strategic directions articulated by the College of ACES. Applied decision tools for private and public segments of our clientele rely on the robust informatics capabilities being developed on this campus and through this initiative. Social and technical aspects of information systems are integral to basic and applied areas of research in ACES.

University of Illinois Extension and Information Technology and Communication Services (ITCS) offer a bridge to various external publics within and beyond Illinois. A significant emphasis on information systems is driving the future of engagement, through programs like eXtension, a national effort to enhance applications of information technology to Extension.

The information technology divide between urban and rural America is growing, as connectivity remains limited in non-metropolitan areas of the country.

Specific Goals

1.2.1 Coordination and information sharing across campus to promote initiatives combining IT with other disciplines

Current status: Advances in information technology are essential for areas of investigation such as bioinformatics, precision agriculture, geographical information systems, remote sensing, and traceability systems. Such ACES disciplines and programs and the ITCS unit have connections with the excellent IT programs on campus.

Five-year goal: Contribute to the successful 10% growth of sponsored IT research funding on campus, with complementary inputs to multidisciplinary research projects and proposals and leveraging applicable funding sources for projects that can benefit from IT research expertise.

Resources: Office of Research, academic departments, University of Illinois Extension, ITCS

Who's responsible: Deans, academic departments, ITCS

1.2.2 Establish Institute for Advanced Computing Applications and Technologies (IACAT), including thrusts in humanities, arts, and social sciences

Current status: Only a limited number of research programs in ACES have active connections to the National Center for Supercomputing Applications (NCSA), but promising research linkages are possible in areas like bioinformatics, agricultural and biological engineering, and production decision systems.

Five-year goal: Support the establishment of IACAT as a campus resource, and ensure that faculty and educators from ACES are contributors. Link at least one joint faculty hire to IACAT. Involve University of Illinois Extension as a test bed for advanced IT applications.

Resources: Academic departments, ITCS, University of Illinois Extension, Office of Research

Who's responsible: Deans, academic departments, ITCS

1.2.4 Prepare students for careers as leaders who advance IT and integrate it with other disciplines

Current status: No specific IT curriculum exists within the College of ACES, but ACES does incorporate IT into existing curricula.

Five-year goal: ACES students will take advantage of opportunities in the campus program for an IT minor; ensure that ACES students with interest in CSE or similar programs have access; and continue to incorporate IT into the ACES curriculum.

Resources: Academic Programs, ITCS, academic departments

Who's responsible: Deans, Office of Academic Programs, academic departments

1.3 Integrated Sciences for Health Initiative

The Goal: Apply Illinois's expertise in the physical sciences, engineering, and life sciences to improving human health.

Challenges and Opportunities

Complementary advances in food, nutrition, and health constitute a principle strategic direction for the College of ACES. Significant contributions can be made to the campus initiative from the expertise available by programs in ACES, such as comparative nutrition, bioactive food components, genomic biology, agricultural and biological engineering, and environmental sciences. In addition, the largest and best funded program in University of Illinois Extension is focused on food and nutrition outreach.

USDA is the historic federal funding base for programs in food and nutrition, but increasingly other agencies such as the National Institutes of Health recognize the essential roles of food, nutrition, and environmental factors in human health, and such funding agencies now provide significant grants for research in the College.

Specific Goals

1.3.1 Integrate additional clinician scientists into targeted areas of research expertise

Current status: The College of ACES and academic departments such as Food Science and Human Nutrition and Animal Science, facilitated by the interdisciplinary graduate program in Nutritional Sciences, have limited historic ties to clinical medicine. Considerable research in ACES is presently focused on the role of food and bioactive components of food on cancer, infectious diseases, and aging.

Five-year goal: Participate in at least two faculty hires with interests in priority areas of clinical nutrition to connect with ACES' academic departments and units involved in comparative nutrition research.

Resources: Food Science and Human Nutrition, including dietetics, Animal Science, Nutritional Sciences

Who's responsible: Deans, academic departments, division director

1.3.2 Target resources to support the building of communities of scholars and external partnerships

Current status: With respect to food, nutrition, and health, a nuclear community of scholars already exists in ACES, with significant linkages to the food and pharmaceutical industries, and through University of Illinois Extension to community organizations that serve the public. In

addition, significant linkages focused on health have been established through the National Soybean Research Laboratory to communities worldwide. The federally funded Future Foods Initiative already supports research and outreach projects which are intended to build the foundation for a broader world food and health initiative. Significant core capacity also exists around the themes of genomic biology, which support scholarship and outreach related to health.

Five-year goal: Provide significant components of the campus infrastructure to support collaboration and interaction with community health care institutions. Develop a World Food and Health Initiative, focused on nutrition, food, and health globally.

Resources: Academic departments, Office of Research, Office of Extension and Outreach, University of Illinois Extension, Division of Nutritional Sciences, Institute for Genomic Biology

Who's responsible: Deans, academic departments, directors

1.3.3 Increase National Institutes of Health (NIH) and Department of Defense (DOD) centers, program project grants, and individual research grants

Current status: Faculty in ACES have developed national and international reputations in fields related to biomedicine, in areas such as plant and animal genomic biology, reproductive biology, neurobiology. An ACES' faculty member leads a major NIH program and others collaborate in centers and program projects. The large USDA center grant for the swine genome will have an impact on human health, using the pig as an animal model for research. Several researchers in ACES have individual project grants from NIH or DOD, and at least two faculty members are candidates for membership in the National Academies of Science.

Five-year goal: Increase ACES' leadership and participation in NIH and DOD center, program, and individual research grants. Establish one NIH center and two program projects led within the College of ACES.

Resources: Office of Research (proposal support)

Who's responsible: Deans, academic departments, faculty

1.3.4 Finance and construct translational research building

Current status: The Board of Trustees has endorsed construction of a Food and Nutrition Institute on campus, which would become the main building for the Department of Food Science and Human Nutrition. The concept includes significant translational research capability related to food, nutrition, and health, and the institute is expected to function as a center of global outreach for a World Food and Health Initiative.

Five-year goal: Realize the construction of the Food and Nutrition Institute or a broader concept that includes the purposes articulated by the FNI concept.

Resources: \$60-75 million in building funds from a combination of state and perhaps federal support, donors, and partners.

Who's responsible: College and campus leadership, campus development offices and ACES Office of Advancement, ACES Facilities Planning and Management

1.4 Illinois Sustainable Energy and the Environment Initiative

The Goal: Secure the economic future of the state and the nation by shaping the national research agenda, application, and stewardship of our most vital resources: energy, water, and land.

Challenges and Opportunities

Another of the primary strategic directions of the College of ACES is creating progressive food and agricultural systems with sustainable landscapes. Not only is Midwestern agriculture arguably the largest managed ecosystem in the world, but massive investments are also being made in renewable energy and bio-based products, inextricably linked to our complex managed resource landscapes.

In addition, there is intense interest in the sustainability of communities and the environment in a state that has a large urban population and very significant industrial capacity and is among the world's greatest agricultural and agribusiness centers.

University of Illinois Extension and the Sea-Grant program figure prominently in the campus plan. ACES has capacity to contribute to the initiative in research, education, and engagement across the spectrum of categories identified by the campus. In addition, the modernized South Farms must be an essential element of the living laboratory on the Urbana campus.

Specific Goals

1.4.1 Establish interdisciplinary research initiatives across five key areas: power generation and networks; transportation and portable energy systems; water supply and utilization; urban and rural landscapes; and materials. The initiatives will encompass not only the technologies but also the social and political challenges of adoption and realization of a sustainable and secure economy

Current status: Elements of all five of the key areas of research reside in ACES, including technological, social, and economic elements to contribute significantly to the interdisciplinary initiative. The College's strategic directions are also consistent with this initiative.

Five-year goal: The College of ACES will participate fully in the campus assessment of strengths and opportunities and the subsequent statewide and international programs.

Resources: Leverage existing faculty resources and participate in campus faculty program for the sustainability initiative, e.g., at least two critical faculty positions.

Who's responsible: Deans, academic departments, campus leadership

1.4.2 Develop new curricula and programs that prepare our students for the technical, social and political challenges of creating the sustainable global economy

Current status: Key educational program elements for this initiative are already present in the College of ACES and its curricula.

Five-year goal: Review and enhance the curricula in ACES to optimally reflect the goals of the campus initiative and integrate educational programs in ACES with the campus initiative.

Resources: Existing academic programs, campus seed funding

Who's responsible: Office of Academic Programs, academic departments

1.4.3 Create a sustainable campus and implement programs that allow testing and demonstration of new economically, environmentally, and socially sustainable practices

Current status: Elements of sustainable programs and practices are present or under development in the College of ACES.

Five-year goal: Complete modernization of the South Farms within the context of a sustainable landscape design and as a significant resource for testing sustainable practices and reducing discharges. Participate with the campus in achieving its goal to generate part of its energy requirements with renewable biomass and wind. Build the Bioprocessing Research Laboratory to develop technologies for new products, materials, and energy sources from renewable sources.

Resources: South Farms modernization, Facilities and Services, campus investment
Who's responsible: Deans, Office of Research, academic departments, ACES Facilities Planning and Management

1.4.4 Take a leadership role in setting the state and federal research agendas to address the technical, social, economic, and political challenges of sustainability

Current status: ACES has taken a leadership role in addressing various aspects of the research agenda for sustainability at the state and national levels, for example the FACE experiments and research on global climate change, which has captured international attention, and the endowed Dudley-Smith Initiative on the sustainability of agricultural systems. ACES' researchers have close ties to federal agencies, particularly in USDA and USEPA, which are influential regarding sustainability issues.

Five-year goal: Support campus efforts to increase the influential presence at the federal level and account for at least 10% of the campus goal for new funding to support interdisciplinary research on sustainability.

Resources: Existing faculty and staff, networks such as Extension

Who's responsible: Deans, academic departments, University of Illinois Extension

1.4.5 Engage leaders of the public and private sector in Illinois in an ambitious effort to translate technologies and best practices into use. Leverage on-going work of University of Illinois Extension and the state scientific surveys to build new capacity to coordinate campus-wide efforts

Current status: The College of ACES has significant experience and active ongoing efforts that engage leaders throughout Illinois with the research programs in the College. Science, technology, and best practices are translated into use through statewide University of Illinois Extension programs, close linkages with the state's scientific surveys, statewide partnerships such as C-FAR, and partnerships with firms in related industries.

Five-year goal: Complement campus planning for sustainability advancement to avoid redundant efforts and to carry out the necessary engagement work.

Resources: Office of Research (Agricultural Experiment Station), Office of Extension and Outreach, University of Illinois Extension, academic departments, C-FAR

Who's responsible: Deans, academic departments, University of Illinois Extension

1.4.6 Accelerate the private sector's commercialization of Illinois-discovered technologies and practices in sustainability

Current status: See ACES' Comprehensive Excellence Goals for Economic Development. Some of the technologies and practices that are being commercialized from research and development associated with the College of ACES contribute to sustainability goals.

Five-year goal: Assist the campus in meeting its goal to develop new companies that are based on technologies consistent with its sustainability goals.

Resources: Existing campus and College resources

Who's responsible: Deans, academic departments, OTM, research park, University of Illinois Extension

2. Enhance the Quality and Diversity of Undergraduate Students

The Goal: Reshape the demographic of the undergraduate student body.

Challenges and Opportunities

The undergraduate demographic of the College of ACES and its precursors has evolved significantly over time. The ratios of urban to rural representation and female to male gender have both increased markedly in recent decades. Underrepresented ethnic and linguistic populations in the College have increased gradually.

Opportunities exist for more deliberate shaping of the undergraduate population in the College of ACES. Strategies must be devised not only with respect to the environment on the campus, but also with an eye towards the changing demands in the marketplace for our graduates.

Specific Goals

2.1 Enhance the quality of our undergraduate students

Current status: Campus-wide, 50% of freshmen rank in the top 10% of their high school classes. The average high school rank for ACES' students is the 80th percentile, as compared to the 86th percentile for the average high school rank of students on campus.

Five-year goal: The campus goal is for 75% of freshmen to rank in the top 10% of their high school classes. The College of ACES will strive to close the perceived student quality gap with the campus. In working toward the campus goal of enhanced quality, the institution needs students who demonstrate holistic academic and creative capabilities and have strong potential for leadership. The University also requires legislative support from all areas of the state. In its effort to increase the number of highly qualified students admitted, the College of ACES will not exclude students from rural areas and downstate, especially southern Illinois, who are a genuine fit for the programs offered, who add to the diversity of the campus, and who are vital to the agribusiness economic engine of the state.

Resources: A proportion of the additional campus scholarship resources (\$3 million annually) to augment scholarship programs within the college, e.g. Jonathon Baldwin Turner Scholarships, will help ACES recruit students of the highest quality, as measured by HSCR, ACT score, and other qualifying factors.

Who's responsible: Office of Academic Programs, academic departments

2.2 Increase the diversity of our undergraduate students

Current status: About 7% of ACES undergraduates come from specific underrepresented groups (American Indian, black, and Hispanic). About 15% of the total scholarship funding provided to ACES undergraduates is devoted to underrepresented student populations.

Five-year goal: 10% of undergraduates will come from underrepresented groups. In addition to substantially increased campus scholarships, ACES will increase endowment income for scholarships by 25%.

Resources: Campus and college scholarships, College and department recruiting efforts

Who's responsible: Office of Academic Programs, academic departments, Office of Advancement

2.3 Increase merit aid necessary to recruit the most promising students

Current status: The College of ACES gives about \$450 in merit aid per student annually.

Five-year goal: Compete for the \$3 million annually in campus scholarship and increase ACES scholarships by 50% from the current level of approximately \$1 million to \$1.5 million annually and to about \$675 in annual merit aid per student.

Resources: Campus scholarship funds, development activity

Who's responsible: Office of Advancement, Office of Academic Programs, academic departments

2.4 Reshape the undergraduate population

Current status: ACES admits 625 freshmen and 100 transfers per year

Five-year goal: Increase transfer students by at least 50% over the five-year period. (See Section IV, *Enhance undergraduate recruitment*)

Resources: Compete for campus resources (OAR and Provost) for community college recruiting, and use College resources for increased recruiting and scholarships.

Who's responsible: Office of Academic Programs, academic departments

3. Prepare Students for Leadership in a Global Environment

The Goal: Educate our students to be leaders in their communities, the nation, and the world.

Challenges and Opportunities

The campus initiative is very consistent with the strategic intent of the College of ACES to prepare globally competitive undergraduate, graduate, and mid-career students and to be recognized for preeminence in a global context.

Specific Goals

3.1 Create “professors of practice” within at least five colleges to lead civic and community engagement scholarship and education initiatives

Current status: Adjunct professors are not specifically tasked with civic engagement, but the Laboratory of Community and Economic Development and other academic units in the College have an ideal opportunity to work with University of Illinois Extension to expand scholarship and education in this area. Community and economic development is the most rapidly growing area of interest at the local level for Extension.

Five-year goal: Create at least one (of the five campus-wide) “professor of practice” in the College of ACES, aimed at strengthening scholarship and education in community and economic development or youth development and linked to University of Illinois Extension.

Resources: Participation in the campus initiative, use existing Extension programs

Who's responsible: Deans, Office of Extension and Outreach, academic departments

3.2 Increase student engagement with faculty mentored research or creative activity

Current status: Approximately 10% of students in ACES engage in undergraduate research. The College awards about 35 undergraduate research grants each year of \$1,000 to supplement research projects. More students gain support from campus programs and engage in various creative activities.

Five-year goal: Increase the number of undergraduates doing research to at least 15% of ACES students. Award at least 50 undergraduate research grants, and increase research support from \$1,000 to \$1,500 per student. Establish an in-house electronic proceedings or journal in which students may publish their research results.

Resources: Increased faculty mentor time and endowment support for research awards.

Who's responsible: Office of Academic Programs, Office of Research, academic departments, Office of Advancement

3.3 Strengthen honors programs that draw and serve our most capable students

Current status: ACES' James Scholar program is a strong honors program, which includes a yearly student retreat and requires each student to complete an undergraduate research project.

Five-year goal: Finalize an honors seminar for ACES' James Scholars. Establish an electronic proceedings or journal in which James Scholars must publish their research to be certified.

Resources: Current faculty and deans

Who's responsible: Current faculty and deans

3.4 Create opportunities for civic engagement or community-based learning within 50% of academic units

Current status: Very few academic units in ACES offer credit-earning civic engagement opportunities or community-based learning courses. However, University of Illinois Extension has a strong network into communities whereby many opportunities could be developed.

Five-year goal: Develop community-based for-credit learning courses in at least two units of the College of ACES.

Resources: Compete for campus resources for course development. Leverage the resources of University of Illinois Extension in local communities.

Who's responsible: Office of Academic Programs, Office of Extension and Outreach, academic departments

3.5 Expand participation in study abroad experiences and internships that involve international placements

Current status: The number of ACES study abroad experiences of all types equate to about 35% of ACES students. The College provides varying levels of scholarship support to students, which totals approximately \$70,000 annually.

Five-year goal: Increase the number of ACES study abroad experiences of all types to equate to 45% of ACES students. Involve more faculty as mentors and student leaders on short term study abroad experiences. Increase student scholarship funding by at least 50% to supplement support for study abroad programs.

Resources: Faculty, endowment funds for study abroad and faculty involvement

Who's responsible: Office of Academic Programs, ACES Global Connect, academic departments, Office of Advancement

4. Strengthen and Diversify the Research Portfolio

The Goal: Diversify and enlarge our research portfolio to support additional research

Challenges and Opportunities

The research portfolio in the College of ACES is currently about \$60 million, increased from \$55.5 million in 1997. The state funding base for research declined from 36% of the portfolio in 1997 to 30% in 2004, while the federal formula base (Hatch Act) has remained flat in total dollars for two decades. In addition, state competitive research funding fell dramatically (40% between FY 2003 and FY 2004), as the C-FAR appropriation was reduced dramatically by the state. In FY 2004, the state's investment in food and agricultural research stood 21st among all states in the nation. Growth in ACES' research portfolio has derived mainly from success in competitive funding from federal agencies and private gifts and contracts.

The President has proposed a shift in federal research funding for food and agriculture from state formula funding, which is not growing and earns low returns for indirect costs, to increased competitive grants programs, with higher potential facilities and administration rates.

University of Illinois Extension strongly encourages professional staff to compete for extramural funding for applied research and educational programs. Significant opportunities exist to expand this pool of funding with sufficient qualified staff. Federal formula funding for state programs has stagnated, so competitive funding is critical for sustained local and community programs.

Specific Goals

4.1 Increase, diversify, and balance the campus basic and applied research portfolio across intellectual areas and revenue sources.

Current status: Total federal research funding in ACES is heavily weighted towards USDA sources (~60%) including formula funds, and USDA accounts for about 47% of the federal grants and contracts awarded in ACES.

Five-year goal: Diversify ACES' federal funding portfolio to reduce dependence on USDA and increase the grant funding profile from other federal agencies to at least 50% of the total federal funding portfolio. Increase research funding from state, foundation, and corporate sources by \$10 million.

Resources: Seed funding for research, Office of Research (Grant Management)

Who's responsible: Deans, Office of Research, academic departments, Extension

4.2 Strengthen relationships among applied social and behavioral sciences, education, and the local community to promote interdisciplinary research partnerships, to enable significant new external support and address pressing societal issues.

Current status: A core responsibility of the College of ACES and University of Illinois Extension is to build strong cooperative relationships with local communities for research and educational programs related to social and behavioral sciences. Local Extension programs have been very successful in enabling local partners to gain external support to address local needs.

Five-year goal: Increase partnerships on campus to commensurately increase, by 20%, research expenditures in social and behavioral sciences in the College, e.g. human and community development, agricultural and consumer economics, and youth development.

Resources: Local community partners, agency partners, University of Illinois Extension, academic departments

Who's responsible: Deans, academic departments, Office of Research, Office of Extension and Outreach

4.3 Help faculty in the arts, humanities, and social sciences promote interdisciplinary partnerships and seek external funding.

Current status: Faculty in ACES' social science disciplines are involved in some interdisciplinary partnerships, but far less funding is currently available from traditional sources, e.g. USDA and C-FAR, for the social sciences.

Five-year goal: Participate in the 20% increase in funding support for programs in the social science disciplines.

Resources: Interdisciplinary federal grants, private and foundation support

Who's responsible: Office of Research, academic departments

4.4 Foster an entrepreneurial culture for commercializing technology and extending scholarship opportunities for faculty by providing incentives to explore alternative funding streams, and helping faculty accept and embrace new types of research and scholarly activity.

Current status: As is generally true for the campus, ACES' faculty members currently identify their own sources of support and expertise needed to develop prototype technologies and launch companies.

Five-year goal: Leverage capacity to advise faculty on funding sources and proposal development; additional bridge funding to move technology to market (See Section IV – ACES' Comprehensive Excellence Goals for Economic Development)

Resources: Office of Research, Office of Extension and Outreach, academic departments, Office of Technology Management, external partners

Who's responsible: Deans, academic departments, OTM

4.5 Expand corporate funding base and link research efforts to corporations' needs.

Current status: Private/industry funding for ACES research, about 17% of the College's research expenditures, is high relative to campus, but it is significantly based on support from generic commodity organizations which provide little or no indirect cost recovery.

Five-year goal: Expand the current level of private/industry support for research in ACES up to 25%, but diversify this segment by shifting the emphasis to more support from corporate or private research sponsors which are willing to provide more overhead to the institution.

Resources: Office of Research, academic departments

Who's responsible: Deans, academic departments, Office of Research, Office of Advancement

4.6 Increase awareness of research activities and results at Illinois through a marketing effort aimed at C-title corporate executives (CIO, CEO, COO, and CTO)

Current status: Within the ACES' main sphere of influence, i.e. Midwestern food and agribusiness industries, there is significant awareness of research activities and results at Illinois.

Five-year goal: Develop and implement a strategic marketing plan to influence the highest value audiences in industries and donor organizations related to ACES' full research portfolio.

Resources: Campus and College marketing and communications staff and resources

Who's responsible: ACES Marketing, ACES Planning, ITCS, Office of Advancement, Office of Research, academic departments

4.7 Develop a presence in Washington, D.C. that enables faculty to understand the research funding landscape and puts Illinois in a position to influence national scientific policy

Current status: ACES has relatively strong linkages to specific federal agencies, e.g. USDA, and to members of Congress. International organizations, e.g. UN agencies, and many multinational firms also have representation in Washington, are influential potential partners, and may also be important sources of future research support.

Five-year goal: Support and partner with the campus effort to expand its local representation in Washington, D.C. Fully engage that office with ACES' partners and potential partners.

Resources: Campus staff and marketing efforts in Washington, College networks and partners

Who's responsible: Deans, academic departments, Office of Research

5. Initiate a Geographic Strategy: From Local to Global

5.1 Build Partnerships within the Champaign-Urbana Community

The Goal: Redevelop Orchard Downs to become the site of a model community.

Challenges and Opportunities

Redevelopment of Orchard Downs is a campus project, but it will be in close proximity to the Arboretum and areas of the modernized South Farm. As elements of the integrated landscape concept for the south campus and the South Farms, public access to some of the areas will enhance the living experiences of those who are attracted to Orchard Downs. University of Illinois Extension will provide programs of specific interest to residents of Orchard Downs.

Specific Goals

5.1.1 Develop Orchard Downs so that the first residents may move in by September 2011

Current status: The Arboretum and areas of the South Farm that are slated for modernization near to the Orchard Downs property are mainly supervised by the Department of Natural Resources and Environmental Sciences (NRES). A concept plan is being developed that would also move the historic Mumford house and barn to the corner of Race and Windsor, where a visitors' center could be developed.

Five-year goal: Continue to implement the South Farm modernization plan, with the nearby development of Orchard Downs as an element for consideration. Evaluate the feasibility of a visitors' center based around relocation of the Mumford house. Establish partnerships with other colleges to develop and implement Extension programs for residents. Provide support to encourage volunteerism from this community, serving the greater surrounding community.

Resources: Campus and community resources, opportunities to progress with South Farm modernization projects

Who's responsible: Campus facilities and services, NRES, ACES Facilities Planning and Management, Office of Advancement, University of Illinois Extension

The Goal: Partner with the Champaign and Urbana schools to strengthen P-12 education.

Challenges and Opportunities

University of Illinois Extension partners with P-12 schools throughout the state of Illinois, providing educational curricula and materials through 4-H Youth Development and agricultural education programs. Champaign County Extension is responsible for delivering those programs in Champaign and Urbana schools and in the community.

Specific Goals

5.1.2 Assist the College of Education leadership in focusing on collaborating with local community schools to strengthen and model effective University-community partnerships

Current status: University of Illinois Extension has established linkages with the College of Education, but not specifically focused on local Champaign County schools.

Five-year goal: Increase collaboration between relevant units in ACES, University of Illinois Extension (4-H Youth Development), and the College of Education.

Resources: Existing resources in ACES and University of Illinois Extension

Who's responsible: Deans, academic departments, University of Illinois Extension

5.1.5 Create initiative to enhance (a) math, science, and technology preparation for teachers, and (b) math, science, and technology learning opportunities for K-12 students

Current status: The College of ACES and University of Illinois Extension provide educational programs and curricular materials for teachers to utilize in the classroom. The 4-H Youth Development program has a variety of extracurricular and summer programs that can be integrated with K-12 education and experiential learning programs.

Five-year goal: Coordinate with and support campus goals for enhanced local math, science and technology teacher preparation and learning opportunities for K-12 students.

Resources: Existing resources in the College of ACES and University of Illinois Extension, 4-H Youth Development program, campus resources

Who's responsible: Office of Extension and Outreach, academic departments, University of Illinois Extension

5.2 Engage National and International Partners

The Goal: Develop a strategic, coherent, and highly public presence in Chicago

Challenges and Opportunities

University of Illinois Extension is already present in Chicago and each of the counties in the Chicago metropolitan area. Moreover, the Plan for 21st Century Cook County Extension is currently being implemented based on new earmarked funding from the State of Illinois, which more than tripled the resource base for Cook County Extension.

Specific Goals

5.2.1 Identify and strengthen focused, visible, and sustained engagement efforts that address Chicago's most pressing societal problems

Current status: The Cook County Extension plan calls for significant program expansion in five areas: civic engagement and economic development, urban community health, urban environment and natural resources, community education for adults and youth, and education through mass media and technology. Forty-two new educational program positions and nine administrative positions have been established under the plan. In addition, University of Illinois Extension is placing Extension professionals within strategic partnerships in the region, such as the Northeastern Illinois Planning Commission, the Chicago Department of Environment, and Chicago Park District. The College maintains a horticultural research and education center in St. Charles that provides research and outreach service for the "green industry" in the metropolitan area, a very important and growing business segment. The successful off-campus master's degree program in food science and human nutrition is taught in Oakbrook, reaching an important segment of the food industry in the Chicago area.

Five-year goal: University of Illinois Extension will solidify and expand upon current momentum for engagement across a range of priority needs in the Chicago area, including the expansion of internship opportunities and an emphasis on workforce preparedness. The St. Charles Horticulture Research and Education Center will be expanded, and opportunities for additional educational programs will be explored.

Resources: Office of Extension and Outreach, University of Illinois Extension, Office of Research, academic departments, "green industry" partners

Who's responsible: Deans, University of Illinois Extension, academic departments, Office of Advancement

5.2.2 Refocus and invigorate our Chicago recruitment strategy

Current status: ACES has active Research Apprentice Programs (RAP I and RAP II) and Young Scholars Program (YSP) to bring minority students (including those from Chicago) to campus for one, two, or three summer experiences prior to enrollment as freshmen. Limited numbers of community college transfer students from the Chicago area are enrolled in ACES. In addition, the Department of Natural Resources and Environmental Sciences (NRES) has initiated an undergraduate degree completion program in cooperation with seven Chicago area community colleges. After transfer to the program, the courses for degree completion will be taught by UIUC faculty in the Chicago area for placement in the metropolitan green industry.

Five-year goal: Expand the RAP I, RAP II, and YSP programs, in cooperation with the Chicago Agricultural High School and other high schools in Chicago. Evaluate the feasibility of a similar apprenticeship or internship program in food industry management. Help to establish two more specialized high schools focused on underserved populations. Increase the number of transfer students from Chicago to 20 per year by marketing our transfer programs in the Chicago area. Build the NRES program to 100 upper-class, part-time undergraduate students.

Resources: Faculty and Deans' time. For the NRES degree completion program, the Provost has committed two years of support, after which the program will be sustained by tuition recovery through the Office of Continuing Education.

Who's responsible: Office of Academic Programs, academic departments, Office of Advancement, University of Illinois Extension

5.2.3 Develop and implement a strategic communication plan that conveys the excellence and relevance of Illinois to the Chicago population

Current status: University of Illinois Extension provides visible outreach to strategic segments of the Chicago population. Significant expansion of Extension programs is presently underway in Chicago. The Urban Website of University of Illinois Extension receives more than 40 million page views worldwide. The ACES Office of Advancement actively builds and maintains strategic relationships with alumni and the relevant business communities in the Chicago area. Of nearly 30,000 ACES' alumni, over half of whom reside in Illinois, almost 5,000 live in Cook and adjacent counties. In general, the College of ACES is much less recognized in Chicago, except among specific segments of the business community related to food, agribusiness, and financial markets.

Five-year goal: Coordinate strategic communications with the campus in marketing the College of ACES and University of Illinois Extension in Chicago.

Resources: University of Illinois Extension, ITCS, ACES Marketing Office, ACES Office of Advancement, ACES Alumni Association, campus communications plan and resources

Who's responsible: University of Illinois Extension, ITCS, Office of Advancement, Campus Office of Public Affairs

The Goal: Expand our institutional connections in key geographic areas

Challenges and Opportunities

The College of ACES has excellent connections with some agencies in Washington, D.C., such as USDA agencies. The College would support and cooperate with an expanded University presence in the national capital to build additional partnerships with national and international organizations and federal agencies.

The intent of the College of ACES is to be recognized for preeminence in the global context. While the notion is not limited to international institutional connections, such connections are

clearly essential pathways for our work to succeed on a global scale. The College has actively pursued a portfolio of institutional connections around the world, and with renewed campus interest, important strategic opportunities exist where this institution and its partners can be strengthened for the benefit of our students, faculty, and other stakeholders.

Specific Goals

5.2.4 Build partnerships with Washington, D.C. agencies to expand opportunities for student internship and advanced study placements

Current status: Students from the College of ACES have participated in legislative internships and internships with USDA agencies, such as the Foreign Agricultural Service. Internships and advanced study placements in Washington, D.C., are limited and ad hoc. Peer institutions place significant numbers of their students in Congressional, federal, and other internships in Washington, D.C.

Five-year goal: Develop a concept for a new internship or advanced study initiative related to federal government or other opportunities in Washington, D.C. Build partnerships and raise financial support to annually place ACES students in internships in Congress, federal agencies, and other organizations.

Resources: Participate in the campus program for internships or advanced study with Washington-based agencies.

Who's responsible: Deans, Office of Academic Programs, Office of Advancement

5.2.6 Increase the number of international students at Illinois through innovative University-industry partnership agreements

Current status: ACES has few university-industry agreements for undergraduate education and none specifically for international students.

Five-year goal: Establish university-industry partnerships with three Chinese universities and ACES' corporate sponsors to recruit 20 Chinese transfer students, who will also complete an internship experience with an ACES corporate partner.

Resources: Memoranda of understanding to be established with partners. Students recruited will pay tuition and fees as international undergraduates. ACES will compete for campus resources for international recruitment support.

Who's responsible: International Programs and Studies, Office of Academic Programs

5.2.8 Increase the number of international undergraduate students at Illinois

Current status: ACES enrolls 30-35 international undergraduate students each year. Growth in freshman enrollment is limited by the campus.

Five-year goal: Build the international undergraduate student population in ACES to at least 50 through targeted recruiting, persuading the campus to allow incremental growth in ACES' freshman admissions in areas having sufficient capacity. Specifically develop a completion program with a peer institution in China.

Resources: Improve existing recruitment methods and leverage campus recruitment programs.

Who's responsible: Office of Academic Programs, academic departments

Section VI Facilities

Food and Nutrition Institute: The opportunity to build the Food and Nutrition Institute, as approved by the Board of Trustees, is pending capital financing from the state or other sources. The facility could serve not only food science and nutrition disciplines, but also allow for greater translational research and outreach opportunities related to the roles of food and nutrition in health and wellness.

Five-year goal: Plan and construct the Food and Nutrition Institute

Bioprocessing Research Laboratory: The concept to construct a flexible and scaleable bioprocessing facility to conduct innovative research on new processes and products from renewable biomass continues to be important for the College and its external constituents. The laboratory may be located in a campus facility or in conjunction with other facilities, such as grain processing on the modernized South Farm or a biomass power generation facility.

Five-year goal: Plan, construct, and equip a Bioprocessing Research Laboratory.

4-H Youth Development: The state 4-H offices have been located for several years in leased space at Presidential Tower near the campus, but removed from other University of Illinois Extension administrative offices. A permanent building to house the state 4-H office has been proposed for the south campus in order to provide better access to campus and for the public.

Five-year goal: Plan and construct a building for the state 4-H offices.

South Farms Modernization: South Farms offer not only a classical agricultural research and education site, but a tremendous opportunity for an integrated landscape research model and a campus resource, affirming the decision to locate the new farms near the campus and community. Novel opportunities for long-term agricultural, ecological, and industrial research and education stem from the unique 4,500 acre site adjacent to both a great university and an urban area, with the presence of riparian headwaters, diverse uses of natural resources, and ideal timing. Land acquisition for the second and future phases of the South Farms has progressed, infrastructure has been installed, and the new beef and sheep unit on Race Street was commissioned in August 2004. Lack of state capital funding postponed the original timetable for development phases, but innovative proposals are being separately considered as opportunities arise, such as reestablishing the poultry unit with assistance of interested campus partners and potentially relocating the dairy farm with a private partner, using a lease to own arrangement.

Five-year goal: Reevaluate the South Farm Modernization plan in light of limited state funding for the foreseeable future, and leverage opportunities to continue relocating and renewing facilities. At minimum relocate the poultry, dairy, and feed units, and establish new crop sciences, agricultural and biological engineering, and natural resources and environmental sciences research and education facilities.

Field research and educational facilities: South Farms is the largest component of the statewide system of food and agricultural research and education centers. All of the research and education centers suffer from deferred maintenance, old equipment, and shortages of land for modern experimentation, and programs are currently at risk. Revolving and recurring operating resources are inadequate to properly sustain the research and education centers. Knowledge and information produced is valuable for opportunities such as those in the metropolitan “green” industry, alternative agriculture, urban landscapes, bioprocessing, and animal industry development. For example, a recent agreement with the Department of Corrections allowed urgently needed expansion of horticultural programs at the St. Charles Horticultural Center. The

College has commissioned an externally led blue ribbon panel to evaluate the current and future statewide needs for research and education centers.

Five-year goal: Complete the evaluation of needs and resources for statewide research and education centers, and implement recommendations for future functional and location needs.

Restoring the Core in ACES

Mumford Hall: Remodeling the former agriculture library space has been deferred continually since construction of the ACES Library, Information and Alumni Center due to insufficient capital funds to undertake the project.

Five-year goal: Plan and remodel the former library space in Mumford Hall to expand and improve office space for critical College and departmental functions.

Turner Hall: Classrooms and other spaces in Turner Hall require technical upgrades for instructional purposes.

Five-year goal: Complete the technical upgrades in Turner Hall classrooms and teaching laboratories.

Bevier Café and Spice Box: The food service facilities and Quantity Foods Laboratory in Bevier Hall are in need of significant upgrade. The facilities are critical teaching laboratories for the College's hospitality management program, but managing them with minimal financial cost to the Department of Food Science and Human Nutrition is a challenge. Remodeling the facilities would provide more attractive food service environs. Opening of the Institute for Genomic Biology adds a significant potential customer base in an adjacent building.

Five-year goal: Complete remodeling the Bevier Café and the Spice Box.

Maintenance and Infrastructure

Deferred maintenance: A mounting problem for ACES as it is for the campus, deferred maintenance is especially critical for field research and education centers and animal care and research facilities. Much of the operating capital for research farms is derived from revolving revenue from commodity and livestock sales. However, these revenue sources are far from sufficient to cover the costs of operating research facilities, and investments for maintenance and renewal are chronically deferred.

Five-year goal: Develop a comprehensive plan with the campus for long-term maintenance and operating capital for core facilities.

Technology infrastructure: ACES has identified specific programmatic needs with implications for information technology. South Farms represents a huge opportunity as an open-air and extensive eco-laboratory, with potential for worldwide connectivity and interaction. Wireless connectivity is an important first step, but the ultimate need is to provide fiber connectivity for all mission critical areas. Any new facilities that are constructed on campus, such as those indicated above, will require state-of-the-art connectivity. As University of Illinois Extension achieves its goals to add campus-based Extension specialists, there are implications for using information technology to reach statewide and national audiences from central campus locations.

Five-year goal: Ensure that the South Farms, any new campus facilities, and expanded outreach capacity is served with advanced information technology connectivity.

Distance and distributive education: The campus needs to develop a more user-friendly, integrated, and robust system for conducting distance and distributive education. University of Illinois Extension and Information Technology and Communication Services (ITCS) should have a major role in shaping the way distance and distributive education is designed and delivered from the campus, based on both their extensive experience in the field and existing core competencies. Institutional commitment, central planning and management are required for consistency across the enterprise and to serve units unable to provide local resources. The job is too large for any single campus unit and system fragmentation would not be desirable, but the support system should be developed and deployed at both a central campus and local or College level, scaled appropriately so that the local efforts would complement central resources. Units that are committed to distance education should be assisted in developing local support services to help faculty design and develop high quality instructional materials deliverable through distance learning channels to remote learners.

Five-year goal: Ensure that a robust model for distance and distributive education includes both central campus and local College resources and commitments.

Section VII Garner & Manage Resources to Achieve Strategic Goals

Assumptions:

For the next five years, an overarching assumption is that the College of ACES will continue to manage the distinctive land-grant subsidiary units on behalf of the campus, namely the Illinois Agricultural Experiment Station and University of Illinois Extension, and make the necessary strategic and operational adjustments that follow from those distinctive features.

Funding Assumptions:

Federal Funds:

Formula funding for federal partnerships with USDA is expected to remain constant or decline.

- Hatch Act formula funding for the Illinois Agricultural Experiment Station
- McIntire-Stennis Cooperative Forestry
- Animal Health and Disease
- Smith-Lever Act for Extension

Opportunities for competitive federal funding and overhead cost recovery should improve.

- The federal administration wants to move USDA formula funding for research to a more competitive basis, with higher cost recovery rates.
- ACES has been and will continue to compete for federal funding from more diverse sources, such as the National Institutes of Health and the Departments of Defense and Energy.

State and Local Funds:

- The campus expects state funding to grow modestly (>1% per year).
- Local and state funding for Extension is less predictable.
- State funding appropriated through the Illinois Department of Agriculture is expected to increase approximately 3% per year
 - General Support for Youth Development
 - County Board Match for local Extension programs
 - Cook County Extension Special Funding

Illinois Council on Food and Agricultural Research (C-FAR):

- Funded by the state through the Illinois Department of Agriculture, C-FAR has been a significant research resource, but it does not provide recurring resources for overhead.
- Currently funded at \$3.5 million and increasing to \$4.5 million in FY 2007, C-FAR is expected to recover some of its peak annual appropriation level (\$15 million) within the five-year time frame of the plan.
- By agreement between ACES and the campus, the \$880,000 obligation on recurring faculty lines was drawn down by \$200,000 to \$680,000 in FY 2006. ACES and the campus are committed to annual contributions of \$50,000 each, which will fully eliminate the obligation over the next seven years.

- ACES' funding source has not been specifically identified, but its contributions will be derived from proceeds to the College as faculty lines are vacated over the life of the agreement.

Tuition Funds:

- The campus expects tuition to grow at a rate of ten percent per year for five years (~\$1,000 per year), and five percent per year for the subsequent five years.
 - ACES should expect the same baseline tuition growth.
 - ACES will investigate the viability and net potential benefit of a tuition differential for undergraduate students.
- ACES assumes the number of new freshmen will remain static, even though the campus plan calls for 1,000 fewer freshmen under an enrollment management plan. Other units increased freshman admissions in recent years when the College of ACES held constant.
- ACES assumes that the number of transfer students in residence will increase from approximately 100 now by 50% within two years and stabilize.
- ACES assumes that the NRES undergraduate completion program in Chicago will build to 100 part-time students over five years, beginning with 20 students the first year and adding 20 students each subsequent year.

Endowment Funds:

- The campus expects endowment funding to grow ten percent to twelve percent annually.
 - Based on a seven-year rolling average, this rate of growth includes future earnings on the existing endowment and new contributions to the endowment.
- ACES campaign goal is a total of \$170 million, including annual funds, for the five-year campaign, excluding new buildings and capital projects.
- ACES will assume an emphasis on programmatic support, rather than capital projects.

Institutional Funds:

- The campus expects facilities and administration income (ICR) to grow at three percent annually for the next ten years.
 - The College of ACES expects its growth for facilities and administration income to exceed the rate of inflation, as greater emphasis on external competitive grants yields results. This expectation is based on three main factors:
 - More competitive USDA grants funding, with higher ICR rates.
 - Growth of the non-USDA federal grant and contract portfolio in ACES.
 - Growth in grant funding for University of Illinois Extension, given the organizational priority on grants and changes in the incentive structures.
- The campus expects other fund sources (e.g. royalties, institutional allowances) to grow at the rate of inflation.

Auxiliary and Other Funds:

- Fee income
 - Extension anticipates fee income to grow faster than inflation over the next five years, as new business models are established for products and services.

- Extension generates grants for many local partners that are not scored as institutional grants for Extension – a category of *unrealized grantsmanship* that is expected to grow faster than inflation.
- ACES revolving accounts are expected to grow at the rate of inflation on average.
 - Commodity sales, which vary from \$2 million to \$3 million per year, are expected to decline on average and remain variable from year to year.

Reallocating Resources:

- The campus expects to reallocate three percent per year for the initial five years and 2.5 percent per year for the subsequent five years, with some units being protected.
 - ACES' reallocation will occur by default via the campus process.
- The campus expects to reallocate faculty positions each year as they become vacant.
 - The College of ACES assumes that its turnover of faculty positions will continue at a rate of five percent annually, contributing to the set of resources available to meet reallocations as outlined in the campus plan.
 - Continuing budgeted salaries on state funds comprise nearly 90 percent of the College's base budget, so vacant positions are the predominant source for all reallocations levied by the campus and the College.
 - ACES will continue to evaluate the method of current resource allocation relative to vacant academic positions.
 - Historically, the College and its departments shared in the assignment of such resources as positions became vacant, resulting in vacancy dollar values specifically earmarked for departmental use in filling approved vacancies, meeting reductions or reallocations, or other approved critical needs.
- The campus expects to reallocate other positions strategically as they become vacant.
 - In reality, this amounts to internal resource management, rather than reallocation.
 - Flexibility is only achieved to the extent that resources from campus reallocations do not leave the College. Otherwise vacant positions are the source for campus reallocation mandates, regardless of the level at which the resources are retained in the organization.
- ACES will evaluate the potential to create a College resource pool to fund stretch ideas.
 - One option would be a small additional increment from departments, e.g. ¼ to ½ percent, to contribute to one or two new faculty positions over a period of time.
 - The College will investigate ways to bank savings and shut down low priority operations.
 - University of Illinois Extension may require a flexible resource pool for faculty positions to leverage any programs available from the campus level.

Becoming More Efficient and Strategic In Decision-Making:

The campus expects to achieve more efficient administrative operations through consolidation, realignment, and improved structures and procedures. (No specific schemes have been offered at this point.)

Sweeping efficiency gains are more challenging in the College of ACES beyond those achieved during the College's reorganization and through its recent annual budget reduction and reallocation efforts.

- Efficiency is gained at the margin.

- Lean enterprise management is a continuing exercise, rather than a radical change in business.
- More transparency in operations is needed to locate opportunities for efficiency gains.
- Lean enterprise management should be viewed not only in terms of costs, but also in terms of productivity, e.g. improved collaborative outcomes.

Consolidation of field research operations is under review.

- Referring to the College's strategies for facilities, additional consolidation is a potential strategy for South Farm and field research and education programs.

Appendices

- Appendix A** Competitive Benchmark Analysis
- Appendix B** Distinctive Assets across Four Missions
- Appendix C** Strengths, Weaknesses, Opportunities, Threats (SWOT) Analysis
- Appendix D** Environmental Assessment
- Appendix E** Statutory and Regulatory Mandates
- Appendix F** Summary of Goals – University of Illinois at Urbana-Champaign

Appendix A – Competitive Benchmark Analysis

Overall Competitors	Research/Scholarship	Education	Engagement/Service	Economic Development
Cornell University	Cornell University	Cornell University	University of Wisconsin-Madison	University of Wisconsin-Madison
University of Wisconsin-Madison	University of Wisconsin-Madison	University of Wisconsin-Madison	Purdue University	Purdue University
University of California-Davis	University of California-Davis	University of California-Davis	Texas A&M University	Texas A&M University
Penn State University	Penn State University	Penn State University	University of Florida	University of Florida
Purdue University	Purdue University	Purdue University	Michigan State University	Michigan State University

Assumptions:

- Our competition is not exclusively public research universities, but we focused on public land-grant institutions for consistency with the campus approach
- ACES reserves the right to modify this list as planning progresses and as significant competitive analysis is accomplished.

Appendix A: UIUC / ACES and Selected Peers	Illinois	Cornell	Wisconsin	Penn State	UC-Davis	Purdue	Texas A&M	Florida	Mich. State
Competitor Category									
Research / Scholarship	x	x	x	x	x	x			
Education	x	x	x	x	x	x			
Engagement / Service	x		x			x	x	x	x
Economic Development	x		x			x	x	x	x
2005/2006 US News Ranking (University / Campus)	42	13	34	48	48	60	60	50	74
Institutional Characteristics									
Land-grant campus?	yes	yes	yes	yes	yes	yes	yes	yes	yes
Single campus or part of system?	system	contract*	system	system	system	system	system	system	single
Has a professional veterinary school?	yes	yes	yes	yes	yes	yes	yes	yes	yes
College Characteristics (with agriculture)									
Includes agriculture and food systems	yes	yes	yes	yes	yes	yes	yes	yes	yes
Includes human sciences / human ecology	yes	no	no	no	yes	no	no	yes	no
Includes environmental sciences / natural resources	yes	yes	yes	yes	yes	yes	yes	yes	yes
Includes campus biology, life sciences, or biochemistry	no	yes	yes	some	no	some	some	some	no
Campus Enrollment									
Undergraduate students	29,632	13,625	29,766	34,824	23,113	30,747	35,659	34,612	35,678
Graduate and professional students	10,338	5,893	12,942	6,465	6,894	7,906	8,770	15,081	9,488
Agriculture, natural resources, and human sciences									
Undergraduate students	2,268	4,355	3,160	5,308	4,664	4,385	5,181	3,318	3,267
Graduate students	505	1,126	1,165	755		660	1,216	1,028	620
Degrees granted in 2004-05 (Total agriculture, natural resources, and human sciences)									
Bachelor	521	848	794	1,679		1,029	1,494	799	578
Master	115	98	127	142		129	193	176	125
Doctoral	61	128	87	85		64	107	87	70
Undergraduate Attendance Costs in 2005-2006									
In-state tuition and fees	\$ 8,670	\$ 17,367	\$ 6,220	\$ 11,024	\$ 8,129	\$ 6,458	\$ 6,234	\$ 3,330	\$ 7,923
Out-of-state tuition and fees	\$22,756	\$ 30,367	\$ 21,060	\$ 21,260	\$25,949	\$19,824	\$ 13,914	\$18,538	\$ 19,676
Room and board	\$ 7,176	\$ 10,250	\$ 6,500	\$ 7,000		\$ 6,324	\$ 6,885	\$ 6,590	\$ 6,044
Faculty (Total agriculture, natural resources, and human sciences)									
Total tenured and tenure track faculty	227	602		398	346		248	428	318
Faculty salary (2003-04 campus mean, thousands)	\$ 86.10	\$ 86.80	\$ 81.30	\$ 86.20	\$ 83.40	\$ 79.60	\$ 78.10		
State Population (millions)	12.760	19.250	5.540	12.430	36.130	6.270	22.860	17.790	10.120
State Median Household Income (3-year ave., 2002-04)	\$45,787	\$ 44,228	\$ 47,220	\$ 44,286	49,894	\$43,003	\$ 41,275	\$40,171	\$ 44,476
ISI Rankings of Highly Cited Research Institutions in Ag	14	9	7		4			19	17
SAES Research Expenditures - FY 2004 (millions)	\$ 61.04	\$ 133.33	\$ 108.11	\$ 57.10	262.41	\$ 90.24	\$ 136.81	\$116.16	\$ 96.04
Scientist Years - FY 2004	139.4	426.5	174	278.1	450.3	263.3	262.9	319.9	165.7
Research Exp. / Scientist Year - FY 2004 (millions)	\$ 0.44	\$ 0.31	\$ 0.62	\$ 0.21	\$ 0.58	\$ 0.34	\$ 0.52	\$ 0.36	\$ 0.58
Extension Expenditures* - FY 2004 (millions)	\$ 49.70	\$ 80.05	\$ 61.32	\$ 39.34	\$ 85.53	\$ 43.19	\$ 102.07	\$ 67.72	\$ 66.04
State Rank - Gross Receipts from Agriculture	6	28	9	20	1	13	2	10	22
State's Gross Receipts from Agriculture (Millions)	\$ 9,708	\$ 3,653	\$ 6,864	\$ 4,859	\$ 1,835	\$ 6,043	\$ 16,498	\$ 6,844	\$ 4,312
State's % of National Gross Receipts from Agriculture	4%	1.5%	2.8%	2%	13.2%	2.5%	6.8%	2.8%	1.8%

*In categories reported by USDA/CSREES

Appendix B – Distinctive Assets across Four Missions

ACES' distinctiveness and differentiation from its competition may be viewed in numerous ways. In the context of each of the four missions of the organization, several distinctive assets may be noted:

Research/Scholarship

- ACES has strong basic and applied research disciplines across the biological, physical, and social science domains, so faculty can be competitive in multiple areas of investigation with various granting agencies.
- ACES has substantial centers of excellence (e.g. National Soybean Research Laboratory, Division of Nutritional Sciences)
- ACES has sustained leadership in biotechnology, (e.g. Institute for Genomic Biology, ERML)
- ACES has unique affiliations with the state's scientific surveys and the College of Veterinary Medicine.
- ACES associates with and has access to premier science and engineering units on the same campus.

Education

- ACES has a stable, high quality undergraduate student population.
- ACES has outstanding merit-based scholarship support.
- ACES has an excellent record of student advising and placement at graduation.
- ACES has distinctive, high ranking graduate programs in several areas.
- A high percentage of ACES' undergraduates are prepared to seek additional graduate and professional education.
- ACES has historically attracted a large number of highly qualified international graduate students
- A very high proportion of undergraduates are Illinois residents.

Engagement/Service

- ACES has excellent local support in Extension, sustaining effective outreach throughout the state and building unique partnerships among constituencies in metropolitan areas as well as downstate and rural communities.
- ACES has longstanding relationships with many public and private partners and corporations in our domains of interest, including several of international stature.

Economic Development

- A high number of ACES graduates remain in Illinois and contribute to economic development
- University of Illinois Extension and ACES have a successful tradition of applied research focusing on the adoption of knowledge for economic benefit.
- ACES has provided leadership for development of technology commercialization and the research park.
- Efforts like the National Soybean Research Laboratory have been positive models for integration of research, outreach, and economic benefits.

Appendix C – Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

Strengths

Research/Scholarship

- ACES culture is strongly oriented towards research opportunities and individual achievement.
- ACES has historically focused on excellence in translational research capacity, with emphasis and nationally recognized strength across the spectrum of basic and applied sciences.
- Historical connectivity has existed between disciplines and members of the faculty and staff in ACES, providing a basis for scholarly integration across major fields in the College.
- The external funding portfolio is relatively diverse, and the College is solvent; grants and contracts per faculty FTE have increased.
- Several exceptional facilities have been constructed in recent years.
- Decentralized management gives a high degree of decision making autonomy to faculty and program managers in ACES.

Education

- ACES has a high ability student population, equivalent to the campus mean.
- ACES has a reputation for high quality instruction and student advising and mentoring.
- A high proportion of students continue in graduate and professional programs.
- ACES occupies a leading position in graduate education in many of its disciplines.
- The College strongly supports study abroad programs.
- ACES maintains excellent formal and informal ties with community colleges.
- 4-H programs serve as an effective pipeline for students to enroll in the College and in related disciplines.
- ACES' students have an exceptionally strong affinity for the College.
- ACES has a comprehensive, high quality honors program for undergraduates.

Engagement/Service

- ACES has a statewide audience through University of Illinois Extension, which is the primary established framework for statewide educational outreach linked directly to the Urbana campus. It is a valued partner in communities throughout Illinois, supported financially in all 102 counties.
- Influential and well organized constituencies are allied with ACES and are among the principal advocates for the University of Illinois in public dialogue and policy venues.
- ACES has valuable external relationships such as the Illinois Council on Food and Agricultural Research (C-FAR) which represents a diverse group of stakeholders interested in translational research.
- ACES has a solid base of corporate relationships. ACES' graduates in corporate leadership roles contribute to the growing portfolio of private sector collaborations.
- ACES and Extension alumni are a strong cohort of support for the College and the University.

Economic Development

- ACES views economic development as a central responsibility of its mission.

- Many of ACES' scholarly achievements are applied in economically significant ways through Extension educational channels and other forms of outreach and collaboration in Illinois and beyond.
- ACES places many qualified students in strategic sectors that yield knowledge driven growth, and the College prepares students for management ranks.
- ACES led efforts to enhance the University's technology management capacity.
- ACES developed economically important institutions here and abroad.
- ACES trains and educates a significant number of international graduates who influence global development.
- ACES mission is naturally integrated with agriculture, food, and communities, bridging to other sectors of the local and global economy.

Weaknesses

Research/Scholarship

- ACES has a relatively small number of faculty compared to its peer institutions.
- Some peer colleges include basic life sciences and biochemistry, increasing their level of NIH and NSF funding and citations.
- ACES external funding portfolio draws heavily on sources with low returns for overhead and flat or declining total funding levels, e.g. USDA, CFAR, and commodity organizations.
- A small proportion of the faculty in ACES generates the major part of external research funding. Support is lacking for faculty to upgrade research skills to compete for external funding.
- The College's research portfolio is not optimally balanced between traditional areas and emerging opportunities. Changing research directions through new faculty hires is very slow.
- ACES lacks sufficient support structures and management capacity for some new and existing research programs, especially for large collaborative programs.
- Formal means are lacking to encourage interdisciplinary teams to form and compete for center grants or complex programs.
- Institutional mechanisms and traditions create barriers to innovation and collaboration, e.g. revenue sharing, governance structures, promotion and tenure.
- The College does not have formal mechanisms to encourage programs to share equipment or other resources.

Education

- Growth of ACES' undergraduate student population is limited by enrollment targets for the College and faculty capacity in specific curricula.
- The College has an imbalance of teaching capacity between areas of growing and declining student demand.
- Incentives, recognition, and rewards for teaching are perceived to be low relative to research.
- ACES has less than optimal diversity in its faculty and student population.
- The College lacks support for on-line and other distance educational delivery.
- While the trend is positive, most of ACES' students and faculty have limited global experience.
- ACES may have an excessive number of majors and academic program concentrations.

- Some of the curricula in ACES are not well aligned with employers' needs.
- Relative to many competitive institutions, fewer programs and resources are dedicated to recruitment of the highest caliber students from underrepresented populations.

Engagement/Service

- University of Illinois Extension is not well known or understood across campus, limiting opportunities to engage optimally with potential audiences.
- Faculty incentive systems do not effectively recognize and encourage engagement as a valuable scholarly activity.
- Forms of engagement, outreach or service that are not scored in the Extension system are inconsistently recognized, managed, and rewarded.
- Prices and fees for Extension goods and services do not represent market values.
- Extension has only recently focused on generating grants or other forms of competitive income.
- The College lacks a fully coordinated overall marketing strategy for its diverse audiences.
- Management of corporate relationships is confusing on this campus. The potential to leverage corporate partnerships remain relatively untapped.
- ACES dismantled its international programs office a decade ago, and global program support remains deficient.
- ACES lacks optimal influence in national and international circles.
- The global alumni and potential partner network is vastly underdeveloped.

Economic Development

- Economic development is not universally viewed as a mission, responsibility, or opportunity.
- Institutional incentives do not always foster entrepreneurial culture.
- Collaboration and leverage of other campus units to enhance economic development is minimal.
- Technology management support on the campus is still evolving and is less robust and responsive than in competitive institutions.
- Responsiveness to private partners also lags some of our competition.
- Community and economic development is the fastest growing program area in Extension, but the growth is uneven and lacks strong faculty support on campus.

Opportunities

Research

- Research in ACES deals with issues that matter to people, e.g. food, health, family and community relationships.
- ACES disciplinary strengths provide opportunities to lead complex interdisciplinary initiatives, e.g. bioscience, food and agricultural systems, nutrition and health, environment, family and community development, decision support systems.
- ACES can offer the rest of campus its substantial experience and mechanisms for translating research into practice.
- ACES has a unique opportunity among its competitive peers to leverage the presence of world-class science and engineering programs on the same campus.
- ACES has potential to generate additional financial support from non-traditional granting agencies, corporate and private partners, and foundations.

- ACES has the opportunity to raise the level of its scholarly impact in influential policy and decision making venues.
- Field research capacity adjacent to campus has major potential implications for large scale multidimensional projects.

Education

- ACES can appeal to broader demographics of talented students by marketing programs attractively and changing perceptions of the College.
- The College has the opportunity to differentiate its undergraduate curricula as uniquely integrated and focused on interrelated aspects of agricultural, consumer and environmental sciences.
- The College can expand undergraduate research experiences with increased public and private support.
- Differential tuition and fees may be possible for the College of ACES.
- ACES can introduce global knowledge as an integral component of all our programs of study.
- ACES can leverage its capacity in some upper level teaching programs, increasing attention to transfer student recruitment and articulation with community colleges.
- ACES can take more advantage of the 4-H pipeline for students as 4-H expands its scope and direction with youth audiences.
- Executive graduate programs can tap the latent demand for mid-career professional education in a number of technical and management areas.
- ACES can expand its distance learning programs with more effective collaboration of extension and teaching functions.

Engagement/Service

- ACES can offer the University a tremendous asset for engagement and visibility by extending the reach of U of I Extension to other units and program areas.
- New audiences and expanded markets can be reached through University of Illinois Extension, especially in urban areas of the state and among diverse communities, e.g. rapidly expanding Hispanic audiences.
- The demand for new high quality, relevant academic outreach products and engagement services can increase and diversify revenue streams for ACES.
- More effective integration of research, education, and outreach mission functions will strengthen engagement programs.
- ACES has excellent opportunities to increase support from corporate partnerships, but better campus coordination and support will be required.
- The changing face of ACES' alumni population can be leveraged more effectively to reach new external audiences.
- Broader, more effective engagement will yield substantial development and fund raising opportunities.

Economic Development

- University of Illinois Extension offers a robust delivery mechanism for economic development that can leverage additional campus assets.
- Expertise in community assessment and economic development planning is in strong demand.

- Innovative approaches to residential and mid-career educational programs can spur economic development across the state, nation, and world.
- ACES faculty has opportunities to expand development and use of valuable innovations and create more intellectual property, but effective support systems (e.g. research parks, technology management capabilities, financing mechanisms) will be required.

Threats

Research

- Appropriated financial resources are disproportionately fixed cost obligations, with opportunity for change only at the margin, and resources are currently insufficient for sustained competitiveness.
- Without an exceptional degree of willing coordination, the decentralized management model may cripple the College's ability to respond to rapidly changing competitive pressures, cause redundancy and result in fewer resources for the academic core
- ACES confronts strong competition from other institutions and the private sector for recruiting and retaining talented faculty and staff.
- Demographic change among ACES students, faculty, staff, students, alumni, and clientele has diminished the natural and historic connectivity between stakeholders, raising the transaction costs for fostering collaboration.

Education

- Competition is strong within and outside of the University for high-achieving and underrepresented students.
- Competition for high-achieving graduate students is increasing internationally.
- ACES risks losing support from small communities in the state as more high-performance students from metropolitan areas are accepted as undergraduates.
- Tuition increases reduce our cost advantage and increase pressure to deliver high-quality distinctive programs.
- Tuition increases may reduce accessibility of an ACES education to low to middle income students and non-residents, unless more financial aid is offered.
- With rising tuition, more students are likely to enter community colleges, which enjoy strong local support.
- Competitors may offer and capture the value from opportunities for mid-career professional education and on-line/e-learning education before ACES has programs in place.

Engagement/Service

- Faculty and staff lack incentives for the engagement mission; scholarship of engagement is not recognized or valued relative to research and teaching activities.
- Increasing emphasis on revenue from instruction and overhead favors investment in teaching and science rather than outreach capacity.
- The historical commitment to public engagement and service by ACES faculty is diminishing in the face of pressure to achieve more highly valued scholarship.
- Investment in Extension has shifted dramatically from federal and state to local support. Campus investment in Extension faculty and statewide programs has been compromised and campus level influence on local programs has diminished. Base federal funding continues to be at risk for serious erosion.

- The College and Extension face competition from the private sector and other institutions in effective and innovative engagement in many areas (e.g. e-learning, lifelong learning, continuing technical education, engaging seniors)

Economic Development

- Incentive structures to attract and retain the most talented scholars, students, and professionals are needed.
- Economic development may lead to conflicts of interest and commitment, which must be managed.
- As public sector investment in ACES' research areas has declined and intellectual property rights have strengthened, research that has potential commercial value or application is increasingly done by private scientific entities. Public universities now compete with the private sector in these areas of research.
- Stakeholders with powerful interests may inhibit allocation of resources to the best and highest benefits.

Appendix D – Environmental Assessment⁶

An understanding of the relevant forces shaping ACES and its mission is essential to developing a strategic plan for the College. Forces of change are challenges to traditional paradigms; to conventional understandings of the food, natural resource, and community systems; and to the established ways of doing things. While these forces are many and varied, a few major change agents stand out.

Globalization

Trends:

- *Economic forces, scientific and technical developments, cultural change and immigration, political trends, and environmental changes observed around the world have an increasingly direct impact on the people and institutions of Illinois.*
- *World population is driven by growth in growth in Asia, Africa, and Latin America.*
- *Urban population growth and economic development are accompanied by major changes in food demand and delivery systems, environmental changes, and social consequences.*
- *Illinois's economy is increasingly integrated with the rest of the world and global partnerships are essential for future success.*

Rapid information exchange has combined with increased market access and political openness in societies around the world to accelerate the effects of events occurring on distant continents on the people and institutions of Illinois. Knowledge, talent, and capital as well as products and commodities flow much more freely, and quickly, across borders. Many issues, including global development, transnational competition, market access, scientific and technological progress, international policies, environmental influences and climate change, and the effects of different cultures on families and communities, will have ever-greater influence on the decisions and actions taken locally in people's jobs, lives, and institutions.

Although world population growth is slowing, ninety-six percent of the growth will occur in less developed areas of Asia, Africa, and Latin America. Despite serious pockets of hunger and malnutrition throughout the world, agricultural productivity has generally kept pace with increasing demand, contributing to increased life expectancy and population growth. But the world food economy still faces challenges. Many of the poorest nations will have difficulty increasing agricultural productivity. At the other end of the spectrum, developing nations with rapidly growing incomes are experiencing dramatic changes in their food systems. These changes include consumer demand for more diverse food products and services, such as increased demand for livestock products and, in a related trend, more demand for animal feed.

Illinois has a major stake in world markets for food and agriculture. In 2004, some \$3.6 billion of agricultural and food exports originated in Illinois, ranking Illinois third in export shares among the states. Illinois was second in export of feed grains and products (mainly corn and corn products) and first in soybeans and products. At the same time, the U.S. and Illinois have been growing importers of food products, such as fresh fruits, vegetables, other horticultural products, tropical products, seafood, meats, and processed foods. Trade-related issues are critical to the welfare of Illinois agriculture and agribusiness and consumers as well. Along with more open

⁶ Modified from: *Making Change Work*, ACES' Strategic Plan, Version 1.0, 2000

borders, new challenges have arisen for food security, control of animal and plant diseases, and human health issues, such as food safety and security and the rapid increase in obesity.

Strategic Issues:

- *The food and agricultural sector needs knowledge and tools to meet challenges related to changes in global demand and competitiveness.*
- *Research, education, engagement and economic development efforts must help to sustain viable agricultural, food, and natural resource systems and strengthen our human resources and communities, in Illinois and globally.*
- *Safe and secure food systems must be developed globally to meet the needs of a growing population.*
- *Students and clients must be prepared to function effectively in a global environment.*

Demographic Change and Urban Development

Trends:

- *The population of Illinois is becoming more urban, as growth occurs in urban centers and population is declining in most rural counties.*
- *Greater ethnic diversity of the population predominates in urban areas, but diversity in rural areas is increasing as well.*
- *The proportion of Illinois's workforce involved in agricultural production and manufacturing is declining as more employment opportunities are concentrated in non-manufacturing sectors, especially services but including technology-related fields.*
- *Despite competition for non-agricultural usage, the vast majority of land in Illinois (77%) is devoted to agriculture.*

Illinois has major urban centers, as well as large rural areas, with both a major industrial and service economy and a large and vibrant agricultural sector. As the fifth largest state in America, Illinois's population is becoming more urban. Over eighty-five percent of the 12.7 million residents live in urban areas, with the fastest growing localities surrounding Chicago in northeastern Illinois. While Illinois's total population is expected to grow modestly, the population of many predominantly rural counties continues to decline.

Illinois's population is also becoming more diverse. In the next decades, the Hispanic population of the state, already more than twelve percent, is expected to double, while the non-Hispanic white population will decline and the African-American population will hold relatively steady at about fifteen percent. By 2020, one of every three Illinois citizens is expected to be from a group that today is considered to be an ethnic minority. As the population becomes more diverse, communities may have to address special challenges in terms of building community consensus, and institutions and social service providers may find themselves challenged to deal with more and different demands on their services.

Illinois has also experienced a shift in the workforce during the past two decades: employment in the manufacturing and agricultural production sectors has declined while employment in non-manufacturing sectors has increased significantly. Growth in technology-related fields, fueled by innovation, has been an important driver of Illinois's recent economic transition. Illinois has the twelfth highest per capita income in the United States, but income in the metropolitan areas is nearly one-third higher than in non-metropolitan areas. Growth in income and employment in metropolitan areas generally exceeds income and employment growth in non-metropolitan areas.

The farm population of Illinois has declined to approximately 1% of Illinois's total population, and less than 1.5% of the workforce of the state is directly engaged in agricultural production. However, adding various indirect employment contributions, the food, agricultural, and related sectors of the state's economy comprise at least 13% of the employment in Illinois.

The vast majority of Illinois's land is devoted to agriculture. Of 35.6 million acres of land in Illinois, 77% is agricultural, 11% is woodland, 3% is wetlands, 6% is urban or built-up land, and the remainder is open water or other land uses. Total farmland area is gradually declining. Urban development pressure and changes of land use from agriculture to other purposes are greatest in close proximity to the major metropolitan areas, but competition for agricultural land for other purposes exists throughout the state. In concert with these trends, the Illinois "Green Industry" is a powerful and growing force in the state's economy, ranging from nurseries and garden centers to parks, playing fields, golf courses and residential and commercial properties. Landscape products and services contributed \$4.72 billion in direct economic value in 2003, reflecting 20% growth since 1999.

Strategic Issues:

- *The makeup and interests of prospective students will continue to evolve with demographic trends.*
- *New and different stakeholders must be engaged, while maintaining support of existing stakeholders.*
- *The relevant portfolio of research, education, and outreach directions will evolve with changing audiences.*

Information Technology

Trends:

- *Information technology has dramatically transformed how daily life and business is conducted, improving efficiency in food and agricultural systems and enhancing resource and environmental management.*
- *Information and communications technologies encourage new approaches for developing and delivering educational programs and training.*
- *Developments in information technology and computational power continue to accelerate, and adoption of new technology is equally rapid.*

Far-reaching effects of digital technology are obvious in the enormous variety of products and services people use routinely in their lives and work. Advances in information and communications technology fuel economic growth and productivity; greatly influence the trend toward globalization; lead to significant changes in the openness and governance of societies around the world; accelerate development of powerful new tools for analyses, processes, and communication; and raise large and complex issues, such as how to manage change, cope with threats, and leverage opportunities.

Information technology has transformed the way business is conducted everywhere, including in agriculture. For example, specific applications of geographic information systems and global positioning systems combined with other technologies for precision agriculture, promise efficiency and improvements to crop systems, environmental management, pest management, and the like. New information and digital technologies have also catalyzed robust scientific

investigation, increasing speed, encouraging novel methods, and expanding capacity to acquire and analyze data. In higher education, for example, rapid and extraordinary access to information and new digital tools present a large menu of challenges, not the least of which are training people to use the available technology and challenging them to find new ways of applying technology for desirable outcomes.

In addition, new technologies create opportunities for using other modes and methods of educational program development and delivery while simultaneously raising new competitive issues for education.

Strategic Issues:

- *The College and its subsidiaries must remain leaders in application and use of information technology to accomplish its mission.*
- *Research priorities must reflect the rapid improvements in technology and computational capabilities and leverage the substantial information technology capabilities of the campus.*
- *Educational methods and delivery systems must be adapted to make effective use of technology for improved learning.*

Life Sciences

Trends:

- *Rapid progress is being made in understanding molecular processes and genomes of important species.*
- *Funding sources for research have focused strongly on investments in biotechnology, especially in areas related to health.*
- *Agricultural applications for biotechnology have been rapidly adopted.*
- *Resistance to biotechnology remains common among many interest groups and populations around the world.*

Technology in use or on the horizon will bring major changes to food, health, and natural systems and to families and communities. The frontier of life sciences technology, focused on advancing knowledge and application of fundamental molecular and metabolic processes, falls squarely within the mission of ACES. Life science technology already has commercial applications that benefit agriculture and human health. The powerful tools of biotechnology have yielded extensive data on important genomes that promise more valuable applications in the future. Through applying advances in digital technology and blending traditional disciplines (ranging from plant and animal agriculture to health, medicine, and engineering), entirely new areas of research opportunity have been revealed. Applications to life sciences, animal and plant systems, food processes, and the like will create entirely new processes, products, and management alternatives in agriculture, food, and natural systems.

The prospects for genomic biology and biotechnology research are exciting, but public research institutions also face significant challenges. Capital investment in scientific infrastructure is high, and there are many competing interests for investment. Development of valuable technologies raises intellectual property issues between private firms and public institutions. The accelerating pace of discovery also strains the abilities of the scientific community to evaluate fully the effects of new life science or biotechnology innovations and to explore the economic, environmental, and social concerns these applications raise. Although the University of Illinois

has key elements of the human and physical resources needed to conduct this research, several competing states have invested in biotechnology on a larger scale and earlier than Illinois.

As biotechnology has dramatically altered agricultural systems, new questions and issues have been raised about the technology. Lack of public confidence in and understanding of biotechnology has presented serious challenges to research and application. Early biotechnology applications in agricultural and food systems faced opposition in Europe and sparked concern among segments of the public in the U.S. and around the world. Consumer concerns about food safety are complicated further by debates about biodiversity and effects on the environment, potential imbalances of supply and demand, large-scale investment by the private sector, and other related issues. A role for public research universities has emerged. They must generate not only basic discovery knowledge, but they must also be able evaluate new processes and educate people with reliable information.

Strategic Issues:

- *New investments (for example, the Institute for Genomic Biology) must be appropriately leveraged to assume leadership in biotechnology and capture benefits for Illinois.*
- *New knowledge must productively contribute to the understanding of social and environmental impacts of biotechnology.*
- *More positive benefits of biotechnology must be realized (in improving human health, for example) for consumers and the public.*
- *Effective integration between disciplines is necessary to accelerate biotechnology research, education, and application.*
- *Intellectual property protection must give benefits to the state and its institutions while providing incentives for continued discovery and development.*

Food and Health

Trends:

- *The role of food and nutrition in individual and public health is of increasing concern to the public and policymakers.*
- *Lifestyle and nutritional choices are giving rise to an epidemic of obesity and related illnesses.*
- *Inadequate nutrition is known to undermine health and exacerbate the effects of chronic diseases, while nutritional therapies can help reduce the severity of diseases and enhance health.*
- *Molecular biology and discovery of metabolic pathways in nutrition and physiology are giving rise to promising developments for bioactive components in foods and delivery systems for important drugs and bio-chemicals through foods.*
- *Markets for specific bioactive components in food are growing rapidly, particularly for ingredients in food products, offering new business opportunities in the food sector.*

According to the International Food Information Council, over the past decade, health and how food impacts Americans' health have emerged as the single most important focus of media reports about nutrition and food safety, and food and nutrition have consistently dominated headlines. The intensity of discussion around the obesity epidemic and its role in human health has exploded recently, followed closely by concerns about disease prevention and risk reduction.

The bioactive functionality of food components in supporting human health is an important area of scientific inquiry. Aided by discoveries made possible by the rapid development of new technologies and analytical methods, opportunities are emerging that will lead to more nutritious,

safer food systems. The National Academy of Sciences defines functional foods as "...any food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains." Relationships between nutrients and bioactive compounds and the onset and treatment of diseases in populations ranging from pre-term infants to the growing elderly population are a subject of intense interest. Discoveries of compounds in foods having potential biological activity in humans raise many questions that need to be answered. For example, the chemical and biochemical interactions of food ingredients in a single food and in a meal must be understood to realize the potential benefits of consuming the functional components. The effects of chronic malnutrition in relationship to devastating diseases like HIV-AIDS are more clearly understood, but must be more widely acknowledged, particularly in terms of combating such maladies among severely affected populations in developing countries.

The World Bank reports that the prevalence of underweight children is the key indicator for measuring progress on non-income poverty. Malnutrition remains the world's most serious health problem as well as the largest contributor to child mortality. Nearly one-third of children in the developing world are underweight or stunted and more than 30 percent of the developing world's population suffers from micronutrient deficiencies. Moreover, new malnutrition problems are emerging. The epidemic of obesity and diet-related non-communicable diseases is spreading to the developing world, and malnutrition is linked to the HIV/AIDS pandemic. Nutrition interventions are essential for speeding poverty reduction, have high benefit-cost ratios, and can improve nutrition much faster than reliance on economic growth alone. Indeed, improved nutrition can drive economic growth.

Strategic Issues:

- *The emerging developments in foods and nutrition related to health offer potential first-mover advantages to the institutions and organizations which make the critical initial investments.*
- *Food, nutrition, biological, medical and engineering sciences need more integrated and collaborative approaches to solve problems and deliver the health benefits associated with food.*
- *Food and nutrition issues underlie massive social and political issues throughout the world, and a global approach is needed to address global food and health issues.*

Agriculture and Rural Communities

Trends:

- *Rural communities have become more important drivers for the long-term health of agriculture than agriculture is for rural communities.*
- *Consolidation in agricultural production and in agricultural and food-related business has accelerated. Food and agricultural production is more highly concentrated than in the past.*
- *Animal agriculture has experienced a long-term net decline in Illinois.*
- *Growth of the small, part-time producer sector, increased off-farm employment, and migration of urban dwellers into some rural Illinois communities are further segmenting the rural and agricultural audiences.*

The long-term trend in Illinois is toward fewer and larger commercial farming operations. The average farm size increased from 342 acres in 1990 to 377 acres in 2005, while the number of farms declined from 83,000 to 72,500 in the same period. The number of very small farms (less than \$10,000 in gross sales) has actually increased, while the number of large farms (over \$100,000 in gross sales) held steady, and the middle group lost the greatest numbers. Across the United States, the story is the same. Fewer than 35,000 of the nation's 2,000,000 farms and

ranches produce half of its agricultural output. Most farm households earn more income from non-farm employment than from farming operations, and non-farm economic activity in rural communities is greater than economic activity from agricultural production.

Of the 27 million acres of agricultural land in Illinois, 22.8 million acres were harvested for agricultural and related crops in 2005. Corn production comprised almost 12 million acres, while soybeans were produced on nearly 9.5 million acres, and winter wheat was grown on 600,000 acres. Total farm cash receipts in Illinois reached \$9.7 billion in 2004, of which crop cash receipts contributed \$7.8 billion. Corn accounted for 42% and soybeans provided 30% of the total cash receipts. Crop systems, particularly corn and soybeans, clearly are the largest present contributors to Illinois's agricultural output. Animal agriculture contributed \$1.9 billion of 2004 revenue to Illinois producers, accounting for about one-fifth of total cash receipts. Major concentrations of livestock are located in northwestern and southwestern parts of the state. Illinois generally ranks fourth in U.S. hog production on 3,000 farms. Faced with rapid integration of the industry, competitive pressures have caused more Illinois livestock production to consolidate into larger units under contractual arrangements, alliances, or corporate ownership. While seeking to be competitive and efficient, livestock producers face challenges to comply with expectations for protecting water and air quality, achieving higher standards of quality and safety for animal food products, and ensuring animal welfare.

Driven by the need to be both responsive to consumers and highly competitive, processors and agricultural investors have integrated supply chain functions that were previously independent. As they seek to capture value and lower costs for final products, processors and producers have forged alliances, production contract arrangements, and large-scale integrated operations. Changes in the food marketing system have fostered increased emphasis on food processing and reliance on global markets. Illinois produces 10 percent of the processed foods in the U.S. and ranks second among the states in production of foods and ingredients. Chicago's commodity futures and financial markets now reach around the world, tying food and agricultural businesses together to manage risks associated with rapid market changes. Illinois is also a major supplier of agricultural products to global markets, and the ability to deliver those products to consumers all around the world has a direct impact on the well-being of Illinois agriculture.

Today's food and agricultural firms adopt technology readily but often bypass traditional sources of information and knowledge. At the other end of the spectrum, an increasing number of residents are operating small farms on a part-time basis, and for most of these operators, agriculture is not a primary source of income. This group of agricultural producers may lack familiarity with conventional information sources. ACES will have to find new ways of reaching the entire spectrum of clients.

Strategic Issues:

- *Effective knowledge and education must be delivered to both the consolidating commercial agricultural sector and to specialized, small-scale, or part-time producer segments.*
- *Educational, research and engagement opportunities are relevant throughout more highly integrated chains and networks.*
- *The most important issues and principle audiences in the restructuring food and agricultural sector are evolving and segmenting, implying a need for deliberate prioritization of efforts.*

Environment and Natural Resources

Trends:

- *Development and population pressures compete with agriculture for natural resources.*
- *The public is more aware of the effects of agricultural systems and natural resource management on the environment, although accurate knowledge is often limited.*
- *As cropping systems have intensified and animal production systems have consolidated, concerns about the effects of these systems on Illinois's water, soil, and air quality have increased.*
- *Opportunities for renewable fuel, chemicals, and other products from biological processes have increased dramatically in recent years as costs for fossil sources have escalated and other incentives have increased.*

The activities of Illinois's large population and many industries and the infrastructure needs of urban communities, create competing demands for the finite land, water, biotic, and other natural resources of the state. Public concern about the environment has grown, and knowledge of environmental and natural resources systems has increased across the entire spectrum of biological and ecological study. Greater value has been attached to the environment as integral to the quality of life and to the posterity of natural resources for future generations. Recent years have witnessed trends toward more regulation of activities having potential environmental impacts and development of better management practices.

Illinois has diverse soil types and a climate range that allow producers in the state to grow many grain, oilseed, forage, vegetable, and horticultural crops. The ecology of Illinois is particularly well suited to cropping systems, comprised mainly of corn, soybean, and winter wheat. Cropping systems containing these major and several minor crops cover 65% of the land surface of the state and are part of the largest managed ecosystem in the world. Barring major unforeseen environmental change, epidemics of pests or changes in land tenure and use, similar cropping systems are likely to continue dominating the landscape of Illinois.

As Illinois agriculture has consolidated and intensified, and as communities of non-farm residents have continued to settle and grow in proximity to modern agriculture, a variety of natural resource and environmental issues have arisen. Water quality, especially in relationship to the use of nitrogen and other agricultural inputs, is a particularly significant environmental concern, as are issues of waste management and odor control for livestock operations. Biodiversity is an important concern for management of Illinois's ecosystems, raising issues ranging from pest management to conservation of genetic and other resources. The impact of human activity on air and water quality, potential climate changes, and land and soil resources have important ramifications for the future potential of Illinois agriculture. The importance of green space in urban areas, such as metropolitan Chicago, and the emergence of major industries related to homes, gardens, and public green areas require comprehensive knowledge and education related to integrated landscapes.

Powerful new tools are now available to better understand environmental impacts and to improve management practices. Geographic information systems help users to map, analyze, and better understand the diverse landscapes of Illinois, and global positioning systems allow for more precise application of inputs and better controls in agriculture. Biotechnology has increased the array of pest management strategies and may offer solutions to a wide range of other problems, from odor control in animal production to nitrogen fixation in plants.

As energy demand skyrockets and fossil fuel reserves dwindle, the opportunities are increasing to produce energy and products from renewable sources, such as biomass. Fuel ethanol production has increased dramatically, using corn as the primary source of carbohydrate. The industry in Illinois is a leading producer of fuel ethanol.

Strategic Issues:

- *Management strategies are needed to provide for viable managed agricultural and natural systems while also preserving and maintaining the quality of natural resources.*
- *Strategies are needed for increasing the potential and viability of renewable and bio-based processes and products for energy and materials.*
- *Strategies are necessary for deploying technology in ways that mitigate the deleterious effects of agriculture on the environment.*
- *The landscapes of Illinois must be understood and managed in a manner that can sustain and improve agricultural systems in an increasingly urban state.*

Future Directions of ACES⁷

The College of ACES must be positioned to respond to state, national, and global concerns and demands biologically, agriculturally, environmentally, economically, and socially. Addressing people, households, and communities as consumers and users of the environment will be critical challenges. Increasingly we must attend to how cultural differences globally and locally shape agricultural systems, food preferences and use, environmental attitudes and practices, or household and community consumption. Advances in biotechnology will be an increasingly important technological bridge to address issues in the agricultural, consumer and environmental sciences, both locally and globally. We must continue to lead in biotechnology discovery and develop integrated programs that apply these technologies to biophysical and social issues.

- Agriculture will become increasingly diversified in structure and product mix, as it evolves to meet new demands and competition.
- Agriculture will continue to be important economically and socially in Illinois, and will be globally competitive. Producers will increasingly augment productivity with concerns for economic sustainability and environmental sustainability.
- Land for production agriculture, both domestically and globally, will decline with continued population growth and development sprawl. Enhanced productivity and efficiency will be critical issues for maintaining a competitive and sustainable agriculture system in the context of increased farmland scarcity.
- Environmental-community issues will increase at the rural-urban interface. We can expect more conflicts between production agriculture, suburban development, and concerns for protection of the environment, preservation or re-creation of wetlands, and safety or availability of surface and underground water supplies.
- Advances in life sciences and in understanding the biological foundations and processes of important species will continue to drive explorations for biotechnological applications.

⁷ From: *Identity Task Force*, Report to the College of ACES, 2004

- Food and water safety issues, microbial and toxicological food safety, as well as chemical additives, preservatives, hormones, genetically modified organisms (GMOs), and antibiotics are of increasing concern to consumers.
- Agriculture will continue to advance technology in human-machine systems, where humans interact with machines working together in multiple intelligent machine systems. Control systems for machines will learn using algorithms derived from the biological world, i.e., neural networks and genetic algorithms.
- Emphasis will increase in the development of alternative bio-based fuels. Biomaterials are expected to have potential as a viable resource.
- New global demands are emerging from the growing populations worldwide in cities, and suburbs, and immigrant populations. Locally farmer demands for support of niche crops, agro-tourism, and environmental impacts will grow in response.
- Rural community development and leadership issues will continue as growing farm concentration enhances demands for small-town revitalization efforts.
- Involvement with state government agencies and public leaders beyond those of traditional agriculture is imperative.
- The long-term decline of federal and state research appropriations for agriculture is likely to continue.

The College of ACES must maintain global leadership in the discovery, education and dissemination of information in the evolving fields of agriculture broadly defined. More than previously, consumer demands and environmental concerns are expected to drive the research agenda across the board. If we neglect to integrate the consumer and environmental perspectives in agricultural programs - and vice versa – we will decline as a College in the future. Agricultural and environmental research funding at the state, national, and international levels will increasingly demand team efforts that incorporate consumer and community concerns.

Future growth in ACES' undergraduate students and research funding opportunities and Extension demands will rise in the consumer and environmental components relative to the agricultural. Consumer and environmental issues are emerging as locally relevant and critical to our future global preeminence. Demands for a safe, convenient and nutritious food supply are increasing locally and globally. Public interest is strong in how consumption of foods takes place in family contexts. Our historical farmer base in rural Illinois and internationally is continuing to decline and rural populations unrelated to agriculture are increasing. Demands for service and research for locally-led planning in natural resources use and regulating agricultural production will grow.

Appendix E – Statutory and Regulatory Mandates

OBLIGATIONS AND RESPONSIBILITIES OF THE UNIVERSITY OF ILLINOIS COLLEGE OF ACES AS STATED IN FEDERAL STATUTES

Federal Land-Grant Acts

The First Morrill Act of 1862 established the Land Grant university system by donating public lands to the several States and Territories which would provide support for colleges for the benefit of agriculture and mechanic arts.

The Second Morrill Act of 1890 applied a portion of the proceeds of the public lands to the more complete endowment and support of the colleges for the benefit of agriculture and the mechanic arts established under the provisions of the first Morrill Act of 1862.

The Hatch Act of 1887 established agricultural experiment stations in connection with the colleges established in several states under the provisions of the First Morrill Act of 1862 and of the acts supplementary thereto. It is the policy of Congress to continue the agricultural research at state agricultural experiment stations which has been encouraged and supported by the Hatch Act of 1887, the Adams Act of 1906, the Purnell Act of 1925, and the Bankhead-Jones Act of 1935.

The Bankhead-Jones Act of 1935 provided for the more complete endowment and support of the colleges in the several States, Puerto Rico, the Virgin Islands, and Guam entitled to the benefits of the First Morrill Act of 1862 for the benefit of agriculture and the mechanic arts, by authorizing annual appropriations from the federal treasury.

Federal Smith-Lever Act

The Smith-Lever Act of 1914 established Cooperative Extension, which was designed as a partnership of the U.S. Department of Agriculture and the land-grant universities, which were authorized by the Federal Morrill Acts of 1862 and 1890. Legislation in the various States has enabled local governments or organized groups in the Nation's counties to become a third legal partner in this education endeavor. The congressional charge to Cooperative Extension through the Smith-Lever Act of 1914 is far ranging. Today, this educational system includes professionals in each of America's 1862 land-grant universities (in the 50 States, Puerto Rico, the Virgin Islands, Guam, Northern Marianas, American Samoa, Micronesia, and the District of Columbia) and in the Tuskegee University and sixteen 1890 land-grant universities.

Federal Sea Grant Act

The Sea Grant Act of 1966 authorized the establishment and operation of sea grant colleges and programs by initiating and supporting programs of education and research in the various fields relating to the development of marine resources, and for other purposes.

Sea Grant is a partnership of academia, government, and industry focusing on coastal and marine resources. It operates through a university-based network to meet environmental and economic needs. Base funding for Sea Grant comes from the National Oceanic and Atmospheric Administration (NOAA) in the Department of Commerce.

Federal Bayh-Dole Act

The Bayh-Dole Act of 1980 created a government-wide policy that allowed awardees to retain title to inventions arising from Federally-funded research agreements, including grants, formula funds, and cooperative agreements.

CURRENT OBLIGATIONS AND RESPONSIBILITIES OF THE UNIVERSITY OF ILLINOIS COLLEGE OF AGRICULTURAL, CONSUMER AND ENVIRONMENTAL SCIENCES AS STATED IN THE ILLINOIS COMPILED STATUTES AND ILLINOIS ADMINISTRATIVE CODE

Illinois law expressly assigns many obligations and responsibilities to the College of Agricultural, Consumer, and Environmental Sciences at the University of Illinois at Urbana-Champaign (including Deans/Directors and units within the college).

Note that most of the obligations and responsibilities listed below appear in the Illinois Compiled Statutes without additional elaboration in the Illinois Administrative Code. Also note that other obligations and responsibilities of the college to the state are based on understandings and practices not mandated by statute. For example, the College of ACES has a representative on the Agricultural Advisory Committee of the Illinois Attorney General, but this responsibility does not appear in the Illinois Statutes or Illinois Administrative Code and is excluded from the following list under the methodology employed.

Listing of College of ACES Obligations and Responsibilities Expressly Set Forth in Illinois Law (Arranged alphabetically by Act, including citation and synopsis)

Conservation Education Act – 105 ILCS 415/3 (2005) [Advisory Board]

Synopsis: Creates the board and names the Director of the Extension Service to the board.

County Cooperative Extension Law – 505 ILCS 45/2 (2005) [Declaration of policy]

Synopsis: Makes it policy to provide for aid in agricultural (and other) education throughout the state through extension work of the College of Agriculture.

County Cooperative Extension Law – 505 ILCS 45/2a (2005) [Information and assistance]

Synopsis: Mandates that the cooperative extension service is to provide information and assistance to timber growers and others about the benefits attained through forestry management.

County Cooperative Extension Law – 505 ILCS 45/2b (2005) [Rural Transition Program]

Synopsis: Mandates that the Cooperative Extension Service establish the Rural Transition Program to provide a variety of services to farmers, their families, other rural residents.

David A. Wirsing Food Animal Institute Act – 20 ILCS 3931/15 (2005) [Governing Board]

Synopsis: Places Dean or representative on the board as a non-voting member.

Departments of State Government Law – 20 ILCS 5/5-525 (2005) [In the Department of Agriculture]

Synopsis: Places the Dean on an Advisory Board of Livestock Commissioners.

Food and Agriculture Research Act – 505 ILCS 82/5 (2005) [Findings]

Synopsis: Holds agricultural universities responsible for basic developmental and adaptive research related to the food and agricultural sector.

Food and Agriculture Research Act – 505 ILCS 82/20 (2005) [Use of funds]

Synopsis: Describes how the universities receiving the funds are to use those funds.

Food and Agriculture Research Act – 505 ILCS 82/25 (2005) [Administrative oversight]

Synopsis: The food and agricultural research administrator at the university is to administer the specifics of the research program and to prepare (with administrators from other universities) a proposed budget.

Forestry Promotion Act – 110 ILCS 360/1 (2005) [Forestry Division at the University]

Synopsis: mandates that the Board of Trustees establish and maintain a Forestry Division in the Agricultural Experiment Station.

Illinois AgrAbility Act – 20 ILCS 235/15 (2005) [Illinois AgrAbility Program Established]

Synopsis: Creates the program and provides that the U of I Extension shall work in cooperation with the Department of Agriculture to assist individuals engaged in farming or agriculture-related activities who have been affected by disability.

Illinois AgrAbility Act – 20 ILCS 235/20 (2005) [Eligibility]

Synopsis: Implies that Extension, in conjunction with the department of Agriculture, may set eligibility requirements.

Illinois AgrAbility Act – 20 ILCS 235/30 (2005) [Reports]

Synopsis: Provides that the Extension must supply the department of Agriculture with copies of any report or document regarding AgrAbility Unlimited that it supplies to USDA.

Illinois Family Farmer Support Act – 505 ILCS 57/10 (2005) [Cooperative Development Board]

Synopsis: Mandates the Cooperative Extension Service to create the board to establish, assist, and enhance the development of local and regional agricultural institutions.

Illinois Finance Authority Act (Article dealing with Agricultural Assistance) – 20 ILCS 3501/830-40 (2005) [Cooperative agreement with the University of Illinois]

Synopsis: The College shall evaluate the need for and performance of finance programs for farmers and agribusinesses.

Illinois Forestry Development Act – 525 ILCS 15/6a (2005) [Illinois Forestry Development Council] (Repealed effective December 31, 2008)

Synopsis: Places the head of the ACES' Department of Natural Resources and Environmental Sciences or a forestry academician on the council.

Illinois Gastroenteritis Act – 510 ILCS 15/2 (2005) [Swine Disease Control Committee and Cattle Disease Research Committee; research by and consultation with committees]

Synopsis: Places the Dean on those committees.

Illinois Noxious Weed Law – 505 ILCS 100/4 (2005) [Enforcement; list of noxious weeds; rules and regulations]

Synopsis: Gives the power to determine what a noxious weed is to the Director of the Dept. of Agriculture, the Dean and the Director of the Agricultural Experiment Station.

Illinois Noxious Weed Law – 505 ILCS 100/14 (2005) [Dissemination of noxious weeds through any article]

Synopsis: Mandates publishing of a list of noxious weeds, developed by the Dean and the Director of the Agricultural Experiment Station that may be disseminated through any article, a list of articles, and treatments to prevent such dissemination.

Illinois Pesticide Act – 415 ILCS 60/19 (2005) [Interagency Committee on Pesticides]

Synopsis: Places the Dean on the Committee.

Illinois Pseudorabies Control Act – 510 ILCS 90/5.1 (2005) [Pseudorabies Advisory Committee]

Synopsis: Places a representative of the University of Illinois on the Committee.

Illinois Seed Law – 505 ILCS 110/9 (2005) [University of Illinois Agriculture Experiment Station as official certifying agency]

Synopsis: Makes the University's Agricultural Experiment Station the official agency for certifying seed in Illinois, and empowers the Station to establish standards for maintaining genetic purity and quality.

Illinois Seed Law–Admin. Code – 8 Ill. Adm. Code 230.210 (2006) [Seed certifying agency]

Synopsis: The Agricultural Experiment Station appointed the Illinois Crop Improvement Association the seed certifying agency.

Liquor Control Act of 1934 (Article dealing with Grape and Wine Resources Council) – 235 ILCS 5/12-1 (2005)

Synopsis: Places the Dean on the council and has the Dean (in conjunction with the Dean of SIU College of Agriculture) nominate other experts to be on the council.

Livestock Management Facilities Act – 510 ILCS 77/20 (2005) [Handling, storing and disposing of livestock waste]

Synopsis: The Dean is to report to the Advisory Committee on the status of phosphorous research annually.

Property Tax Code (Article Dealing with Special Properties; Division Dealing with Farmland, Open Space, and Forestry Management Plan – 35 ILCS 200/10-115 (2005) [Department guidelines and valuations for farmland]

Synopsis: The College is to determine/provide information on the crop mix for each soil productivity index and production costs to the Department of Revenue; in effect, ACES provides the variables that go into the valuation formula for farmland property tax assessment thorough out the state. Appointees to the five-person Farmland Assessment Technical Advisory Board are to come from the Illinois colleges or schools of agriculture or other agencies.

Seed Arbitration Act – 710 ILCS 25/15 (2005) [Review Committee]

Synopsis: Creates and places the Director of the Cooperative Extension Service on the committee. It also lists the powers of the committee.

Seed Arbitration Act – 710 ILCS 25/35 (2005) [Seed Arbitration Council]

Synopsis: Places the Dean and the Director of Extension Services on the Council.

Soil and Water Conservation Districts Act – 70 ILCS 405/4 (2005) [State soil and water conservation districts advisory board]

Synopsis: Places the Director of Agricultural Extension on the board.

Southern Illinois University Management Act – 110 ILCS 520/6.6 (2005) [The Illinois Ethanol Research Advisory Board]

Synopsis: Places the Dean of the College of Agriculture, Consumer, and Environmental Sciences on the Advisory Board and lists the duties of that board.

Appendix F: Summary of Goals – University of Illinois at Urbana-Champaign

Section IV -- Reinforce and Build Comprehensive Excellence

1. Strengthen Excellence in Disciplines Critical to National Stature

- 1.1 Increase stature of core academic programs
- 1.2 Increase stature of key professional programs

2. Ensure Excellence in Academic Programs and Services for Undergraduate Students

- 2.1 Increase undergraduate students' access to academic advisers
- 2.2 Ensure availability of small, interactive seminar courses for undergraduate students
- 2.3 Utilize instructional technology to promote quality in large-lecture courses
- 2.4 Increase undergraduate freshman-to-sophomore retention and six-year graduation rates
- 2.5 Develop undergraduate and graduate interdisciplinary academic programs that link to emerging areas of scholarship

3. Ensure Excellence in Graduate Education

- 3.1 Focus efforts to strengthen recruiting of exceptional underrepresented, international, and domestic majority students
- 3.2 Increase completion rate and reduce time-to-degree in doctoral programs
- 3.3 Increase opportunities for cross-disciplinary doctoral education
- 3.4 Develop professional master's programs in areas of need

4. Foster an Inclusive Campus Community

- 4.1 Require a plan for creating a more inclusive campus community from each academic unit; work with each college and administrative unit to establish stretch goals for the diversification of faculty and staff
- 4.2 Increase the representation of African-American, Latina/o, and Native American faculty in units across campus
- 4.3 Increase the representation of African-American, Latina/o, and Native American academic professionals in unit across campus
- 4.4 Increase the representation of women among tenured faculty members, particularly in the sciences
- 4.5 Provide recommendations and guidelines for faculty mentoring, with the goal of enhancing retention
- 4.6 Plan and develop a resource base for a new facility or facilities that better serve(s) cultural centers and ethnic studies programs

5. Enhance the Campus Work Environment

- 5.1 Expand training and professional development programs
- 5.2 Expand childcare options
- 5.3 Expand work/life programs
- 5.4 Reward performance

Section V Strategic Initiatives

1. Implement Interdisciplinary Approaches to Emerging Opportunities

1.1 Critical Initiatives in Research and Scholarship

The Goal: Enhance and expand our capacity for initiating multidisciplinary research through programs that build teams capable of addressing the most pressing problems in emerging areas of inquiry or scholarship

- 1.1.1 Expand the capacity of the campus to expedite the creation of multidisciplinary programs or projects that explore innovative ideas and accelerate the translation of research advances
- 1.1.2 Initiate bold new programs in the humanities, arts and social sciences
- 1.1.3 Increase the number of multidisciplinary center or program grant proposals
- 1.1.4 In collaboration with Carle Foundation Hospital, fund seed projects in Translational Biomedical Research that will stimulate collaboration and lead to external funding for research
- 1.1.5 Evaluate our process for proposal submission and review to determine whether it meets campus needs

1.2 Illinois Informatics Initiative

The Goal: Lead an integrated approach to information systems, focusing on knowledge creation in the natural sciences, the humanities, the social sciences, and the arts, and on decision support for business and government.

- 1.2.1 Coordination and information sharing across campus to promote initiatives combining IT with other disciplines
- 1.2.2 Establish Institute for Advanced Computing Applications and Technologies (IACAT), including thrusts in humanities, arts, and social sciences
- 1.2.3 Expand the Information Trust Institute
- 1.2.4 Prepare students for careers as leaders who advance IT and integrate it with other disciplines

1.3 Integrated Sciences for Health Initiative

The Goal: Apply Illinois' expertise in the physical sciences, engineering, and life sciences to improving human health

- 1.3.1 Integrate additional clinician scientists into targeted areas of research expertise
- 1.3.2 Target resources to support the building of communities of scholars and external partnerships
- 1.3.3 Increase National Institutes of Health (NIH) and Department of Defense (DOD) centers, program project grants, and individual research grants
- 1.3.4 Finance and construct translational research building
- 1.3.5 Build the Department of Bioengineering

1.4 Illinois Sustainable Energy and the Environment Initiative

The Goal: Secure the economic future of the state and the nation by shaping the national research agenda, application, and stewardship of our most vital resources: energy, water, and land.

- 1.4.1 Establish interdisciplinary research initiatives across five key areas: power generation and networks; transportation portable energy systems; water supply and utilization; urban and rural landscapes; and materials. The initiatives will encompass not only the technologies but also the social and political challenges of adoption and realization of a sustainable and secure economy
- 1.4.2 Develop new curricula and programs that prepare our students for the technical, social and political challenges of creating the sustainable global economy
- 1.4.3 Create a sustainable campus and implement programs that allow testing and demonstration of new economically, environmentally, and socially sustainable practices
- 1.4.4 Take a leadership role in setting the state and federal research agendas to address the technical, social, economic, and political challenges of sustainability
- 1.4.5 Engage leaders of the public and private sector in Illinois in an ambitious effort to translate technologies and best practices into use. Leverage on-going work of University of Illinois Extension and the state scientific surveys to build new capacity to coordinate campus-wide efforts
- 1.4.6 Accelerate the private sector's commercialization of Illinois-discovered technologies and practices in sustainability

2. Enhance the Quality and Diversity of Undergraduate Students

The Goal: Reshape the demographic of the undergraduate student body

- 2.1 Enhance the quality of our undergraduate students
- 2.2 Increase the diversity of our undergraduate students
- 2.3 Increase merit aid necessary to recruit the most promising students
- 2.4 Reshape the undergraduate population

3. Prepare Students for Leadership in a Global Environment

The Goal: Educate our students to be leaders in their communities, the nation, and the world

- 3.1 Create "professors of practice" within at least five colleges to lead civic and community engagement scholarship and education initiatives
- 3.2 Increase student engagement with faculty in research or creative activity
- 3.3 Strengthen honors programs that draw and serve our most capable students
- 3.4 Create opportunities for civic engagement and/or community-based learning within 50% of academic units
- 3.5 Expand participation in study-abroad experiences and internships that involves international placements

4. Strengthen and Diversify the Research Portfolio

The Goal: Diversity and enlarge our research portfolio to support additional research

- 4.1 Increase, diversify, and balance the campus basic and applied research portfolio across intellectual areas and revenue sources
- 4.2 Strengthen relationships among applied social and behavioral sciences, education, and the local community to promote interdisciplinary research partnerships, to enable significant new external support and address pressing societal issues
- 4.3 Help faculty in the arts, humanities, and social sciences promote interdisciplinary partnerships and seek external funding

- 4.4 Foster a stronger entrepreneurial culture for commercializing technology and extending scholarship opportunities for faculty by providing incentives to explore alternative funding streams, and helping faculty accept and embrace new types of research and scholarly activity
- 4.5 Expand corporate funding base and link research efforts to corporations' needs
- 4.6 Increase awareness of research activities and results at Illinois through a marketing effort aimed at C-title corporate executives (CIO, CEO, COO, and CTO)
- 4.7 Develop a presence in Washington, D.C. that enables faculty to understand the research funding landscape and puts Illinois in a position to influence national scientific policy

5. Initiate a Geographic Strategy: From Local to Global

5.1 Build Partnerships within the Champaign-Urbana Community

The Goal: Redevelop Orchard Downs to become the site of a model community.

- 5.1.1 Develop Orchard Downs so that the first residents may move in by September 2011

The Goal: Partner with Champaign and Urbana schools to strengthen P-12 education

- 5.1.2 Assist the College of Education leadership in focusing on collaborating with local community schools to strengthen and model effective University-community partnerships
- 5.1.3 Develop "master teacher" positions in the College of Education to build and sustain connections between schools and campus (i.e., create Extension model in College of Education)
- 5.1.4 Expand and sustain the Chancellor's Academy for Teachers
- 5.1.5 Create initiative to enhance (a) math, science, and technology preparation for teachers, and (b) math, science, and technology learning opportunities for K-12 students

5.2 Engage National and International Partners

The Goal: Develop a strategic, coherent, and highly public presence in Chicago

- 5.2.1 Identify and strengthen focused, visible, and sustained engagement efforts that address Chicago's most pressing societal problems
- 5.2.2 Refocus and invigorate our Chicago recruitment strategy
- 5.2.3 Develop and implement a strategic communication plan that conveys the excellence and relevance of Illinois to the Chicago population

The Goal: Expand our institutional connection in key geographic areas

- 5.2.4 Build partnerships with Washington D.C. agencies to expand opportunities for student internship and advanced study placements
- 5.2.5 Create a branch office in Washing D.C. to connect our scholarly agenda with federal funding agencies and priorities
- 5.2.6 Increase the number of international students at Illinois through innovative University-industry partnership agreements
- 5.2.7 Strengthen the physical presence of Illinois research in Singapore
- 5.2.8 Increase the number of international undergraduate students in Illinois
- 5.2.9 Maintain the number and quality of graduate students at Illinois by actively pursuing changes in federal policies that create barriers to enrollment and attendance for potential international students