

College of Agriculture: Academic Plan III Issues 2

The mission of The College of Agriculture at the University of Wyoming is to be the proactive leader in education and scholarship to cultivate healthy, sustainable systems for Wyoming's agriculture, environment and natural resources, and rural communities. Our vision is to serve people through the application the land grant principles of learning, engagement, and discovery.

Issues to consider in the next UW College of Agriculture academic plan are outlined here. These issues are linked to challenges presented by the University of Wyoming Office of Academic Affairs in the document, *Creation of the Future 2* (http://uwadmnweb.uwyo.edu/AcadAffairs/Univ_plan/creation_of_the_future_2.pdf). Input was solicited from the public via listening sessions held around the state. Issues were identified also through discussions with the College of Agriculture's Leadership team and faculty. Individuals, departments, and others interested in the college's future are encouraged to send comments to agrdean@uwyo.edu. Currently, each department and program is developing its academic plan. All departments and programs should carefully consider the College of Agriculture Academic Plan III Issues and the University's *Creation of the Future* to ensure that their own academic plans align with those documents. According to the timeline presented by the University, departments and units are asked to send draft plans to the Dean, College of Agriculture no later than September 24, 2008 to allow the dean's office to submit those plans to the University by October 1, 2008. The college plan will be due to the University by November 1, 2008.

Significant issues identified in public visioning sessions for the previous academic plan still resonate. They include the importance of (a) environment, and improved public understanding of agriculture, private and public land issues; (b) forage-based livestock systems, and healthy livestock and wildlife; (c) the family farm/ranch (youth development and young people in agriculture); (d) vibrant small communities, community leadership and information basis for decision-making; (e) profitability of agriculture and economic diversity including niches and value-added products; (f) agriculture, multiple use, and the endangered species act; (g) water quality and availability; (h) reclamation of disturbed lands and waters; and (i) involvement of local citizens and agriculture in community and state decision making processes.

Fundamental needs for this college were also identified and include (i) developing a culture of lifelong learning and leadership in our students, (ii) providing sound fundamental and applied research as a foundation for our other endeavors, (iii) identification of unbiased, research-based solutions to problems, (iv) reaching out and engaging Wyoming's people, (v) providing for faculty success, and (vi) addressing significant issues facing agriculture, renewable natural resources, and rural communities.

The college has made significant progress from Academic Plan II found at http://www.uwyo.edu/AgCollege/Strategic_Issues_files/AgAcademicPlanII.htm.

Our Academic Plan II focused on teaching and learning, engagement, research, and resource allocation. A short summary of this progress follows:

Teaching and Learning: Assessment was integral to the last plan. Departments and programs that support undergraduate and graduate education have developed and continue to refine assessment plans. Inquiry based learning, such as undergraduate research projects are supported. Interdisciplinary undergraduate programs in agroecology, biology, and microbiology are in place. Interdisciplinary graduate programs in Molecular and Cellular Life Sciences and Ecology were developed. The college is integrating and teaching courses with the Haub School of Environment and Natural Resources. The Department of Agricultural and Applied Economics is working with the College of Business to cross-list mutually beneficial service courses. The newly developed Bachelor of Applied Science (BAS) Program has been established and attracted 22 majors within the first year. College faculty members are lead participants in teaching the WWAMI medical students, helping educate the next generation of physicians in the state. This college has taken an active role campus-wide in evaluating and rewarding teaching performance. To the extent possible, lifelong learning habits and leadership skills are being presented in University Studies Program (general education) courses offered through this college. The relevance of our college degree offerings is evidenced by a continued steady increase in undergraduate enrolments. A book on teaching and learning in this college was published in 2008, providing a voice for faculty across disciplines showcasing our teaching philosophies and experiences.

Engagement: The College has engaged a variety of partners and collaborators in accomplishing a number of outreach tasks. Communications from the college have been enhanced. We send out a general college newsletter quarterly. In addition we publish our research progress in *Reflections* and *Extension Connections* magazines. The College has columns in the *Cow Country* magazine and is present as a guest at the *Wyoming Livestock Roundup*. Less formally, we meet regularly with constituents at various gatherings, including the annual meeting of the Wyoming County Commissioners. The Cooperative Extension Service Strategic Plan has been implemented. Five state-wide initiatives are progressing, providing education across county lines. Educators are developing specialty expertise that can be shared with others statewide. The community development group has developed leadership training for communities. A board training handbook has been developed to help educate and guide local decision-making boards. The small acreage program has been developed to help educate the public about land stewardship, especially those with small parcels of land. The extension service has also moved to assist communities impacted by energy development by collaborating with local government and business entities to place community development specialists in Sublette and Sweetwater Counties. The college has led the formation of a campus specialists list available internally to educators, to help clients get in touch with expertise university-wide, not just in the college. The Wyoming State Veterinary Laboratory has completed a rigorous accreditation cycle and provides exemplary service for animal health interests. The Centsible Nutrition, AgriAbility, and WIN Wyoming programs have connections

throughout the state. The college has also done research and outreach to assess the local fiscal costs of growth in the rural areas of the state.

Research: The College of Agriculture developed and dedicated the James C. Hageman Sustainable Agriculture Research and Extension Center (SAREC). This state-of-the-art facility will be completed within the next 18 months. This will complete a 4-phase build out for this new center. College assets in Laramie were combined into the Laramie Research and Extension Center which is now part of the Agricultural Experiment Station. The internal experiment station grants program focuses on encouraging our newest faculty into collaborative relationships to investigate issues important in Wyoming. The College of Agriculture continues to lead the University of Wyoming, on a per-faculty-member basis, in attracting resources to fund our research. The college's substantial expertise in arid land restoration and reclamation was consolidated into the new, Wyoming Restoration, Reclamation Ecology Center, housed in the College of Agriculture's Renewable Resources Department.

Resource Allocation: The college completed a comprehensive review of space allocation. Many smaller classrooms have been renovated. Larger classrooms are now near the top of the University of Wyoming's list of classrooms needing attention. Two of the largest lecture rooms in the agriculture building are currently in renovation. The allocation of graduate assistants to departments and programs is based on a performance rubric designed to maximize leverage for those who bring graduate students to the program via outside funding. Resources were attracted to help bolster service positions in the Wyoming State Veterinary Laboratory, agronomy extension in the Big Horn Basin, and the build-out at our new SAREC. New faculty lines resulting from this effort include a new animal disease specialist at the Wyoming State Veterinary Laboratory, and an economist and second livestock extension specialist to be housed at SAREC. Involvement of additional faculty expertise from Renewable Resources and Agricultural and Applied Economics now promotes scientific and economic analysis as part of projects targeting energy, land, water, wildlife, and agricultural issues.

This document illustrates some issues that will need new, enhanced, or continued attention in the next academic plan relative to the progress outlined above. Issues addressed here pay attention to the 5 motifs suggested in *Creation of the Future 2*. Thus, issues will address i) building depth versus adding breadth, ii) reinforcing areas of distinction, iii) promoting access to higher education, iv) fostering excellence, and v) cultivating leadership. As the college develops its plans, general guidance is suggested by motifs i) and ii) as that will provide context for the remaining discussion. The other motifs will be discussed in more depth related to the college's mission areas. Resource allocation and procurement is mentioned next, followed by a list of some specific proposals for discussion.

Depth vs. Breadth

The College of Agriculture has a broad number of programs. However, as one constituent put it, "the College of Agriculture is, and should be, the 'green college' on

campus”. We are challenged to bring our many parts together in unique ways to address issues related to the renewable natural resources in this state.

- To frame this thinking and to help give focus to this discussion, should the College of Agriculture be the College of Agriculture and Natural Resources?
- What links, organizational structures, programs, and partners on and off campus can be linked?
- Can we enhance circulation of, and continue to improve, our publications?
- Should conservation, energy, and locally sustainable food production be in the curriculum?

Areas of Distinction

This college has, and will continue to focus on the environment and natural resources, applied life sciences, and professions critical to this region. A partial list of areas to maintain or develop include water quantity and quality, air quality, restoration and reclamation of disturbed arid lands, invasive weeds and other pests, small acreages, diseases common to wildlife and domestic animals, sustainable agricultural practices, community and regional planning and development, rural community leadership, economic based decision making for small businesses and small rural communities, nutrition and health of families and animals, youth development, biological materials such as spider-silk, and developing the life-sciences needed to address these issues.

With the listed areas as the basis for college programs, one new area to address is the role of this college as a leader in scholarship related to renewable natural resources in the energy programs of the state and university. This college already has considerable interest in energy-related areas such as water, rural community and human impacts of energy development, risk management, and how to restore disturbed arid lands. These are all areas that relate well to our federal mandate and certainly are on the minds of constituents around the state. While it is understood that the college cannot be everything to everybody, we can address many of these areas within our mission of learning, discovery, and engagement.

- How can we further address energy?
- What is the best approach to community planning issues related to development pressures?
- Who will be our partners? When to lead? When to follow?

Access

The college of agriculture, being an externally focused and engaged part of the land grant university, has a mandate to ensure that those who desire higher learning have access to UW programs.

Part of access is being attentive to diversity issues, within and outside the college.

- What can we do to encourage and celebrate diversity?
- This is a global environment. Can the college find innovative ways to keep exposing our faculty and students to international issues, places and people?

At the undergraduate level, high school graduation numbers are falling in the region.

- Can we enhance our marketing? Are there items such as improving our WWW presence, and other media approaches to students and younger professionals in our schools?
- How do we let students know there are programs in the college ranging from production agriculture to pre-medicine, many of which offer rewarding careers?
- Where can we go and how do we recruit these students?
- Should internal (within UW) recruiting be enhanced by having our best instructors teaching entry level classes? Does the college have the assets to teach more entry-level service courses in biology and/or business?
- Can we engage our recent graduates to inform people about our programs (e.g. Alumni Ambassadors)?
- We have an office in every county in Wyoming. Can the strong ties in the communities of our county offices be leveraged in a proactive fashion?
- What links and ways exist that would engage counselors and career guidance staff at the high schools and community colleges in the region?
- Is there a list of careers available in all our areas that we can develop and share?
- How can we reach students beyond the region?
- Would a web and/or facebook link to jobs list help with career decisions and internship possibilities as well as be useful as a recruiting tool?
- Is there room for more FIG's in this college?
- Would more courses offered in shorter, intensive blocks enhance access?
- Where will we find the resources needed for enhanced marketing?

Access to higher education is a critical piece to the state's sustainability. One way the college can contribute to that is through sponsorship of the Bachelor's of Applied Sciences degree (BAS). The BAS allows students with an AAS Degree from a Wyoming community college and a minimum of two years of work experience to return to the university, by distance, to obtain a bachelor's degree that carries with it a variety of life-learning, leadership, and management skills. The BAS degree must be rigorous in order to maintain the credibility of all of our other programs.

- What other UW and College assets can be leveraged to support the BAS?

Our graduate programs need attention (see "Excellence" below). Attracting quality graduate students is currently very competitive. We need to be certain that the number of GA stipends available, the amount of the stipends, interdisciplinary training, and program depth support our efforts to attract quality graduate students.

- How can we attract more high quality graduate students?

- The college supports a campus proposal to attract new state-funded GA's. However, can we help ourselves (e.g. private support)?
- How can we involve more GA's in teaching? Should there be a college policy that a TA experience be required for all GA's seeking an academic career?
- More researchers are opting to hire postgraduate researchers rather than graduate students. Admittedly, the PGR provides a more immediate and greater return if only research output is considered. However, is that what we are about? What should the balance between PGR's and graduate education be? Are there incentives for those who write grants to include more graduate assistants?

Access to college research, extension, and programs involves everyone in the college. The college has begun to develop the concept of learning centers in communities, housing multiple UW units to help people find and access our programs. Research and Extension Centers are a wonderful asset for the college and university, and an added point of access.

- What can we do to further learning centers?
- Are there ways of more faculty members from more diverse areas on the UW campus in using centers? For example, might biology and ecology-minded faculty and graduate students in being involved in using R & E facilities?

Research and extension centers, extension offices, and Laramie campus will all need to be involved in marketing. Marketing is not just advertising. Fundamentally, it involves engaging those who need, or might be interested in, our services. The college plan must address marketing programs for all aspects of our mission.

Excellence

A recent National Academy of Science meeting on agricultural education addressed society's need for an educated workforce. Attributes for college graduates identified in that symposium include development of an open mind for lifelong learning and adaptability, outstanding interpersonal awareness and communication (including language), conflict resolution skills, and leadership skills. Leadership development is mentioned below. Progress has already been made in several areas in our curriculum. For example, the agroecology major has a small core of classes, and then a large body of coursework from which students can design their own program. Many students work closely with partners in the Haub School of Environment and Natural Resources.

- What must be done with our curriculum to address these topics?
- Are there other curriculum areas where we can to explore similar links with the Haub School of ENR?
- As the curriculum is reviewed, what other approaches can faculty, college and university take to encourage these attributes and experiences for students? Suggestions for a start might be to conceptually look at the education of an undergraduate in terms of more traditional, database-imparting lecture type

courses in the first few years, followed by upper division courses that are more case, situation, hands-on, and participatory in nature.

- What opportunities are there for interdisciplinary capstone courses? Should all BA/BS programs offer a capstone experience? What about community and service learning opportunities? Would promotion of minor degrees enhance interdisciplinarity?
- What can we do to facilitate internships or other field experiences prior to graduation? Perhaps all graduates of our programs should be required to have an internship or other relevant workplace experience.
- There is considerable strength on this campus in plant biology. Are there others who might like to work within the agroecology rubric to develop a concentration in that area (e.g. botany)?
- Newly proposed national collaborations for sharing and delivery of courses/curricula across the land grant system, such as AG*IDEA, may have the potential to reach new audiences with UW courses. UW students would also benefit from course offerings from elsewhere and distance education efforts may be enhanced. Should we join this consortium?

In graduate education, do we want to clone ourselves or create something new? In creating something new, perhaps graduate education not only needs to be encouraged in the college, but also should be made more interdisciplinary. The last academic plan suggested that graduate programs should be reviewed and either strengthened, merged with others, or sunsetted. That did not happen, but needs to take place. Outstanding new faculty members have been hired into programs that have not traditionally had access to a PhD program. Given the college's need to focus on the natural resources, perhaps this should be an internal process.

- Is there room for an interdisciplinary agroecology graduate degree? What about an interdisciplinary PhD in Resource Management?
- Could there be PhD programs shared with partners in ENR, business, pharmacology, law, botany, or zoology (potential partners).
- Should departmental graduate programs be sunsetted in favor of targeted interdisciplinary programs?
- The life sciences have developed programs at the molecular and ecological level. Is there support for an organism-level interdisciplinary program in the life sciences that would provide access for faculty to a PhD program?

The extension service has developed its new area team model. Many areas of depth named above involve extension. Extension will review its initiatives to be sure programs are on target. Programs such as the small acreage program are strong and can grow. The program in community planning and development has a long, positive history. New topics are appearing in terms of energy impacted communities and the need for general rural planning. Renewable energy programming is being encouraged by federal partners as well as state needs. Links with others on campus with service connections have been identified via an internal internet site developed by CES.

- What can the extension service do? What sort of partners (e.g. engineering, business, public administration, School of Energy Resources, and School of Environment and Natural Resources, and health sciences) will be helpful?
- Can the college, led by extension, consider what can be done on short notice to move rapidly to address emerging natural resource issues?
- Are there links to others on campus that have important expertise for the state?

Likewise our research programs closely follow areas of excellence. We need to identify gaps in our faculty research programs and expertise. Specifically, are we bringing all we can to water issues, energy (especially renewable wind and solar, efficiency, and restoration ecology), community planning, animal diseases, and other emerging areas? The college is challenged to continue building on its excellent record of attracting outside funding and collaboration to address issues important to natural resources and the life sciences. The Agricultural Experiment Station has begun to identify niches for its 4 centers and other assets used for applied research.

- Are the niches identified for our R&E centers appropriate?
- Can more faculty from the college and campus be attracted to use the centers?
- Can we enhance resources to address research problems important in the state?
- Can we improve the research environment by better managing issues related to grant management (e.g. sick leave), and maintenance of common research support equipment?

Excellence in the college starts and ends with an outstanding faculty and staff. We must be sure our departments are adequately led and organized to support faculty.

- Are we attracting and retaining outstanding faculty members?
- What can we further support faculty and staff development and advancement?
- What can we do to ensure a quality environment for staff to work?

The college will review if it is structured to adequately address the natural resource issues raised. The alignment of our programs in plant biology and ecology campus wide should be discussed. Is there a better way to align faculty than currently done? It has been suggested that two departments, one focused on intensive management of plants and insects and the other on extensive, ecological issues may make more sense.

- What arrangements might be attractive to faculty in other programs such as botany and wildlife biology?
- If programs are realigned, what sorts of programs might interest and introduce faculty to the concept?
- Would the entomology faculty be more appropriately aligned with the more intensive management studies in plant sciences?

Leadership

Leadership development is important at all levels. This would include leadership development for students, stakeholders in the state and region, faculty, and staff. The extension service has developed community leadership development programs in many communities of the state. Board leadership training is being made available to citizens serving on county and municipal government boards across the state.

- Should we offer leadership development programs statewide?
- Can board leadership training be expanded?
- Tied in with community leadership development is the fostering of land, water, and economic planning skills in communities of Wyoming. Current programs are available thorough extension personnel. Is there sufficient depth of researchers and extension personnel in that area?
- Planning personnel are on the ground in a couple of energy impacted communities. Could other communities benefit from this type of effort?

Development of leadership in our students is an important task. The college of agriculture will need to identify new approaches to the curriculum as mentioned above that will help with leadership development. The student garden on campus is an excellent example of how students can take leadership roles and develop something of value for the entire community as well as their own benefit. It is hoped this program might grow and involve more people in sustainable agricultural practice. Service learning opportunities might be found in topics like community planning, nutrition, and perhaps in other areas. Undergraduate research experiences help develop students. The Wyoming State Veterinary Laboratory provides paid learning work activities that involve a lot of responsibility. Other service units might also be able to do more with students. A great way to expand student experience in leadership is the internship.

- Can student leadership opportunities be nurtured and expanded?
- As hinted above, is it time to explore a mandatory internship for all graduates?
- International experiences help students grow. What must be done to expand those opportunities and to attract students to those programs?
- Would a leadership development course be useful or of interest? Perhaps partners might be found for such an endeavor from a variety of sources both on and off campus.

Faculty and staff development cannot be ignored. Programs are available to faculty and department heads such as the USDA administrative development program for promising young faculty, opportunities to fund department head development, and professional experiences such as international programs.

- What can the college and departments do to identify and expand programs to ensure faculty development?
- Staff development opportunities for staff also will need continued attention under the leadership of the Ag Business Office.

Resource and Administrative

The college will need outside help as it seeks to expand opportunities for students, faculty, and acquisition of resources. To that end, the college's board of advisors is being revamped. Three subcommittees have been created to deal with college fund raising and development, marketing and public relations (includes recruitment), and student placement including internships. This model will need to be rolled out, refined, and activated. Active membership and leadership on this board must be fostered.

The college has reviewed the allocation of space and support budgets. GA allocations are now made by rubric that favors grant-funded GA generation. However, that program remains cumbersome and not well understood. The GA allocation rubric needs to be reviewed. Further, consolidation of Laramie research assets will need to be completed. Allocation of staff needs to be reviewed. This is a sensitive issue and will need a considered approach. The college will need to explore how the dean reallocates open positions during the next planning cycle. Can this be done in such a manner that extra dollars can be captured from open positions being hired at an entry level to create new staff positions?

The college has inadequate facilities for some programs. The state is demanding more diagnostics and research regarding diseases common to humans and animals. These diseases include brucellosis, plague, anthrax, and rabbit fever among others. Unfortunately, the federal government regulations have made it very difficult to address these issues without adequate, approved space. Building or adding adequate Biosafety Level III space to the veterinary facility is a high priority.

The animal science and molecular biology building was never completed as originally planned. Those very productive and important programs are jammed in an inadequately sized building. Is molecular biology located in the right place? Should the existing facility be enlarged? The next cycle will also involve planning and seeking funds to address laboratory and teaching space needs for our molecular programs.

Building done in the College of Agriculture should consider the green aspects of construction and housing to be consistent with our natural resources focus. One step in this direction means we must start at home and consider renovation of the old agriculture building, not just because of its 60 year old age, but to incorporate a green philosophy. Visitors, prospective students, and families frequently comment on the age and deteriorated condition of the building. The Agriculture building needs to rise to the contemporary standards set by the renovated Health Sciences, Business, and Library Buildings. How can we project modernism, state of the art sciences, and professionalism with this deteriorated facility?

Though space is less tight on the main campus, it is still a major concern. The college houses several natural resource collections of insects and plants. Can these items find space in the new Berry building of natural resources?

Budget allocations between extension, research, and instruction at the state and federal funding levels have not been reviewed in at least 7 years. This exercise will need to be done early in this next planning cycle to be sure all areas are fairly addressed.

Major Initiatives

1. The college is considering making a big investment in energy. Perhaps it is time to approach funding agencies about developing a new Research and Extension Center, perhaps located in the Powder River Basin. This center would focus on energy impacts including community planning and development, restoration/reclamation ecology, water quality and quantity, air quality, small acreages, open space, and renewable energy and efficiency in the home and at the enterprise level. Research and extension units are encouraged to suggest ideas about how this might happen. Partners within and off campus might also be engaged in this discussion. Ideas include the business council, governor's office, College of Engineering, College of Business, College of Health Sciences, and the College of Arts and Sciences. Though a suggestion of location is made, it is expected that the program would have statewide impacts and could involve staffing, a new center, and enhanced field capacity.
2. The governor completed a program in Casper fall, 2007 on Community Planning. The extension service has had educational and facilitating expertise in this area through the work of many faculty members. However the program lacks depth. What new faculty and field assets might help the college have a bigger impact?
3. Much has been said about interdisciplinary programs. A new alignment of our plant and entomology programs involving faculty from other programs is one step. However at the graduate level, some faculty members in the college still do not have access to a PhD program. In a university that is growing its programs in excellence and for programs that are hiring outstanding people, this is unacceptable. For many in the life sciences (e.g. Family and Consumer Sciences; Veterinary Sciences; some in Animal Sciences) there is little between the molecule (MCLS) and the environment (Ecology) for the organism level studies. Thus, discussions that are ongoing now to develop an organism-level graduate program are encouraged. For faculty in Agriculture and Applied Economics, this issue also rings true. Are there alliances with ENR or business that might also make sense?