COLLEGE OF AGRICULTURE SELF-STUDY:
OPPORTUNITIES AND CONSTRAINTS FOLLOWING A DECADE OF PROGRESS
MARCH 2007

SELF-STUDY ANALYSIS

As fully documented in the complete self-study materials, the College of Agriculture has made remarkable progress in several areas of research, instruction and extension since 2000. The following is an attempt to summarize both measures of progress and subjects for concern across all mission areas and programs of the College. The first section is organized according to the goals of the University and College Strategic Plans for 2003-6. Those concerns printed in bold highlight infrastructure and capacity issues, which is a focus for this review.

Goal I: Reach for National Prominence

Most notable accomplishments and initiatives:

- Two departments were ranked in the Top 10 nationally in the 2007 Faculty Productivity Index; Plant Pathology ranked 1st and Entomology ranked 10th.
- Faculty were recognized in four different USDA Secretary's Honor Awards between 2001 and 2006.
- The Office for Advancement was reorganized and re-staffed. Drew Graham was recruited as Director of Advancement and Marci Hicks as Director of Development.
- The College exceeded its Capital Campaign goal of $100M in 2006, one of the first colleges at UK to do so.
- The College endowment value increased from $47M in 2003 to $92M in 2007.
- Planning and analysis: The College completed the following-
  - 2003-6 Strategic Plan, "The Land Grant Vision"
  - 2004-5 "Targets of Opportunity" (program prioritization), leading to the Equine Initiative, the Food Systems Initiative, and the Center for Leadership Development

  (documentation for the above may be found at http://dobson.ca.uky.edu/admin/)
- In 2004 we began an exhaustive internal and external review of Information Technology issues in the College. This led to internal reorganization, reclassification of several positions, creation of the Creative Applications in Learning Environments Lab (CALE), and separation of eXtension staff from Ag Communications.
- The College Business and Budget Office was restructured and staff were reorganized, with a substantial increase in overall skill and capacity. Business and financial personnel in several departments have been reorganized and upgraded.
- In 2005-6 we formed a planning committee on Leadership research and education, leading to the redevelopment of the Center for Leadership Development and the appointment of Tricia Dyk as first Director.
- Building and facilities: Gluck expansion completed, completion of $22M Plant Science Building, Woodford ARC farm feed mill and other projects, approaching

$1M improvements in horticultural facilities at South Farm, Good Barn Conference Center, joint EKU dairy project planning, design phase for LDDC renovation/expansion.

Most significant concerns:

- **Infrastructure and capacity appears likely to constrain further growth and advancement in all mission areas, and across most units in the College. Limits have been reached in:**
  - **quantity and quality of lab space**
  - **ability to sustain Top 20 caliber farm and forest research capacity**
  - **office, meeting and teaching space**
  - **IT and communications support and hardware**
  - **grants, accounts, business management for rapidly growing operations.**
- **Many national metrics are size-dependent (for example, the pending NRC evaluations of doctoral programs). The UK College of Agriculture is a mid-size institution.**
- We have made limited progress on strategic indicators calling for development of metrics relevant to the national standing of Extension and other land grant programs.
- National rankings in most agricultural disciplines continue to be unavailable or meaningless.

Goal II: Attract and Graduate Outstanding Students

Most notable accomplishments and initiatives:

- Mike Mullen was hired as Associate Dean for Academic Programs in 2004. He has expanded, reorganized and physically renovated the Student Services office.
- We merged the large undergraduate population of HES with the College in a surprisingly positive process during 2003-5.
- Undergraduate enrollment: In 2001, College UG enrollment was slightly under 1100. The merger with HES added approximately 600 to that. With continuing enrollment growth in several HES and Ag majors since the merger, the total exceeded 2,100 in 2006-7.
- Graduate enrollment increased from 324 in 2001 to 417 in 2006.
- Program innovation: A new major in Equine Science and Management and a new major in Sustainable Agriculture will accept students in Fall 2007. Programs in Communications, Public Service and Leadership, and Ag/Family and Consumer Science Education have been restructured.
- College-level scholarship support has increased by about 50% since 2001, to ~$450K in 2006. The "Golden Leaf" campaign in 2006 will increase the scholarship endowment by more than $2M.
- Between 1997 and 2005, The Graduate Programs in Animal & Food Sciences and Entomology were two of the top ten graduate programs at UK as measured by total numbers of graduate student publications and presentations.

Most significant concerns:

- **In several growing areas, additional undergraduate enrollment will not be possible without additional faculty instructional DOE.**
- **Quality and quantity of classroom space on south campus has become limiting.**
- **Some classrooms and teaching labs are inadequately equipped.**
- University-wide freshman retention and six-year graduation rates are not up to the standards of Top 20 benchmarks.
- Advising and teaching quality is inconsistent in some programs.
- Graduate enrollment could be increased in most College programs. However, assistantship support is increasingly expensive and may become an unattractive option for many faculty research programs.
- Continuing tuition inflation substantially increases the cost of funding Research Assistants.

Goal III: Attract, Develop and Retain a Distinguished Faculty

Most notable accomplishments and initiatives:

- We completed national searches for key faculty leaders: Steve Bullard, Chair of Forestry; John Obrycki, Chair of Entomology; Ann Vail, Director of the School of Human Environmental Sciences. In an internal search, Janet Kurzynske was appointed Chair of Nutrition and Food Sciences.
- One example of recruiting quality faculty since 2001: Nagy, Palli, Dobson have each held 3 concurrent competitive grants from NIH, NSF and USDA.
- A second example: All four "Plant Bioengineering Initiative" faculty hires now have federal competitive grants.
- In 2001-2, a faculty-driven initiative led to the creation of the new Department of Community and Leadership Development, with Gary Hansen appointed as Chair.
- We revised evaluation systems for faculty, county agents, and unclassified staff to increase differentiation of both superior and unsatisfactory performance, with greater emphasis on formative evaluation for all.
- The County Enhancement Initiative addressed both compensation and professional development issues for agents. A total of $3.1M has been appropriated by the Legislature.
- Outside of HES during the reorganization, few of our faculty have been successfully recruited by other universities during the last 3 years. This is attributable to the combination of the University "Fighting Fund", supporting more aggressive retention responses at the department and college level, and the expanded use of pre-emptive offers to those at risk.

Most significant concerns:

- **The University plan projects limited growth in faculty numbers. Many departments report that further growth in either enrollment or grant funding is unlikely without addition of faculty.**
- **Many departments report limited office space for faculty and staff.**
- **Retention and compensation of high skill staff remains a challenge.**

- Recruitment or development of faculty at the most distinguished level (e.g., Academy-level) remains a deficiency.

Goal IV: Discover, Share and Apply New Knowledge

Most notable accomplishments and initiatives:

- Nancy Cox was recruited in 2001 to lead Research Office and Ag. Experiment Station. The Research Office staff has substantially increased capacity for grants management and project development.
- Extramural funding increased from $6M in 1997 to more than $31M in 2006. Virtually all categories of funding sources (e.g., federal, private, state agencies, earmarks,…) have increased significantly during this period.
- Federally-competitive funding has increased from 26% to 33% of the grants portfolio.
- Postdoctoral Fellows increased from 34 in 2000 to 73 in 2006.
- We proposed the establishment of an Agricultural Research Service (ARS) program in Kentucky in 2001. This is now base funded at $2.9M/year and to date $7M has been appropriated for construction of a new on-campus USDA Lab.
- With former Dean Little, we sought the support of Senator Mitch McConnell for directed USDA appropriations beginning in approximately 1999. Special Grants plus ARS earmarks increased to $10.2M in the FY07 markup.
- In 2002, we instigated legislative action changing the mission of the Tobacco and Health Research Institute and changing the name to the Kentucky Tobacco Research and Development Center.
- Inclusive, multidisciplinary priorities have been identified through the "Targets of Opportunity" document. The Equine Initiative is the best developed example of such an initiative.
- The College assumed administrative responsibility for the Tracy Farmer Center for the Environment in 2003 and continues to support its development.

Most significant concerns:

- **Infrastructure and facilities limit the potential for continued growth of research. Including:**
  - **Grants management, accounting and reporting capacity is stretched to the limit of current staff.**
  - **Our most distinguished and successful research programs have insufficient laboratory space for further expansion.**
  - **Plans must be made to deal with increasing operating budget deficits and substantial deferred maintenance needs at off-campus research facilities.**
  - **On-campus facilities for the environmental sciences and for HES are inadequate and will not support Top 20 caliber programs.**
- The research capacity and attainment of significant elements in the School of Human Environmental Sciences remains below expectations.
- Funding of doctoral Graduate Research Assistants on extramural funds should increase.
- Despite substantial recent progress, some key administrative or leadership positions remain unsettled and some critical faculty positions remain vacant.

Goal V: Nurture Diversity of Thought, Culture, Gender and Ethnicity

Most notable accomplishments and initiatives:

- The 2003 review and planning process led to the creation of the College Diversity Office and the appointment of Lionel Williamson as Assistant Dean for Diversity.
- Undergraduate enrollment of African Americans has steadily increased from 3.1% in 1997 to 6.2% in 2006.
- The merger with HES has substantially increased gender and racial diversity of the College overall. The new range of College programs is providing greater opportunity to reach a more diverse pool of potential students and faculty.
- Many new programs have been developed that target more diverse audiences, just one example, the Farmer Center's Natural Resource Academy for urban youth.

Most significant problems:

- The College has yet to achieve targets in most areas. Diversity remains unacceptably low in many departments and program areas.
- At the faculty level, both gender and racial diversity are inadequate. Only four African-American faculty have been hired in five years.
- While substantial efforts are being made to hire and retain minority county agents, progress remains slow.

Goal VI: Elevate the Quality of Life for Kentuckians

Most notable accomplishments and initiatives:

- In general, the College retains a strong position in statewide agricultural leadership. Interactions with virtually all commodity groups and ag organizations are as positive and mutually supportive as they have ever been.
- The College role in the Kentucky Agricultural Development Fund (that has directed ~$200M in ag investments since 2001) has been high impact and favorably reviewed. This and similar activities are among the reasons the College continues to provide core leadership for the Kentucky agricultural economy. Our role encompasses policy, markets and marketing, analysis, diversification initiatives, new crop/livestock production technologies, processing and value-added enterprise development, support of small agribusiness, and leadership/entrepreneurship training.
- The strength of local extension support may be among the nation's best (about $34M in local funding in 2007). This combines with the high visibility and positive public reception of extension initiatives in non-traditional areas such as health, economic development and the arts to build a broad base of statewide support that extends beyond farming.
- Re-envisioning Extension: We reorganized the administrative structure of the statewide extension system, reducing middle management positions; substantially enhanced agent training and professional development; hired all new Assistant Directors; and put new emphasis on regional coordination.

- County Enhancement Initiative: We secured state funding for implementation of career ladder and professional development system for county agents, reducing the salary gap vs. benchmarks. The total appropriation increase has been $3.1M, recurring.
- Since 2001, extension contact and economic impact metrics have increased by 20-40% in most categories.
- Livestock Disease Diagnostic Center: We established an advisory board, completed a comparative survey and planning process, invested ~$1M in epidemiology/information management systems, increased quality control personnel and pathology faculty, and secured state funding for Phase I of facility expansion/renovation. (Phase II was vetoed by the Governor in 2006, but is expected to be restored in 2007.)
- The NSF-funded Natural Products Initiative and significant developments at the Kentucky Tobacco Research and Development Center are the best examples of our initiatives in the area of commercialization and intellectual property development. The College remains among the university leaders in patents and spawning start-up enterprises.
- The College has assumed a position of leadership in eXtension, a massive national project for development of web-based information content and delivery, with two faculty among the national leadership team, and several Communities of Practice in development.

Most significant problems:

- **Current budget models provide for salary increases but not operating expense inflation. Operating support for extension, teaching and some applied research areas becomes increasingly short. Reliance on extramural sources necessarily increases.**
- **Confirmed funding for Phase II of LDDC is our highest state priority.**
- Administrative changes in Regulatory Services are incomplete.
- Several, but not all, Extension partnership initiatives have been successful and sustainable.
- Extension's role in health programs should be carefully reviewed and planned.
- It is critical that we complete implementation of the County Enhancement Initiative and successfully conclude the national search for a new Associate Dean for Extension.
- **Statewide communications systems are improving but not complete.**
- The expectation for graduate education for agents has been established. Now more accessible and appropriate graduate degree options must be developed.

DEPARTMENT PLANS

In January and February of 2007 all academic departments were instructed to complete an action plan. This request was initiated by the Provost as one element of the continuing university-level strategic planning process. These action plans are included in section 8 of the self-study materials. Questions 1-6 were posed by the Provost to provide the input for university planning. Questions 7 and 8 were added by the College administration to gauge department priorities with regard to infrastructure and capacity issues. Chairs were asked to solicit broad-based input from their faculty on the action plans. The infrastructure and capacity questions were:

Question 7: What infrastructure limitations are most restricting your ability to advance: in research, in instruction, in extension and public service?

Question 8: What are the most critically needed resources (of any kind: human, financial, physical) that limit advancement of your department: in research, in instruction, in extension and public service?

Results by department are listed below for all common responses.

QUESTION 7: infrastructure issues most restricting?

Lab	
More space needed	ENT, FOR, PPA, HOR, VSC
Renovate or upgrade existing space	AFS, ENT, FOR, PSS
Better equipment	AFS, PSS, VSC, NFS, HOR
Enhanced Field/Farm Facilities	AFS, BAE, ENT, FOR, HOR, PSS, VSC, PPA
More Office/Meeting Space	FAM, MAT, NFS, AFS, CLD, HOR, LA, PPA, PSS, FOR
Instruction	
More of better classroom space	PSS, FAM, AFS, CLD, HOR, LA, NFS, FAM
More or better teaching labs	ENT, AFS, HOR, VSC, PSS
Better teaching equipment (incl. IT)	AFS, AEC, CLD, HOR, LA, NFS, FAM ENT
IT, DL, communications or computing support	FOR, PSS, AFS, HOR, PPA, NFS, AEC ENT, VSC
Grants, accounts, business management	BAE, HOR, AFS, ENT, AEC

QUESTION 8 Most critically needed resources?

More Faculty	AEC, BAE, CLD, ENT. FOR, HOR, LA, PPA, VSC, FAM
Fill Faculty Vacancies	FAM, NFS, HOR, MAT
More staff	AFS, CLD, HOR, PSS, PPA, VSC
Staff salaries	AFS, PSS, VSC, LA, HOR, AEC
Operating Budget	AEC, AFS, VSC, MAT, NFS, HOR, PSS LA, ENT, FOR, PPA
Grad Student Support	AFS, CLD, ENT, LA, PPA, PSS, HOR, AEC FOR, FAM

Department chairs were then asked to rank the top 3 priorities for their department for both questions, without further consulting their faculty. Priorities were ranked as follows, with the total of 3 points for first, 2 for second and 1 for third in parentheses:

QUESTION 7: infrastructure issues most restricting?

Lab		
More space needed	2 first	(6)
Renovate or upgrade existing space	1 first, 1 second, 1 third	(6)
Better equipment	2 second	(4)
Enhanced Field/Farm Facilities	1 first, 2 second, 1 third	(8)
More Office/Meeting Space	6 first, 2 second, 1 third	(23)
Instruction		
More of better classroom space	2 second, 3 third	(7)
More or better teaching labs	1 second, 2 third	(4)
Better teaching equipment (incl. IT)	1 first, 2 second, 2 third	(9)
IT, DL, communications or computing support	4 third	(4)
Grants, accounts, business management	1 first	(3)

QUESTION 8 Most critically needed resources?

More Faculty	4 first, 2 second, 3 third	(19)
Fill Faculty Vacancies	3 first	(9)
More staff	2 third	(2)
Staff salaries	1 first, 2 second	(7)
Operating Budget	1 first, 5 second, 3 third	(16)
Grad Student Support	3 first, 3 second, 4 third	(19)

Results

Department responses clearly identified space as the most important limiting infrastructure issue. Perhaps more surprising is that office and meeting space were commonly assigned higher priority than lab or teaching space. Clearly these issues are department-specific. Departments with active and highly funded research programs were more likely to identify lab space. Social science departments or those with limited laboratory research leaned strongly to office space.

Responses to Question 8, about most critically needed resources of any kind, were broader and less focused. Most responses identified one of the personnel categories as most critically needed, but additional operating funds was also a common response. The two faculty categories, in sum, were somewhat more frequently identified than grad student support. Staff investments were less frequently identified as a high priority.

INFRASTRUCTURE AND CAPACITY ISSUES

1) On-campus space was most frequently identified by academic departments as limiting future growth and advancement. The most limiting space category (laboratory, office, conference, teaching) is dependent upon the department.

USDA-ARS funding of an on-campus shared research facility will relieve crowding in Ag North and some other spots. Design of that project is nearing completion. However, recent trends in the federal budget have not been encouraging regarding the schedule for full funding.

The College's highest priority request for a state-funded capital project is listed as an "Environmental Sciences Building". As this has not advanced on the University of Kentucky priority list, plans and specifications remain vaguely defined.

Opportunities for acquiring additional space through capital construction are likely to be limited. In fact, the University of Kentucky Business Plan may be directing capital investments away from the type of space most likely to address the needs of agriculture on south campus. University priorities appear to be moving towards the medical center enterprise, large multidisciplinary research facilities (BBRSB), and added classroom space on central campus. College of Agriculture priorities will need to be well justified within the context of the Business Plan, but may have some difficulty competing with a long list of university capital needs.

Renovation of existing space should be carefully evaluated as an option. Enhancement of sub-standard office and laboratory space in Erikson, Cooper and Dimmock could provide some opportunity for enhancement at lower cost than new construction. Restoration of Cooper House might be affordable without state funding. The feasibility of acquiring off-campus property for non-academic functions could be evaluated. However, few such units would find that to be an appealing option.

2) Off-campus facilities were less frequently identified as limiting in department plans but they did appear prominently for those departments that have the largest fraction of their research and instruction off-campus: Forestry, Animal and Food Science, Veterinary Science, Horticulture and Plant and Soil Science. The College administration probably weighs this issue more heavily than most departments due to the increasing burden of infrastructure support, utility costs and maintenance that is borne at the College level.

The Management Operations unit has operated with an annual deficit between $500K and $1M for the last several years. This deficit consumes a large fraction of College reserves and salary savings. This budget model certainly has encouraged ad hoc decisions about renovation and maintenance and discouraged long-range planning and systematic budget management.

The planning and development process now under way for north farms and the Equine Campus at Maine Chance should provide a better model for how these off-campus facilities can be brought up to acceptable standards of function and appearance. However, this planning process is based on the assumption of a $10-15M investment in improvements at the north farms. To succeed there will require a substantial fund raising effort. To apply this approach to other locations will require a very large infusion of additional financial resources.

3) Expansion of personnel is unlikely to occur at a rate sufficient to move our College beyond the mid-size category of land grant colleges of agriculture. Our planning and our measures of success must adjust to that reality.

Reliable comparative data are scarce, but administrative observations suggest that support for technical and support staff on general fund, "hard" dollars remains as good as or better than at our benchmarks and our regional peers. Expansion of staff support, and upgrading of staff classification and compensation, continues to occur primarily on extramural funds. We are likely to be even more dependent on such funding in the future. Notably, the wisdom of treating federal formula funds as if they were "hard" is now questionable.

The University of Kentucky Business Plan calls for a substantial increase in both students and faculty. The first step in faculty expansion was taken this year, with funding of 54 new lines university-wide. The distribution of those lines was based largely on student enrollment growth. The College of Agriculture was allocated 4 new lines. We can expect to participate in this growth model at a similar level unless major enrollment shifts occur. The academic departments that are not growing enrollment are unlikely to see any additional faculty positions. In fact, shrinking enrollment in some units should be a cause for concern about ability to retain lines that become vacant.

Competitive support for graduate students is an increasing challenge for the academic departments. However, we believe that many of our departments are hard-funded for research assistantships at least as well as their benchmarks. It is improbable that future university or college budgets will redirect resources for additional graduate research assistantship support. Operation of doctoral programs, even at their current size, will probably depend increasingly upon extramural dollars.

4) Program support encompasses business operations, computing and information technology, communications, and a wide variety of other infrastructure issues.

- Business and accounting functions at both the department and college level have been stressed by the university-wide adoption of new SAP administrative computing systems during 2006 and 2007. Full implementation of these systems and effective use of their capacities is likely to be a continuing challenge for months to come. The college and many departments have significantly upgraded staff expertise to cope with these changes. Some departments struggle.
- The remarkable growth in extramural funding, special projects, and research initiatives during the last 5 years has stretched grants and project management staff to the limits. Further growth may require additional staff with a higher level of expertise.
- IT functions in the college have been intensively reviewed, planned and reorganized. Yet several units continue to report limitations in IT support. Also, the demand for distance learning and web-based programming continues to increase and may not be adequately supported by current hardware, software systems or personnel.

SUMMARY

A half decade of enhancements in extramural funding, undergraduate enrollment and extension operations place the College of Agriculture in a position of strength, within the University of Kentucky and around the Commonwealth of Kentucky. The stature, level of excellence, and record of achievement has, by many measures, advanced substantially.

However, the College faculty and administration now perceive that further progress may be severely limited by current infrastructure and capacity. We anticipate that this self-study and review will lead to a better analysis of the issue, refine new strategies for better use of current resources, improve definition of infrastructure priorities, and refine justification and plans for securing the resources needed to sustain growth and advancement in the next decade.