

College of
AGRICULTURAL SCIENCES

Strategic Plan 2005–2008

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PENNSSTATE



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EXECUTIVE SUMMARY

The goal of this planning cycle is to assert leadership and foster innovation through organizational improvement and change. Industry needs and societal needs are changing, and consumers are increasingly driving changes in the food, fiber, and natural resource systems in the Commonwealth and beyond. Our college is uniquely positioned to continually strive to meet these changing needs by virtue of our integrated missions of teaching, research, extension, and outreach. We feel that our college, more so than any other at Penn State, embodies Penn State's vision to be the nation's finest university in the integration of teaching, research, and service. Implementing the elements of this strategic plan—our road map for change—will position our college to be a worldwide center of excellence and to be viewed as creating the future that will serve the Commonwealth of Pennsylvania, the nation, and the world.

The 2002–2005 college strategic plan focused on financial issues, and we have made significant progress toward reallocation to address diminishing traditional funding sources. The 2005–2008 plan puts forth a new vision to achieve excellence. The centerpiece of our new vision is to organize teaching, research, and extension around three interrelated systems: (1) food and fiber system, (2) ecosystem, and (3) socioeconomic system. Through this approach, we see exceptional opportunities for collaboration, discovery, and advancement of our disciplines, as well as for training students who can work within and across these systems. An integral part of this vision is an unequivocal commitment to assure the relevance of our programs in meeting practical needs of our current and new stakeholders and to inform public policy through innovative, responsive, and cutting-edge research and education programs.

The four new goals of our 2005–2008 strategic plan are the first steps toward achieving our long-term vision. These goals are to (1) increase enrollment and enhance student success, (2) enhance knowledge discovery and translation, (3) strengthen meaningful communication and mutual education with current and new stakeholders, and (4) lead and manage the college as a system. Each goal has a number of measurable targets, strategies, and

actions and will help our college to attract students and train them to be tomorrow's leaders, to conduct the most promising research, and to provide the most effective and relevant educational programs through extension and outreach. Appendix A summarizes the key features of the 2005–2008 strategic plan.

The 2005–2008 college strategic plan was developed through an open and inclusive process with input from multiple stakeholder groups. The college has a strong track record of participatory planning, and this year we complemented the tradition by adding several additional avenues for direct stakeholder involvement. At the heart of this planning process were six study groups comprised of faculty and extension educators. Using a ten- to fifteen-year time horizon, the six groups identified opportunities for excellence both within and across college disciplines, and their reports are posted at <http://www.cas.psu.edu/strategicplanning/>. Furthermore, in spring 2004 the college surveyed graduating seniors, and during fall 2004 the college surveyed Pennsylvania agricultural industry representatives. Retreats were held with members of the Ag Council, Pennsylvania Council of Cooperative Extension Associations, and the Alumni Society to discuss study group recommendations. Survey results and notes from stakeholder retreats are posted at <http://www.cas.psu.edu/strategicplanning/External.html>. A core strategic planning team developed the first draft of the plan, which went through multiple revisions and was made available to all members of the college for input. Details of the college planning process are posted at http://www.cas.psu.edu/strategicplanning/ProcessPlanning_2.pdf/.

PROGRESS REPORT ON THE 2002–2005 STRATEGIC PLAN

The college has made major strides in accomplishing the strategic directions and specific goals of the 2002–2005 plan. Our new plan builds on these successes. Examples of goal achievement include the following:

- ☛ Extramural funding for college projects increased from an average of \$39 million per year in the previous planning period to an average of \$53 million per year during this planning period. Proposals involving college personnel increased from an average of 657 to an average of 705 per year.
- ☛ Despite budget reductions of \$6 million over the past several years and resultant recycling of more than 160 faculty, county educator, and support staff positions in the college, we still have managed to make strategic reinvestments in faculty and staff hires to cover critical support areas and, more importantly, to build areas of excellence such as chemical ecology and toxicology. In times of budget constraints, we consider these as bold moves to continue advancing the excellence of the college.
- ☛ Faculty hired during the 2002–2005 planning period address the priority areas identified in that strategic plan:
 - a. Enhancing profitability in the food and agriculture system (8)
 - b. Protecting water resources (1)
 - c. Improving forest management and use of wood products (3)
 - d. Ensuring agricultural biosecurity (3)
 - e. Strengthening families, youth, and communities (4)
- ☛ The college has actively participated in and leveraged faculty position and/or program support funding from The Huck Institute for Life Sciences; Penn State Institutes of the Environment; Children, Youth, and Families Consortium; The Social Sciences Research Institute; and Materials Research Institute.
- ☛ The college has developed, provided college funds, and named a director for The Environment and Natural Resources Institute of the College of Agricultural Sciences, which is poised for implementation.
- ☛ We have moved to an operating mode of “no entitlements” to resource allocation to units of the college. All position vacancies return to the dean to meet budget shortfalls and to make strategic reinvestments. Budget cuts are no longer across the board. Graduate assistantships were also reduced to meet deficits and a new system for allocating tuition grants-in-aid has been implemented.
- ☛ Teaching resources were reallocated to the animal sciences and forest resources to address student enrollment patterns.
- ☛ Cooperative extension has significantly increased funding from non-appropriated sources. Funding from grants and contracts has nearly doubled from \$10.5 million in FY2001–2002 to \$19 million in FY2003–2004. Gifts accounted for \$1.4 million in FY2003–2004, and in that same year fees enabled cost recovery of over \$600,000.
- ☛ To enhance organizational effectiveness, the cooperative extension regions have been reorganized from eight to six regions. A state dairy program leader has been named with the goal of strengthening our multidisciplinary, cross-functional focus on the dairy industry.
- ☛ The college’s Office of Conferences and Short Courses has been merged with our College Relations Office to enhance efficiency and to better meet college program goals and client needs.
- ☛ Major investments have been made in building our college’s Office of International Programs. Student, faculty, and staff involvement in international experiences has increased substantially, grant funding has grown significantly, and our international programs office is providing University-wide leadership in building intercollege collaborations.

FUTURE DIRECTIONS

- ☛ The college has spent considerable effort in developing a Plan for Diversity, which is publicly available at <http://diversity.cas.psu.edu/04ImplementPlan.pdf>. We continue to make substantial investments of money and personnel time to advance our progress on all aspects of diversity and climate issues of the college. Professional development of all our personnel has continued to be a top priority. Communication among faculty and staff and ways to enhance such interactions are being actively addressed.
- ☛ Efforts on undergraduate student recruitment are starting to pay off in several majors. Over the past three years, enrollments have grown from 71 to 122 in agribusiness management, from 62 to 67 in food science, and from 109 to 126 in the landscape contracting majors. However, much more work is needed, and we address this in our new plan.
- ☛ The student scholarship and awards program has grown from \$1,417,851 awarded to students in 2001–2002 to \$1,563,593 awarded to students in 2004–2005—a 10.3 percent increase in three years.
- ☛ A Web-based survey of students was developed and is administered each semester to graduating seniors to assess student satisfaction and outcomes realizations.
- ☛ As a result of a series of workshops on “infusing multiculturalism into the curriculum,” faculty included multicultural learning activities in at least eight existing course syllabi.
- ☛ A new course, SPAN 105: Spanish for the Ag Industry, was developed and is being offered each semester through the Department of Spanish, Italian, and Portuguese.

“Report Cards” with additional details on performance indicators associated with the goals of the 2002–2005 plan are presented in Appendix B. Appendix C provides a longer-term summary of college efforts to increase income and cost savings.

Early in the current planning process we studied the college’s performance on the 2002–2005 goals and strategies, as well as internal and external challenges that we believe will affect the successful implementation of new goals. We have identified five strategic issues that need to be resolved to enhance our effectiveness:

- ☛ How can we allocate resources among traditional production agriculture and other new or related areas that are of importance in meeting current and anticipated stakeholder needs?
- ☛ How do we attract increasing numbers of high-quality students and produce graduates that meet the needs of an evolving career marketplace?
- ☛ How do we enhance engagement between stakeholders and the college to provide an ongoing dialogue that informs and guides public policy?
- ☛ How do we engage in program renewal to redefine our relevance to society and potential students?
- ☛ How do we enhance integration across our functions?

Our peers across the nation are facing similar strategic issues, and we believe Penn State is well positioned to lead in resolving these issues. As we look ahead, and in the context of our new strategic plan for 2005–2008, we consider the following key elements to advancing our college:

1. The essential need to enhance collaboration within and outside of the college as part of our systems approach.
2. The high priority of undergraduate student recruitment and making our programs and majors more relevant and appealing.
3. The need to project the college in a new light while still being responsive and relevant to both present and new stakeholders.
4. Continued reference to the six study group reports in the college’s decision-making process.
5. Continued very selective investment and reallocation in tight budget times to areas of excellence and elements of this strategic plan.
6. Continued strong commitment to University initiatives.

MISSION, CORE VALUES, AND VISION

7. Commitment to the college's human resources, including diversity and climate issues and professional development and mentoring of all employees.

The first three elements relate to the priority needs and expectations of our external stakeholders, and the last four derive from internal stakeholder recommendations. All seven issues are interdependent and will require focused discipline for achievement. Recent interaction with stakeholders has reinforced the urgency with which many of them view the need for the college to take an even more active role in identifying science-based solutions to ensure the vitality of the state's food and fiber sector. As one external stakeholder said, "We want you to 'capture the science' to help us make better decisions." This comment articulates the unique niche we have within the University and the Commonwealth, and our new strategic plan illustrates the way in which we envision strengthening our contribution to this niche.

Mission

The mission of Penn State's College of Agricultural Sciences is to discover, integrate, and disseminate knowledge to enhance the food and agricultural system, natural resource and environmental stewardship, and economic and social well-being, thereby improving the lives of people in Pennsylvania, the nation, and the world.

Core Values

- ☛ Excellence and productivity in the scholarship of resident education, research, and extension/outreach
- ☛ Creativity, innovation, and openness to change
- ☛ Stakeholder engagement and responsiveness to emerging issues
- ☛ Access to information and knowledge to facilitate lifelong learning for all Pennsylvania residents
- ☛ Interdisciplinary, cross-functional collaboration and communication to solve complex problems for the common good
- ☛ Dedication to diversity, multicultural understanding, and cross-cultural competence
- ☛ An atmosphere of mutual respect that promotes listening, openly sharing ideas and viewpoints, and debating issues and concerns
- ☛ The highest standards of integrity, honesty, shared responsibility, and mutual accountability
- ☛ Commitment to our employees and an environment that nurtures personal and professional growth and development

Vision

Penn State's College of Agricultural Sciences aspires to be the regional, national, and international leader in understanding the natural and human systems underlying agricultural sciences, translating that understanding to enhance quality of life, and educating the leaders of today and the future. We will organize our approach to teaching, research, and extension/outreach around three inter-related systems: food and fiber system, ecosystem, and socioeconomic system.

This renewed vision for our college was derived from the findings of the six faculty/extension educator study groups. Their work emphasized that continuing and expanded collaborations within our college and with other colleges, consortia, institutes, and units of the University are an essential component to realizing our vision for the college. Crucial to this effort will be cross-disciplinary teams that speak and understand each other's languages and can work together to develop new approaches to maximizing system productivity, economic development, and sustainability. These teams include disciplines both within our college and across the University such as biology, computer science, chemistry, engineering, mathematics, sociology, economics, and education. Due to our successful record in developing collaborative initiatives within our college, with the University at large, and with external agencies, we are in a strong position to achieve our vision. As our college continues to pursue excellence in this kind of teamwork, we will train future agricultural scientists and practitioners so that a new generation will find these team interactions second nature.

To achieve our vision we recognize and validate that the college must move toward an approach where resident education, research, and extension/outreach activities are organized around three dominant and interrelated systems. Capitalizing on this approach requires a thoughtful balance between fundamental and applied science and between disciplinary and interdisciplinary excellence.

Each of the three systems described in our vision statement is unique to the college's mission wherein teaching, research, and extension/outreach are truly integrated, wherein our work, including the most fundamental research, seeks relevance and practical application, and wherein these systems are interrelated. At the interface of these systems we see exceptional opportunity to collaborate, discover, and advance the frontiers of our disciplines. We will discover how the systems interact to produce products, communities, and economies, and will transform this knowledge into management tools that will support our stakeholders in achieving economic success, quality of life, and environmental sustainability.

Food and Fiber System

Historically, the college has had considerable strength in teaching, research, and extension programming in the production and processing of food and wood products. Over time, U.S. agriculture has evolved from a producer-driven system to a decidedly consumer-driven system. We will continue to provide science-based research and educational materials to the producers of agricultural and food commodities. However, we recognize significant opportunities to serve our long-standing stakeholders by better serving the consumers of agricultural products, whether through providing nutrition education, by assisting local governments with land-use decisions, or by helping producers develop and find new markets for value-added products. The need to better integrate activities through a food and fiber systems approach is best illustrated by the fact that Pennsylvania's food processing and manufacturing segment represents approximately five times (\$20B) the value of farm gate production (\$4B) of agricultural goods. Likewise, the wood products and paper industries of the Commonwealth account for over \$15 billion in sales annually (Source: Economic Census for Pennsylvania and Pennsylvania Agricultural Statistics). Pennsylvania remains strategically situated relative to consumer markets and remains the leading food processing and manufacturing state in the region and one of the leading states in the nation. Similar competitive opportunities exist for wood products.

The food and fiber system includes five broad components: (1) agricultural and forest production, (2) processing and manufacturing, (3) wholesaling and distribution, (4) retailing and food service, and (5) consumers. Each component of the system serves to add value to the materials acted upon. Rather than view the system solely as something with a directional flow of materials, we may also view the system as a means for the consumer to exercise control of that flow.

A significant opportunity for our college—the potential for developing and accepting biobased resources—exists at the interface of the food and fiber, ecosystem, and socioeconomic systems. Biobased resources are renewable and can be used to produce a variety of value-added materials in addition to their well-recognized importance as

alternative energy sources. The agricultural industry has been identified as a key source of biobased resources. Our college can be a catalyst in expanding Penn State's educational and research opportunities in biobased systems. In our vision for biobased products, we can contribute in areas such as novel uses for wood and other plant-based materials; development of new products for human, animal, and plant health and nutrition; biobased fuels and lubricants; and a variety of biomimetic (materials designed to mimic biological characteristics) products and devices. A biobased economy also provides new opportunities for rural communities and will require science-based policy decisions, both of which we are well positioned to lead. We will endeavor to enhance linkages with the Materials Research Institute and campus-wide energy initiatives while taking a strong role in regional and national efforts within the land-grant community.

Ecosystem

The interactions of humans with the environment—from agricultural production to natural resource utilization to response by local communities to increased suburbanization—are best characterized and studied at the level of the landscape and ecosystem. Ecosystems, which are subdivisions of landscapes, can be areas as large as a forest or the Chesapeake Bay Watershed or as small as a single farm or even the rhizosphere of a single plant. The college has decades of experience in team-based approaches to addressing complex problems at these various scales. A systems focus on ecosystems employs this long-standing capacity and provides a framework for identifying the challenges and opportunities that face us in the future. It further recognizes that much of our work is in ecosystems and landscapes where the presence of human activity has had a significant effect on the natural interactions of the biological and physical world.

Pennsylvania possesses substantial natural and agricultural resources. Our ability to sustainably and profitably manage these resources into the future dictates that we continue to seek and disseminate science-based solution sets to both existing and emerging challenges. For example, despite years of research on water resources, nutrient issues, and wildlife management, additional answers are still needed. The growth of Pennsylvania's human popu-

lation, accompanied by a change in how that population is distributed, has created new challenges in land use that necessitate the distribution of new information. The college will focus on assembling interdisciplinary teams to teach, conduct research, and solve problems in ecosystems.

We will use our expertise to help citizens of the Commonwealth, nation, and world balance biodiversity and ecological sustainability with production and economic viability. The college's strengths in plant and animal production; natural resource issues involving forests, watersheds, and wildlife; invasive species; geospatial analysis; environmental microbiology; and community vitality enable us to address critical questions as diverse as preserving air and water quality and making informed land-use decisions. Our teams will unite biology and chemistry with sociology and economics in search of answers to practical problems in resource (e.g., food, fiber, open space) management. Underlying our practical solutions will be solid science that derives from research ranging from the molecular to organismic to ecosystem to landscape levels. We expect that our efforts will contribute to advancing science, solving real-world problems, and crafting policies to guide future decisions.

Socioeconomic System

Humans form socioeconomic systems that are outgrowths of and dependent on the environment in which they live. Their consumption choices (food, clothing, housing, etc.), health, education, employment, quality of life, and ability to cope economically vary depending on their sociodemographic characteristics and are affected by the communities in which they live. Communities in turn are strongly affected by socioeconomic forces that play out at the local, regional, and global levels. A socioeconomic system has three levels: (1) individual and household, (2) local community and regional economy, and (3) the various levels of government where policies related to food, land use, and economic and social development affect human outcomes.

With our substantial expertise in fundamental research and our extension capacity, we have the opportunity to strengthen all three socioeconomic system levels. This strengthening needs to occur at multiple levels and must

GOALS, MEASURABLE TARGETS, STRATEGIES, AND ACTIONS

involve faculty and educators working in the local, regional, national, and even international arenas. At the individual, household, local community, and regional economic levels we partner with other Penn State organizations such as the Social Science Research Institute (SSRI), the Population Research Institute, and the Colleges of Health and Human Development and Education; external to Penn State we partner with various state and regional entities to examine and propose solutions to a wide range of social and economic problems. Examples of the problems addressed include implications and impacts of environmental policies on agriculture and natural resources; impacts of government policies and economic and social forces on communities, agriculture, and land uses; implications of demographic change (e.g., aging); impacts of global and technological forces on the economy, families, communities, and the workforce; causes of rural poverty; declines in the younger generation's civic engagement; alcohol, tobacco, and other drug use; childhood obesity; enhancement of K–12 learning; and out-of-school programming for youth. We will strive to seek additional partners to address these and new emerging issues.

At the policy level, we use our science-based expertise to work with county, state, and federal government to ensure that public policy decisions are made based on sound scientific knowledge. The scholarship exercised within these systems also is integral to examining the issues and forces that drive and affect functioning of both the food and fiber system and the ecosystem.

Our goals indicate the long-term direction we intend to take to achieve the newly refined college vision. Our goals have changed from the 2002–2005 plan due to significant current and anticipated changes in our environment. For each goal we identify a small number of strategies, which we define as the means by which we will achieve our goals. At this level we will assign specific accountability for implementation. Each strategy includes actions that we have identified as short-term activities to implement the strategy. These are likely to change more frequently as we modify our efforts to respond to future challenges. To help ensure and determine successful implementation, we have identified a small number of measurable targets. These articulate the outcome we desire from goal achievement. When setting targets for growth we considered current capacity and identified areas where we need to build additional capacity.

We continue to ensure that college goals are aligned with the goals of the University, which are to (1) enhance academic excellence through greater support of high-quality teaching, research, and service; (2) enrich the educational experience of all Penn State students by becoming a more student-centered University; (3) build a more considerate and civil University community; (4) serve society through teaching, research, and service; and (5) develop new sources of income and reduce costs through improved efficiencies.

Goal A. Increase enrollment and enhance student success

Of prime importance to the success of our college is the need to increase enrollment and ensure retention and placement of our students. To do this we will need to enhance programs so that they are more attractive to potential students. For the College of Agricultural Sciences, the student population includes undergraduate and graduate students, as well as our population of lifelong learners. Beneficiaries of improvements that help ensure student success include the employers that hire college graduates, as well as graduate schools that enroll our graduates.

Our goal to enhance student success relates to University goals 1, 2, and 4; the focus of the University's self-study for reaccreditation; and President Spanier's initiatives on world campus/resident education curriculum revitalization, K–12 partnerships, and faculty-to-student ratios.

Measurable Targets

- ☛ Increase undergraduate enrollment by 5 percent each year for three years to reach 2,350 students by fall 2008.
- ☛ Increase graduate enrollment by 5 percent each year for three years to reach 545 students by fall 2008.
- ☛ Increase funding for student scholarships by 30 percent over three years to \$2 million per year.
- ☛ Increase student achievement of program learning objectives.
- ☛ Increase student, employer, and alumni satisfaction measures.
- ☛ Increase GRE and SAT scores of incoming graduate and undergraduate students.
- ☛ Increase enrollment in lifelong learning programs.

Strategies and Actions

1. Increase efforts to recruit and retain a high-quality and diverse pool of undergraduate and graduate students.
 - ☛ Reach out to wider/nontraditional student audiences.
 - ☛ Involve all county extension offices in the recruitment process.
 - ☛ Enhance and increase faculty and extension educator working relationships with campus colleges to include faculty contact with students interested in University Park programs.
 - ☛ Intensify efforts to establish relationships with high school teachers and high school guidance counselors and ensure their understanding of the wide breadth of careers available to college graduates.
 - ☛ Enhance faculty and staff resources devoted to recruitment in units and at the college level where appropriate.
 - ☛ Intensify college marketing efforts to increase awareness of program relevancy through a partnership with Penn State's Public Relations

and Enrollment Management units.

- ☛ Target new scholarships to first-year students whenever possible.
 - ☛ Sponsor precollege activities (e.g., competitions, camps, workshops, and symposia) that provide college visibility to prospective students.
 - ☛ Explore the value of changing the name of the college.
2. Revitalize undergraduate and graduate curricula in new and emerging areas that are consistent with the three systems, starting with the programs identified in the faculty study group reports.
 - ☛ Assess curricula for relevance to market needs and revise accordingly.
 - ☛ Assess student learning outcomes to ensure mastery of program objectives.
 - ☛ Plan and implement actions to enhance the excellence and effectiveness of all graduate programs.
 - ☛ Ensure curricular integrity across campuses and delivery systems in accordance with the recommendations of the University's self-study for reaccreditation.
 3. Provide relevant programs to increase enrollment in our cooperative extension programs, conferences and short courses, and other lifelong learning opportunities.
 - ☛ Increase enrollment in youth programs such as 4-H, after-school programs, and other youth-development activities.
 - ☛ Improve programs that appeal to urban and suburban audiences (e.g., companion animals and horticulture).
 - ☛ Increase the number and quality of conferences and short courses offered through the college.
 - ☛ Increase collaborative programming with campus colleges to include faculty engagement with extension and other outreach programs.

4. Enhance student learning through dynamic experiences, including internships, research, service learning, and international study.
 - ☛ Ensure that all of our undergraduates enrich their education and professional development by placement in at least one internship/cooperative learning or international experience.
 - ☛ Continue to modify courses to enhance intercultural and international understanding in accordance with the 2004 Faculty Senate resolution in order to increase awareness of and respect for diverse cultures and perspectives.
 - ☛ Provide students with opportunities to develop leadership capacity.
5. Devise new ways of reaching current and potential resident, distance, and extension students through technology and alternate scheduling.
 - ☛ Continue to redirect resources to enable the expansion of e-learning initiatives.

Goal B. Enhance knowledge discovery and translation

The pace of change in our society and the imperatives of our land-grant mission demand that the college anticipate and identify emerging issues important to Pennsylvanians and the world so we can use our expertise and intellectual resources to address them. At the same time, we need to be an international leader in interdisciplinary, fundamental research that in the longer term may provide answers to complex problems. Examples of the college’s role in translating world-class research to local solutions include our engagement with the College of Health and Human Development and Hershey Medical College in obesity research, with the College of Education in K–12 partnerships, with the Eberly College, Huck Institute, and Institutes of the Environment in disease modeling, and with other U.S. and foreign institutions in USAID-sponsored efforts to deliver environmentally and economically sound pest management solutions to agricultural producers in developing nations. We feel that many opportunities remain for us to continue along this trajectory.

Our goal to enhance knowledge discovery and translation relates to University goals 1, 2, and 4.

Measurable Targets

- ☛ Increase our extramural funding totals at a rate of 5 percent per year.
- ☛ Increase the number of faculty publications.
- ☛ Increase the number of college-initiated invention disclosures from ten to fifteen per year.

Strategies and Actions

1. Reallocate resources to facilitate the creation of world-renowned centers of excellence.
 - ☛ Focus hiring to enhance discovery and translational research capacity in areas of excellence.
 - ☛ Conduct benchmarking to determine our standing amongst our peers.
2. Integrate research more thoroughly with resident and extension education.
 - ☛ Increase translational research by assembling and rewarding productive teams of research and extension professionals.
 - ☛ Increase undergraduate student experiences in research programs and extension/outreach activities.
 - ☛ Focus the college seed grant program to target research proposals that integrate resident and extension education into research.
3. Link with other colleges, institutes and consortia, agencies, and universities nationally and internationally to solve problems.
 - ☛ Complement gaps in our systems approaches through collaboration with other colleges and universities.
 - ☛ Continue to aggressively participate in cofunded positions and programs.
 - ☛ Establish and build on existing partnerships with government agencies.
4. Continue to broaden our funding portfolio in grants and contracts.
 - ☛ Expand the college’s proportion of funding in the University Research Consortia.
 - ☛ Contribute to Penn State’s commercialization of research.
 - ☛ Increase the number of grant proposals.

Goal C. Strengthen meaningful communication and mutual education with current and new stakeholders

Anticipating and responding to changing state, national, and international trends are crucial to the success of our stakeholders and therefore to the long-term vitality and sustainability of the college. We need to continually improve the way in which we translate the knowledge we have generated into accessible and useful formats for agricultural producers, consumers, legislators, citizens, employers, public officials, and other current and new stakeholders. We should provide our stakeholders with regular updates on state, regional, and international trends, including demographic and economic trends. We need to listen to current and new stakeholders to determine their perceptions, needs, and expectations. Open, meaningful communication and mutual education will facilitate the collaborative development of responsive research portfolios. This will in turn help ensure effective dissemination and marketing of solutions and the development of public policies that are informed by science.

The demographic profile of Pennsylvania residents has changed, and we see new opportunities to meet the needs of suburban and urban residents whom we previously may not have reached. A Metro Research and Outreach Center strategically located in the Commonwealth would provide a focus for the college to unite our educational, research, and extension and outreach programs with synergistic resources available within campus colleges and the Colleges of Health and Human Development, Medicine, Education, and Engineering to better meet the needs of our suburban and urban residents. Reaching suburban and urban residents would also facilitate the college's efforts to educate the nonfarming public about agricultural issues, such as food and fiber production, farmland preservation, and land-use considerations, that are vital to all of our futures.

This goal addresses President Spanier's priorities of K–12 and social science initiatives and relates to University goal 4.

Measurable Targets

- ☞ Increase stakeholder satisfaction measures.
- ☞ Increase the number of venues through which stakeholders can provide feedback to the college.

Strategies and Actions

1. Design and implement systematic stakeholder engagement and share assessment results broadly throughout the college to inform program priorities as well as change and renewal efforts.
 - ☞ Expand opportunities for current and new stakeholders to provide strategic advice to the college in areas such as program priorities, resources for additional funding, performance assessment, and accountability.
 - ☞ Involve researchers in interaction with current and new stakeholders through outreach programs and professional and public service activities.
2. Improve the college's dissemination of research results to ensure that both external and internal stakeholders are fully informed of results and their impact on economic viability.
 - ☞ Enhance Web-based materials to ensure that resources are more readily available.
 - ☞ Encourage opportunities for extension educators to be meaningfully involved in appropriate research activities.
 - ☞ Create opportunities to cross-fertilize department interests, including the establishment of an annual college scientific conference to allow us to enhance synergy between initiatives.
3. Enhance strategic, cross-functional partnerships with current and newly identified stakeholders.
 - ☞ Establish a Metro Research and Outreach Center.
 - ☞ Expand the college's contribution to agricultural literacy initiatives.
 - ☞ Expand partnerships with diverse audiences and appropriate international entities.
 - ☞ Survey program recipients to assess impact of extension recommendations and determine ways to increase satisfaction.

4. Enhance recognition, reporting, and distribution of the impact of our programming, especially highlighting the combination of our research and extension functions.
 - ☛ Implement the College of Agricultural Sciences Planning and Reporting (CASPAR) system to facilitate capture of outcomes and impacts of college programs.
 - ☛ Subject to USDA policies, submit the next federal plan of work for research and extension as an integrated document, which will result in integrated impact reporting in the annual report of results to USDA.
 - ☛ Encourage research faculty to submit multi-investigator, multidisciplinary Agricultural Experiment Station project proposals to more accurately reflect the systems approach they are taking to research problems.
 - ☛ Identify new venues and mechanisms for disseminating success stories that document the impact of our programs.

Goal D. Lead and manage the college as a system

As we work toward achieving our vision, we must place emphasis on leading and managing the college as a system. Viewing the college as a system means that we all understand the interdependencies that exist between our faculty, students, and stakeholders and we recognize that the system is responsive to stakeholder needs and expectations. Improvement is accomplished through designing and redesigning processes and other key parts of the system, and to achieve improvement we must ensure effective planning and stakeholder communication.

We recognize that our college leaders must reinforce systems thinking and interdependencies on a daily basis. We will strive to ensure that decision making and resource allocations optimize the system as a whole to strengthen our collective ability to meet stakeholder needs and expectations.

The goal of leading and managing the college as a system contributes to University goals 3 and 5 as well as President Spanier's priority to enhance fund-raising.

Measurable Targets

- ☛ Enhance cost savings and cost avoidance.
- ☛ Enhance nonstate revenue.
- ☛ Increase faculty/staff satisfaction with the college climate.
- ☛ Increase the amount of funding allocated to strategic initiatives.

Strategies and Actions

1. Institutionalize change and renewal through ongoing assessment and planning as recommended in the University self-study for reaccreditation.
 - ☛ Work together to ensure that college and departmental plans are well integrated.
 - ☛ Set priorities for implementing the strategies and actions in the 2005–2008 plan.
 - ☛ Facilitate use of stakeholder data on needs, expectations, and satisfaction.
 - ☛ Streamline administrative processes to achieve time and cost savings.
2. Assess and strengthen leadership and decision-making processes.
 - ☛ Continue reallocating college resources toward the strategic elements of this plan. There will be no entitlements in the new system. Human and financial resources will be allocated according to how they best contribute to the systems in question.
 - ☛ Assess and streamline the college structure to align with the college vision.
 - ☛ Emphasize opportunities for efficiencies while moving forward on college-wide computing and information systems management.
 - ☛ Implement systematic internal communication so that all college employees are well informed of college priorities.
3. Enhance orientation, professional development, and mentoring for all employees.
 - ☛ Continue to ensure that all employees have equitable access to professional development opportunities.

FACILITIES AND LAND PLAN

4. Increase efforts to ensure a diverse, inclusive, and supportive work environment for all members of the college including faculty, staff, and students.
 - ☛ Recognize and reward individuals and units for collaborations with diverse audiences.
 - ☛ Continue efforts to enhance the college work climate.
5. Diversify and enhance the college's funding portfolio to ensure adequate resources for strategic change.
 - ☛ Increase funding raised through development efforts.
 - ☛ Establish additional cost-recovery mechanisms and new funding partnerships for extension services, positions, and programs.
6. Improve the correspondence between the faculty and staff reward system and strategic priorities.
 - ☛ Continue efforts to create a new evaluative paradigm for professional advancement.

Construction of the new Forest Resources Building and the new Food Science Building began in fall 2004; the Forest Resources Building was begun several months before the Food Science Building. However, both projects should be completed in 2006 and will be major state-of-the-art assets to greatly enhance our teaching, research, and extension and outreach programs.

The School of Forest Resources will move from Ferguson Building into the new building and the college will retain Ferguson. Planning has begun for a major renovation of Ferguson, and initial plans are to relocate the Department of Agricultural and Extension Education and, if space allows, several other college programs. Funding for this renovation is part of the University's five-year Capital Plan.

The completion of the Life Sciences I Building in 2004 is of major significance to our college as a number of our faculty have been assigned space in the building and the opportunities for collaboration are exciting. A new Life Sciences II Building is included in the University Capital Plan. This building holds great promise for helping our college as well.

Development efforts and planning continue for the University Arboretum. A new turfgrass research and education center for the college is part of the overall University Arboretum plan. This turfgrass center will consolidate four separate turf areas and facilities in the Department of Crop and Soil Sciences. In addition, we will continue to explore opportunities for environmental education and outreach such as the recently completed Air Quality Learning and Demonstration Center in the University Arboretum.

The following additional major projects are among planning priorities for the college and will be proposed as part of future University Capital Plans:

- ☛ Renovation of Henning Building and addition to Henning/Agricultural Sciences and Industries Complex

THREE-YEAR INTERNAL RECYCLING PLAN

- ☛ Renovation of Agricultural Engineering Building
- ☛ Addition of biosafety level-3 laboratory capacity for plant, animal, and microbe studies in the college and/or in Life Sciences II
- ☛ Renovation of greenhouses adjacent to Tyson Building
- ☛ Construction of a new Meats Laboratory
- ☛ Further renovation of Chemical Ecology Laboratory

Agricultural and forest lands are essential to carrying out the education and research missions of our college. Having facilities easily accessible to faculty, students, and staff and having land areas adjacent to these facilities are important. Some college lands have been needed for other University uses such as road construction, constructed wetlands to handle roadway and parking area runoff, airport expansions, parking lots, retirement facility, ambulance facility, wellhead protection, baseball stadium, and football parking. The University and college have been working together closely to consider future needs for land and forest lands for the college. Since 1997, several properties have been purchased near University Park and at Rock Springs to help the college. The most recent land purchase was 50 acres of excellent farmland adjacent to our Southeast Agricultural Research and Extension Center in Landisville, Lancaster County. Additional farmland and forested areas, contiguous to present University lands north of the University Airport, are of strategic interest to the college for the long-term needs of our animal science, plant science, and forest science teaching and research programs.

In preparation for the next revision of the 1999 University Master Plan, the University has asked several groups within the University, including the College of Agricultural Sciences, to review their open spaces, associated facilities, and needs for the future at University Park, including areas out to I-99. This study will help position our college for the future. Having adequate amounts of farm and forest land and having these lands located where they are accessible for our students, faculty, and staff to conduct education and research programs will be essential for the strategic directions of the college.

College programs have been affected by two recycling efforts. One was determined by the University and the other was initiated by the college to address funding shortfalls within the state and federal appropriations supporting our research and extension programs. Unlike other colleges, we receive no tuition dollars to support these programs. Therefore, tuition increases have not helped resolve our continuing funding shortfall for these programs.

The University-imposed recycle target is \$145,417 per year for three years for a total of \$436,251. This amount is 1 percent of our net operating budget for teaching. The college has identified this amount from the teaching portion of anticipated faculty vacant positions. The \$436,251 will be used for faculty hires and program support in systems-related areas recommended in the faculty study group reports.

The college recycling programs addressing appropriation shortfalls for research and extension have been much more burdensome. Since 2001–2002 the college has recycled \$10,844,000. Mandated salary adjustments and fringe benefit increases have exceeded appropriation increases by \$6,712,000 during this period. The remaining recycling dollars have been and will continue to be strategically reallocated and reinvested. These reinvestments of college funds for faculty hires have been leveraged to gain significant matching funds from the Penn State Institutes of the Environment, Children, Youth, and Families Consortium, The Huck Institute for the Life Sciences, the Provost's Opportunity Fund, and the Provost's Special Initiatives Fund. Significant matches have also been gained from county governments to cost-share reinvestment in county extension educator positions of strategic importance.

CONCLUSION

We believe that the goals, strategies, and actions outlined in this plan will facilitate significant movement toward achieving our vision over the next three years. We have the benefit of committed employees and external stakeholders to partner with the college in implementation efforts. The College of Agricultural Sciences at Penn State is positioned to strengthen our role in leading the disciplines of agricultural sciences to new heights of excellence.

APPENDIXES

Appendix A. College of Agricultural Sciences Strategic Plan 2005–2008

Mission

The mission of the College of Agricultural Sciences is to discover, integrate, and disseminate knowledge to enhance the food and agricultural system, natural resource and environmental stewardship, and economic and social well-being, thereby improving the lives of people in Pennsylvania, the nation, and the world.

Vision

Penn State's College of Agricultural Sciences aspires to be the regional, national, and international leader in understanding the natural and human systems underlying agricultural sciences, translating that understanding to enhance quality of life, and educating the leaders of today and the future. We will organize our approach to teaching, research, and extension/outreach around three interrelated systems: food and fiber system, ecosystem, and socioeconomic system.

Core Values

- Excellence and productivity
- Creativity, innovation, and openness to change
- Stakeholder engagement and responsiveness
- Lifelong learning
- Interdisciplinary, cross-functional collaboration
- Diversity and multicultural understanding
- Mutual respect, integrity, and honesty
- Shared responsibility and mutual accountability
- Commitment to our employees and mission



Goal A

Increase enrollment and enhance student success

Goal B

Enhance knowledge discovery and translation

Goal C

Strengthen meaningful communication and mutual education with current and new stakeholders

Goal D

Lead and manage the college as a system

Measurable Targets

- Increase undergraduate and graduate enrollment by 5% per year
- Increase funding for scholarships to \$2M
- Increase student achievement of program learning objectives
- Increase student, employer, and alumni satisfaction measures
- Increase GRE and SAT scores of incoming graduate and undergraduate students.
- Increase enrollment in lifelong learning programs

Strategies & Actions

1. Recruit and retain a high-quality and diverse pool of undergraduate and graduate students.

- Reach out to wider/nontraditional student audiences
- Integrate county extension offices into recruitment process
- Increase faculty and extension educator working relationships with campus colleges
- Intensify efforts to establish relationships with high school teachers and guidance counselors
- Enhance faculty and staff resources devoted to recruitment
- Intensify college marketing efforts to increase awareness of program relevancy
- Target new scholarships to first-year students
- Sponsor precollege activities for visibility
- Explore value of changing college name

2. Revitalize curricula, starting with study group recommendations.

- Assess curricula for relevance to market needs and revise accordingly
- Assess student learning outcomes
- Plan and implement actions to enhance graduate programs
- Ensure curricular integrity

3. Provide relevant programs to increase enrollment in lifelong learning.

- Increase enrollment in youth programs
- Enhance program appeal to urban and suburban audiences
- Increase number and quality of conferences and short courses
- Increase collaborative programming with campus colleges

4. Enhance student learning through dynamic experiences.

- Ensure that all undergrads enrich education and professional development by placement in at least one internship/coop. or international experience
- Continue to modify courses to enhance intercultural and international understanding
- Provide students with leadership development

5. Devise new ways of reaching resident, distance, and extension students through technology and alternative scheduling.

- Continue to redirect resources to enable the expansion of e-learning initiatives

Measurable Targets

- Increase our extramural funding totals by 5% per year
- Increase the number of faculty publications
- Increase the number of college-initiated invention disclosures from 10 to 15 per year

Strategies & Actions

1. Reallocate resources to facilitate the creation of world-renowned centers of excellence.

- Focus hiring to enhance discovery and translational research capacity in areas of excellence
- Conduct benchmarking to discern our standing amongst our peers

2. Integrate research with resident & extension education.

- Increase translational research by assembling and rewarding productive teams of research and extension professionals
- Increase undergraduate student experiences in research programs and extension/outreach activities
- Focus college seed grant program to target research proposals that integrate resident and extension education

3. Link with other colleges, institutes and consortia, agencies, and universities nationally and internationally to solve problems.

- Complement gaps in our systems approaches through collaboration
- Continue to aggressively participate in cofunded positions and programs
- Establish and build on existing partnerships with government agencies

4. Continue to broaden our funding portfolio in grants and contracts.

- Expand the college's proportion of funding in University Research Consortia
- Contribute to Penn State's commercialization of research
- Increase the number of grant proposals

Measurable Targets

- Increase stakeholder satisfaction measures
- Increase the number of venues through which stakeholders can provide feedback to the college

Strategies & Actions

1. Design and implement systematic stakeholder engagement and share assessment results broadly throughout the college.

- Expand opportunities for current and new stakeholders to provide strategic advice
- Involve researchers in interaction with current and new stakeholders through outreach programs, professional and public service activities

2. Improve the college's dissemination of research results.

- Enhance Web-based materials to ensure that resources are more readily available
- Encourage opportunities for extension educators to be meaningfully involved in appropriate research activities
- Create opportunities to cross-fertilize department interests, including an annual college scientific conference

3. Enhance partnerships with current and newly identified stakeholders.

- Establish a Metro Research and Outreach Center
- Expand the college's contribution to agricultural literacy initiatives
- Expand partnerships with diverse audiences and appropriate international entities
- Survey program recipients to assess impact of extension recommendations

4. Enhance recognition, reporting, and distribution of the impact of our programming.

- Implement the research component of the CASPAR integrated reporting system
- Integrate research and extension in the next federal plan of work
- Encourage research faculty to submit multi-investigator, multidisciplinary Ag Experiment Station project proposals
- Identify new venues and mechanisms for disseminating success stories documenting program impact

Measurable Targets

- Enhance cost savings and cost avoidance
- Enhance nonstate revenue
- Increase faculty/staff satisfaction with the college climate
- Increase the amount of funding allocated to strategic initiatives

Strategies & Actions

1. Institutionalize change and renewal through ongoing assessment and planning.

- Work together to ensure that college and departmental plans are well integrated
- Set priorities for implementing strategies and actions in 2005–2008 plan
- Facilitate use of stakeholder data on needs, expectations, and satisfaction
- Streamline administrative processes to achieve time and cost savings

2. Assess & strengthen leadership and decision-making processes.

- Continue reallocating college resources as they become available to strategic priorities
- Assess and streamline the college structure to align with the college vision
- Emphasize opportunities for efficiencies while moving forward on college-wide computing and information systems management
- Implement systematic internal communication

3. Enhance orientation, professional development and mentoring for all employees.

- Continue to ensure that all employees have equitable access to professional development opportunities

4. Increase efforts to ensure a diverse, inclusive, and supportive work environment for all.

- Recognize and reward individuals and units for collaborations with diverse audiences
- Continue efforts to enhance the college work climate

5. Diversify and enhance the college's funding portfolio to ensure adequate resources for strategic change.

- Increase funding raised through development efforts
- Establish additional cost-recovery mechanisms and funding partnerships for extension services

6. Improve the correspondence between the faculty and staff reward system and strategic priorities.

- Continue efforts to create a new evaluative paradigm for professional advancement

Appendix B: Report Cards for the 2002–2005 Strategic Plan

Goal A Report Card

Goal A: Enhance the learning experience to develop our students into productive contributors to society at the local, national, and international levels as they engage in intellectual, cultural, social, and professional endeavors.

1. Number of Applicants, Yield Rate, and Enrolled Students

Number of Students in the Admissions Pool

Year	First-Year	Provisional to Degree	Total
2002	946	18	964
2003	909	11	920
2004	921	5	926

Number of Students in Paid-Accept Status

Year	First-Year	Advanced-Standing	Provisional to Degree	Total
2002	431	82	7	520
2003	435	60	11	506
2004	408	58	4	470

Number of Graduating Students

Year	Baccalaureate	Associate	Total
FA01/SP02/SU02	447	52	499
FA02/SP03/SU03	420	53	473
FA03/SP04/SU04	395	48	443

Total Enrollment

Year	University Park*	Other Campuses	B.S.	Assoc.	Certif.	Total
2002	1,609	578	1,996	130	61	2,187
2003	1,592	578	1,983	124	63	2,170
2004	1,572	528	1,926	120	54	2,100

* Includes certificate program enrollment.

2. Course and Program Innovations Offered

- Faculty infused multicultural learning activities into the following courses: ANSC 001, ANSC 211, SOILS 101, AG 150S, AG 160GH, AGBM 101, AEE 311, AEE 465, and others.
- New student orientation included a series of weekly seminars on internationalizing the undergraduate experience, internships, and undergraduate student research opportunities.
- A new course, SPAN 105: Spanish for the Ag Industry, was developed and offered through the Department of Spanish, Italian, and Portuguese.

- As part of the LEAP program, first-time students were enrolled in AG 294: Student Research and mentored by faculty scientists.
- A new course, YFE 211: Foundations: Civic and Community Engagement, was created to teach public scholarship and provide students an orientation in civic and community engagement.
- TURF 235 was made available through World Campus to enable students at other campuses to maintain the recommended course scheduling sequence while remaining at the campus location a full two years. Faculty are generating a proposal to offer the baccalaureate degree in Turfgrass Science from World Campus.
- First-year students began maintaining an electronic portfolio as part of their first-year-experience course, AG 150S.

3. Projects Undertaken by Faculty to Incorporate Off-Campus Learning Opportunities into Res Ed Experiences

- Field trips to food and agricultural industries and Washington, D.C., to study the food system were developed and influenced as an integral part of the LEAP summer offering.
- New students in the animal sciences were taken on a field trip to view animal industries throughout the Commonwealth.
- Faculty in the Department of Agricultural and Extension Education conducted a service learning project in which Penn State students worked with minority high school students from Philadelphia who are interested in agriculture. Together, they upgraded an environmental education center. The class project helped to bridge cultural and work relationships between two collegiate organizations.
- The college sponsored twelve competitive judging teams that enabled students to compete with students from other colleges and universities at events throughout the nation. Fifteen different faculty members taught and coached these twelve teams.

- The Washington, D.C., internship experience enabled students to gain relevant experience shaping food, agriculture, and natural resource policies each fall semester while interning with U.S. Senators, U.S. Representatives, USDA, EPA, the White House, and the Smithsonian Institution.

4. Number of Undergraduate Programs Revisiting Degree Program Goals/Outcomes

The following programs revisited their goals and outcomes and revised their program requirements:

Baccalaureate Degree Programs

Agribusiness Management (AG BM), fall 2002

Agricultural and Extension Education (AEE), spring 2003

Agricultural Science (AG SC), spring 2003

Agroecology (AGECO), fall 2003

Animal Sciences (ANSCI), spring 2002

Forest Science (FORSC), summer 2002

Horticulture (HORT), spring 2003

Wildlife and Fisheries Science (W F S), fall 2004

Associate Degree Programs

Forest Technology (2FORT), summer 2002

Minor Programs of Study

Agribusiness Management (AG BM), fall 2002

Agricultural and Biological Engineering (A B E), summer 2004

Environmental and Renewable Resource Economics (E RRE), summer 2004

The following new programs were created to meet student and societal needs:

Baccalaureate Degree Program

Toxicology Major (TOX), fall 2004

Minor Programs of Study

Environmental Soil Science Minor (ESOIL), spring 2004

Equine Science Minor (EQ SC), spring 2002

Off-Road Equipment Minor (OFFRD), fall 2002

Poultry and Avian Science (P A S), spring 2005

5. Number of degree programs preparing benchmarking information on student-outcome realizations through surveys of recent graduates, focus groups, or exit interviews.

A Web-based survey of graduates was developed and administered to graduating seniors in December 2003 and May 2004. The survey included an overall college survey and twelve major-specific surveys. Unit leaders conducted exit interviews of graduating seniors for the following programs: Agricultural and Biological Engineering (ABE), Agricultural Systems Management (ASM), Forest Science (FORSC), and Wildlife and Fisheries Science (WFS).

Goal B Report Card

Goal B: Enhance research programs through focused allocation of college resources, increased external funding, and collaborative projects.

1. Demonstrated Resource Focus on Priority Program Areas

- Hires in:
 - a. Enhancing profitability in the food and agriculture system (8)
 - b. Protecting water resources (1)
 - c. Improving forest management and use of wood products (3)
 - d. Ensuring agricultural biosecurity (3)
 - e. Strengthening families, youth, and communities (4)
- An annual seed grant program was instituted to facilitate education, research, and outreach on College of Agricultural Sciences (CAS) priority program areas and in novel initiatives (total investment levels: FY2003 \$307,000, FY2004 \$299,000, FY2005 \$372,000). The following table illustrates investments in priority program areas.

Fiscal Year (FY)	Enhancing profitability in the food and agriculture system	Protecting water resources	Improving forest management and use of wood products	Ensuring agricultural biosecurity	Strengthening families, youth, and communities
2003	7 awards \$96,050	3 awards \$37,250	1 award \$15,000	1 award \$15,000	2 awards \$27,200
2004	3 awards \$40,200	0 awards	0 awards	1 award \$15,000	5 awards \$63,062
2005	5 awards \$63,320	2 awards \$27,000	1 award \$15,000	0 awards	8 awards \$111,559

- Discretionary research funding has been committed to the Center for Infectious Disease Dynamics (priority program: ensuring agricultural biosecurity) at the level of \$75,000 over three years, a new Center for Chemical Ecology (priority program: ensuring agricultural biosecurity) at the level of \$75,000 over three years, and a program in Geospatial Mapping of Livestock Premises (priority program: ensuring agricultural

biosecurity) at the level of \$100,000 over two years (leveraging a \$400,000 investment by Pennsylvania of flow-through federal funding from the Department of Homeland Security and USDA).

2. Level of Extramural Support for College Programs

FY2000–2002 Averages

657 proposals (486 research) for \$170 million (\$144 million research)

513 awards (377 research) for \$39.0 million (\$26.8 million research)

FY2003 Averages

702 proposals (492 research) for \$169 million (\$134 million research)

580 awards (419 research) for \$56.3 million (\$36.6 million research)

FY2004 Averages

707 proposals (490 research) for \$220 million (\$192 million research)

601 awards (439 research) for \$49.6 million (\$36.9 million research)

The CAS seed grant program was designed to provide funds that would enhance faculty/staff ability to submit successful extramural proposals. Extramural proposals identified by faculty as resulting from seed grant funding are summarized below.

FY2003 (award date: 1/16/2003):

19 proposals referencing seed grants

FY2004 (award date: 2/23/2004):

21 proposals referencing seed grants

3. Degree of Collaboration in Research Projects

Summarized below is the comparison of the granting activity by faculty and staff attributed to our units versus the faculty participation activity, which is a measure of the activity of our faculty and staff in their home units as well as in grants administered in non-agricultural sciences units. This is an imperfect measure of the extent of collaboration—this metric misses the collaborative and interdisciplinary efforts conducted within departments.

FY2002 (SIMS data estimated for faculty participation pre-2002)

Projects attributable to college units = \$38.6 million

Faculty participation = \$44 million

FY2003

Projects attributable to college units = \$43 million

Faculty participation = \$49.2 million

FY2004

Projects attributable to college units = \$35.7 million

Faculty participation = \$54 million

The CAS seed grant program has been designed to encourage interdisciplinary and multifunctional cooperation. Proposals funded in FY2002–2004 are broken down below by functional cooperation and interunit cooperation.

Functional Cooperation

FY	Res/Ext/ ResEd	Res/ ResEd	Res/ Ext	Ext/ ResEd	Res/Ext/ Int	Ext/ Int	Ext/ResEd/ Int	Total
2002	1	—	3	2	—	—	—	6
2003	1	—	3	—	1	1	1	7
2004	3	1	6	1	1		1	13

Interunit Cooperation

FY2002	9 of 24 funded
FY2003	9 of 22 funded
FY2004	11 of 28 funded

4. Strength of Graduate Education Programs

- CAS graduate programs were reviewed in 2003–2004 by a University faculty review panel. In preparation for this review, each program was required to generate a series of quantitative and qualitative assessments of program strength. CDs with complete information for all graduate programs are available in each academic unit. Included in this self-assessment were data on student professional activities (e.g., publications, presentation, awards) and placement for all degree programs.

- The faculty review committee identified 27 of 43 graduate degree programs as satisfactory. Eleven of the remaining 16 degree programs were professional master’s degrees serving a low number of students, and steps are being taken to consolidate and/or drop these degrees. Discussions of steps to further strengthen programs across the board are in progress.
 - Three CAS graduate students won prestigious Graduate School Alumni Dissertation Fellowships (one in AY2002–2003 and two in AY2003–2004). The inaugural Graduate Program Chair award and Graduate Mentoring Award went to CAS faculty in AY2002–2003. CAS graduate students are highly successful in the annual Graduate School Poster Competition (e.g., AY2003–2004, 15 of 36 total awards went to CAS students).
 - A competitive grants program was conducted for graduate students in AY2002–2003. Seventy-two students participated in a mandatory grantsmanship workshop as a prerequisite to application. We received 43 applications, which were evaluated by a panel of faculty, and funded 27 for a total investment of \$54,000. This program will be repeated in future years.
 - Academic year graduate enrollments:
Average AY2000–2001/2001–2002
374 (CAS degree programs)
91 (Intercollegiate degree programs)
AY2002–2003
394 (CAS degree programs)
95 (Intercollegiate degree programs)
AY2003–2004
397 (CAS degree programs)
92 (Intercollegiate degree programs)
- 5. Impact of College Research Programs**
- Research impacts have been documented in the Annual Reports of Accomplishments and Results for the Pennsylvania Agricultural Experiment Stations, filed with the U.S. Department of Agriculture and posted at <http://research.cas.psu.edu/POW.htm>.

- We have implemented an interview program with research faculty at the termination of their Agricultural Experiment Station (AES) projects. These interviews, which include the team responsible for state and federal reporting and a representative of ICT responsible for writing news releases and impact statements, focus on identifying the impact of college research and educating the faculty as to the importance of reporting potential impact from their work.
- Intellectual Property (IP) serves as a metric for technology transfer from research activities. Following are several different measures of IP generation in the college.

Invention Disclosures

CY2002 = 11
 CY2003 = 11
 CY2004 (to date) = 8

Provisional Patent Filings

CY2002 = 9
 CY2003 = 5*
 CY2004 (to date) = 1

U.S./International Patent Filings

CY2002 = 8/4
 CY2003 = 6/4
 CY2004 (to date) = 1/0**

U.S. Patents Issued

CY2002 = 5
 CY2003 = 1
 CY2004 (to date) = 1

Licensing Agreements Executed

CY2002 = 3
 CY2003 = 4
 CY2004 (to date) = 1

Value of Royalties/Licensing Fees

CY2002 = incomplete data (this office began monitoring in September)
 CY2003 = \$54,080
 CY2004 (to date) = \$67,839

* The change in provisional filing level reflects a change in operating procedure in the Penn State Intellectual Property Office.

** Two additional provisional patents from CAS were selected for conversion to full patent applications.

Note: AY = academic year, CY = calendar year, and FY = fiscal year

Goal C Report Card

Goal C: Increase the relevance, responsiveness, and effectiveness of cooperative extension educational programs on important current and emerging issues pertaining to the food and agriculture system; natural and environmental resources; children, youth, and families; and economic and community development.

1. Number of Participants in Cooperative Extension Programs Statewide

During the fiscal years 2001 to 2003, Penn State Cooperative Extension offered educational opportunities to more than 2.3 million citizens across the Commonwealth.

2. Number of Underrepresented Participants in Cooperative Extension Programs Statewide

Extension educators and faculty provided educational opportunities to more than 223,000 individuals from underrepresented groups during the past three years.

3. Evidence of Participant Knowledge, Attitude, Skill, or Practice Change in Major Program Areas

Outcomes of the educational programming in major program areas (see below) are reported by extension educators and faculty annually. Of the nearly 770,000 individuals reached each year, an average of 321,000 participates annually in evaluations to determine the effectiveness of the educational programs offered. Approximately 70 percent of these participants (223,000) indicated increases in knowledge and skills as well as changes in attitudes and behaviors as a result of participation in educational activities each year.

Major Program Areas

- Enhancing profitability in the food and agriculture system
- Protecting water resources (wise use of environmental resources)
- Ensuring agricultural biosecurity (safety and security)
- Improving forest management and use of wood products
- Strengthening families, youth, and communities

Examples of the impact of cooperative extension programming are highlighted below.

- Tilling the Soil of Opportunity is a training course developed to teach important aspects of a business plan. One farmer increased profits over \$7,500 for the summer of 2003 through direct marketing to the farm market in Washington, D.C.
- Through one-on-one impact assessments of 22 FY2004 FSA Borrower Production Management Training participants (a subset of the 95 registered for training), these 22 individuals, as well as an additional 10 individuals who completed an impact plan with local extension educators, had an estimated economic impact that totaled \$490,000 statewide. This does not account for any positive economic impact accruing to the other 63 registrants.
An additional impact assessment was completed for 18 out of 43 registrants of the FY2004 FSA Borrower Farm Financial Management training. Estimated projected economic impacts accruing to the 18 participants totaled just under \$78,000. A producer who attended a Dairy Options Pilot program in 2002 reported a direct income increase of nearly \$30,000 as a result of risk management practices implemented.
- Penn State developed the Statewide Food Safety Certification Program (SFSCP) in the fall of 2001. The ServSafe® program, which consists of a 16-hour workshop taught by cooperative extension field-based educators, is offered collaboratively with Penn State Continuing Education and Penn State campuses and/or with local organizations in several counties. Over 4,750 students have completed the program with outstanding results. In 2003, for example, more than 1,190 professional food preparers were trained with approximately 98.5 percent passing a test for certification.
- One example of educational offerings targeting owners of private water systems is the Safe Drinking Clinics and home water testing. In 2003, the Web site received 680 visits. An online survey indicated that 83 percent of visitors found the Web site helpful and 80 percent had taken some action on their water supply as a result of visiting the site.

- Cooperative extension has taken an active role in supporting and promoting improved agrisecurity and emergency preparedness within the Commonwealth, working closely with the Pennsylvania Department of Agriculture (PDA) on joint training opportunities and enhancing relationships with emergency response stakeholders and the State Animal Response Team (SART) project. Cooperative extension's collaboration with PDA established a coordinated effort with a positive impact on statewide emergency preparedness. Additionally, the Department of Veterinary Science cooperated with PDA to hold meetings around the state to educate veterinarians and agricultural professionals on the challenges of potential foreign animal disease introduction into the state.
- More than 340 natural resource professionals responsible for managing 6.8 million acres of forestland in Pennsylvania and New York participated in the Forest Health 2003 Conference. An evaluation of the foresters and natural resource professionals who participated in the Forest Health 2002 Conference indicated that 97 percent have implemented or used knowledge and/or practices learned at the conference. Additionally, 275 volunteers in the VIP-Covert's program were surveyed in 2002, and 100 respondents indicated that they contributed seven years' worth of time during 2001.
- Creating Health is an outreach program based on a partnership among WPSX Public Broadcasting, Penn State Cooperative Extension, and three colleges at Penn State. Data compiled on several presentations indicate participants (N = 170) increased behavioral intent to change, a realistic outcome of single-contact programs.
- As a result of the Better Kid Care program during 2002 and 2003, more than 63,700 child care providers were trained statewide and more than 33,200 child care providers received state-mandated certification to operate in compliance with state law through participation in satellite workshops or direct training.

- The eInitiatives program includes four components: Community Network Projects, eBusiness for Small Business, eGovernment, and eNonProfit. During 2003, extension educators conducted eGovernment programs in over 15 counties for more than 130 county and municipal officials. Program evaluations indicated that the information is being used to help them organize and develop more dynamic and effective eGovernment sites. In one county, a high-speed network was developed to share the connection among organizations across the county.
4. **Number of New Internal and External Cooperative Extension Program Collaborations Established**
Cooperation extension continues to partner with traditional collaborators in support of agriculture and natural resources programming (e.g., the Pennsylvania Department of Agriculture, Department of Environmental Protection, Department of Conservation and Natural Resources, and the Natural Resource Conservation Service of USDA). Much new collaboration includes these traditional partners in new projects. For example, a recent collaboration on a proposal submitted by cooperative administrators, faculty members, and a deputy secretary in the Pennsylvania Department of Agriculture resulted in an award of approximately \$990,000 for the Keystone Agricultural Innovation Center. The center will provide a combination of education and technical assistance to agricultural producers interested in initiating or improving value-added activities (e.g., processing of products, business analysis, basic market research) through a seamless, distributed network of three regional sites in Pennsylvania.

5. **Increase in Funding from Non-Appropriated Sources for Cooperative Extension**

Cooperative extension has been highly successful in continuing to transform our revenue portfolio in grants and contracts during the past three years, securing \$19 million in grants and contracts in FY2003–2004. This is a 48 percent increase over the \$12.7 million secured in FY2002–2003. The current revenue from grants and contracts represents nearly a 100 percent increase in the three-year period, beginning with \$10.5 million in FY2001–2002. This success is due to the vision, creativity, and initiative of dedicated extension educators and extension faculty seeking new funding for meeting the critical needs of the citizens of Pennsylvania.

Penn State Cooperative Extension impacts have been documented in the *Annual Report of Accomplishments and Results*, which was submitted to Cooperative States Research, Extension, and Education System (CSREES-USDA) on April 1, 2004, and is available online at <http://pow.cas.psu.edu/AnnualReport03.doc>.

Goal D Report Card

Goal D: Enhance the overall mission of the college and its efforts to increase awareness of other cultures and societies through increased international opportunities for faculty, extension educators, staff, and students.

1. Number of Students Enrolling in the International Agriculture Minor

Over the last three years, as called for in the strategic plan, the college has invested more time and resources into building interest in the INTAG minor. A working group of faculty from across the college worked to update the minor and make it more relevant and accessible to a greater number of students. The work of this group will be fully implemented in the coming year. This effort, combined with additional promotional efforts, has yielded the largest number of students enrolled in the minor in our records (dating from 1989).

- 2001–2002 = 8
- 2002–2003 = 10
- 2003–2004 = 6
- 2004–2005 = 17

2. Amount of Extramural Funding Raised

FY	Principal Investigator: Office of International Programs (OIP)		CAS Units with International Activities	
	# of Proposals and \$ Amount Submitted	# of Awards and \$ Amount Submitted	# of Proposals and \$ Amount Submitted	# of Awards and \$ Amount Submitted
7/00–6/01	3 \$859,187	3 \$132,190	4 \$1,026,524	No data available
7/01–6/02	6 \$944,952	6 \$533,622	8 \$1,361,247	3 \$256,667
7/02–6/03	14 \$1,296,409	13 \$871,163	19 \$2,962,380	5 \$227,373
7/03–9/04	15 \$1,446,504	14 \$714,886	10 \$6,447,733	7 \$1,945,637
Total	38 \$4,547,052	36 \$2,251,861	41 \$11,797,884	15 \$2,429,677

3. Number of International Visitors to the College

One measure of our success at becoming known as a top school of agricultural sciences in the world is to monitor the number of international people visiting

campus. Although the overall number of visitors has not increased considerably, the number of countries seeking out Penn State as a destination has steadily increased.

- 2002–2003 = 57* from 10 countries
- 2003–2004 = 41** from 11 countries
- 2004–2005 = 42** from 17 countries**

* Includes a 20-person delegation from China
 ** Data only through 10/1/04

4. Number of Faculty, Extension Educators, and Staff Participating in International Experiences

Global Travel Fund

To increase the number of faculty, staff, and extension educators with international experience, the college started the Global Travel Fund to provide financial support for those seeking out their first international experience. Starting on July 1, 2002, this fund has supported 53 new faculty, extension educators, graduate students, and staff in their efforts to pursue a new international experience. In addition, the number of students with an international experience has increased notably:

International Studying Abroad/Internships/Research (Undergrads)

	Study Tour	Semester Program	Year Program	Summer	Internship	Research
1999	—	9	—	—	—	1
2000	27+	11	—	—	—	—
2001	22	1	—	—	1	1
2002	36	8	—	3	2	1
2003	77	11	1	1	—	—
2004	43	17	—	5	1	—
2005 Spring Info Only	56	7	—	—	1	—

5. Number of New Courses with International Content and Existing Courses Revised to Include International Content

- In partnership with the Office for Undergraduate Education, three workshops/series were developed to provide faculty with the tools needed to internationalize their courses.
- Via the Study Tour mini-grant, nine new courses were created with international content in the form of a study tour component.

Goal E Report Card

Goal E: Enhance the human resources of the college by aggressively hiring outstanding and diverse persons; investing in the professional development of all persons; and increasing efforts to ensure a diverse, inclusive, and supportive work environment for all members of the college—faculty, staff, and students.

1. Females and Individuals from Underrepresented Groups Hired, Retained, and Advanced in the College Workforce

	2002–2003	2003–2004	2004–Present (1/31/2005)
Number of Employees	1,309	1,267	1,262
Female	658 (50.3%)	649 (51.2%)	631 (50%)
Academic Administrators	—	2 (10%)	2 (11.8%)
Faculty	75 (23.5%)	72 (23.8%)	73 (22.9%)
Professors	15 (10.9%)	14 (9.8%)	15 (10.4%)
Assoc Prof	19 (27.5%)	18 (29.5%)	20 (27%)
Assist Prof	19 (27.9%)	17 (27.9%)	18 (40 %)
Inst/Res	18 (40%)	22 (56.4%)	20 (35.7%)
Agents	143 (51.5%)	141 (52.4%)	142 (52%)
Staff	440 (63.1%)	434 (64.3%)	414 (71.5%)
Minority	109 (8.3%)	104 (8.2%)	98 (7.8%)
Academic Administrators	2 (11.1%)	3 (15%)	1 (5.9%)
Faculty	37 (11.6%)	37 (12.2%)	38 (11.9%)
Professors	6	4	5
Assoc Prof	9	11	11
Assist Prof	13	11	10
Inst/Res	9	11	12
Agents	10 (3.5%)	10 (3.7%)	10 (3.7%)
Staff	60 (8.7%)	54 (8%)	49 (8.5%)
Total	767 (58.5%)	753 (59.4%)	729 (57.8%)

	2002–2003	2003–2004	2004–Present (1/31/2005)
New Hires	121	52	56
Female	87 (72%)	31 (60%)	26 (46.4%)
Academic Administrators	—	—	1
Faculty	5	3	17
Professors	1	—	1
Assoc Prof	—	—	2
Assist Prof	3	2	2
Inst/Res	1	1	12
Agents	10	3	11
Staff	72	25	27
Minority	16 (13.2%)	5 (9.6%)	8 (14.3%)
Academic Administrators	—	—	—
Faculty	3	1	3
Professors	—	—	—
Assoc Prof	—	—	—
Assist Prof	1	—	—
Inst/Res	2	1	3
Agents	—	1	1
Staff	13	3	4
Total Promotions	27	49	56
Female	10 (37%)	21 (42.9%)	28 (50%)
Academic Administrators	—	—	—
Faculty	4	3	2
Professors	—	—	—
Assoc Prof	1	2	—
Assist Prof	3	1	2
Inst/Res	—	—	—
Agents	6	9	11
Staff	—	9	15
Minority	3 (11.1%)	2 (4.1%)	1 (1.8%)
Academic Administrators	—	—	—
Faculty	3	2	—
Professors	—	—	—
Assoc Prof	—	1	—
Assist Prof	3	1	1
Inst/Res	—	—	—
Agents	—	—	—
Staff	—	—	—

2. Underrepresented Minorities in the Undergraduate and Graduate Population

Fall Semester Events	Undergraduates			Graduate*		
	University Park	Campuses	Total	M.S.	Ph.D.	Total
1999	105	24	129	11	13	24
2000	91	14	105	13	13	26
2001	75	25	100	11	13	24
2002	86	12	98	14	13	27
2003	100	19	119	10	15	25
2004	92	22	114	6	11	17

* Does not include students advised and supported by the college in intercollege graduate programs, which is about 25 percent of our total graduate student enrollment. Data on underrepresented minorities are not available for intercollege graduate programs by college.

3. Percentage of Eligible Faculty and Extension Educators Taking Sabbatical Leaves

2002–2003	2003–2004	2004–Present (1/31/2005)
3 of 122 eligible faculty (2.4%)	8 of 118 eligible faculty (6.8%)	9 of 146 eligible faculty (6.2%)
2 of 163 eligible extension educators (1.2%)	0 sabbaticals requested for extension educators	0 sabbaticals requested for extension educators

4. Participation in Human Resources Development Center (HRDC) and Staff Development Programs, Including Climate and Diversity Training Sessions

2002–2003	2003–2004	2004–Present (1/31/2005)
348 staff employees participated in HRDC training programs	387 staff employees participated in HRDC training programs	188 staff employees participated in HRDC training programs
555* extension employees participated in Staff Development In-Service Programs	560* extension employees participated in Staff Development In-Service Programs	220* extension employees participated in Staff Development In-Service Programs
72 employees participated in diversity and climate-improvement training	39 employees participated in diversity and climate-improvement training	67 employees participated in diversity and climate improvement training
883 employees reported an average of 73.7 hours of professional staff development	911 employees reported an average of 73.1 hours of professional staff development	894 employees reported an average of 75.2 hours of professional staff development
Per college guidelines, units must spend 1.5% of unit staff salary base on staff development	Per college guidelines, units must spend 1.5% of unit staff salary base on staff development	Per college guidelines, units must spend 1.5% of unit staff salary base on staff development

* Counts employees more than once

Once faculty and staff are hired, the college recognizes its organizational responsibility to provide for and invest in the professional development of its workforce. Equally so, the college also recognizes individual employees' responsibilities to make the personal investment in their professional development. Through this partnership, the missions of the college and the University can be best delivered. The college encourages, supports, and reinforces professional development in a variety of ways:

- Customization of an in-house training for staff
- Partnership with the University Human Resource Development Center (HRDC) to deliver a variety of programs
- Embedment of the principles of professional development when laying out expectations to employees
- Reinforcement, recognition, and reward of professional development through our promotion and tenure process, the cooperative extension educator peer-review process, and ACTS (our staff peer-review reward and recognition program).

Survey data from both our internal climate assessment surveys and the University faculty and staff survey suggest that the college should strive to make improvements in three major areas: (1) the faculty/staff relationships in our academic departments; (2) staff supervisors and academic administrator supervisory skills; and (3) communications across the college on administrative and programmatic matters.

In response to these issues, the college has been studying and addressing where the performance gaps exist. For example, the Staff Advisory Committee to the Dean developed a survey about communications in our college. Twice a year, Dean Steele holds a collegewide "town meeting" wherein he communicates to faculty and staff the state of the college. Also during the town meeting, a press club-style question and answer session is held. In spring of 2004, the first college staff conference was held offering several options to include seminars on conflict management, performance management, communications, and working effectively within groups and teams. Special sessions on customer service, global diversity, and human re-

sources issues in the form of roundtable discussions were held with employees. In 2003, the college developed its own survey on the climate issue of faculty and staff working relationships and is currently planning additional initiatives to address that issue. In spring of 2002, the college, in response to a need to recognize the contributions of our staff, conferred our first Staff Laureate Awards designed to recognize staff in the following categories: Trailblazer, Ambassador, Customer Service, Leadership, and Spirit. During the report period, the college's Office of Human Resources held 44 training sessions with over 1,000 faculty, staff, and graduate students on the topic of sexual harassment.

Appendix C: Examples of Efforts to Increase Annual Income or to Reduce Costs between July 1, 1997, and December 1, 2004

- Grant and contract awards have increased 102 percent from \$24.6 million to \$49.6 million.
- Grant and contract proposals have increased 134 percent from \$94 million to \$220 million.
- Since July 1, 1997, the college has established 120 new endowments.
- The book value of college endowments has grown more than 100 percent from less than \$20 million to more than \$40 million (market value \$53 million).
- Spendable earnings from endowments have more than doubled from \$1.8 million to \$3.8 million.
- County commissioner funding for cooperative extension has increased 67 percent from \$6.3 million to \$10.5 million.
- County in-kind (office space, utilities, services, etc.) has increased 83 percent from \$1.2 million to \$2.2 million.
- Departmental sales income has increased 44 percent from \$3.9 million to \$5.6 million.
- The college has secured nonprofit bulk mailing privileges for county extension offices. This was formerly disallowed by federal penalty mail policy. The anticipated savings is between \$60,000 and \$80,000.
- July 1, 2003, the college increased the shipping and handling fee on all for-sale publications by \$5 per order.
- Implementation of a cost-recovery fee plus shipping for bulk order “free” publications.
- Starting FY2004–2005, the college will implement a 4-H educational materials fee.
- Our diagnostic testing services were expanded to include manure analysis, compost analysis, and broadened environmental testing services. These new programs have resulted in income increases of \$150,000 to fund program enhancements.
- Crop insurance was implemented on all of our farms to reduce the risk associated with farming.
- To capture additional funding, the college enrolled, for the first time, in many of the same USDA programs as other commercial farmers (limited to noncompetitive programs).
- The college encouraged the expanded use of registration fees to recover more of the direct costs associated with the delivery of extension programs to the public. In FY2003/04, fees recovered totaled \$600,000.
- At PDA’s request, we accepted the responsibility and income from the educational materials related to the Pennsylvania Pesticide Applicator Program when Independent Learning could no longer handle the volume and complexity. This resulted in an additional income of \$90,000.
- The college applied for and secured a statewide sales and use tax exemption for the state’s more than 2,000 organized 4-H clubs. The clubs were not granted exemption under the University’s ruling. This exemption for 4-H clubs could result in significant cost savings of up to \$90,000.

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