

**Final
Academic Plan
Department of Animal Science
2009-2014**

Mission and Aspirations

Mission: To enhance the viability and long-term sustainability of animal agriculture by advancing current integrated discovery, learning and engagement programs that provide unbiased, research-based information to our student and producer clientele while also enhancing the health and well-being of our consuming public.

Departmental Goals:

Discovery - Conduct research necessary to enhance the sustainability of animal agriculture in a dynamic economic paradigm while maintaining or improving the renewable resources and health of our consumer clientele through a balance of basic and applied studies.

Learning - Provide students with an appropriate depth of knowledge and ability to communicate, to critically evaluate information and apply it in a manner allowing them to be successful problem-solvers while maintaining a thirst for knowledge over their lifetime.

Engagement – Use an interdisciplinary approach to interpret research and develop educational programs delivered in several approaches in order to anticipate and address needs of animal agriculture and consumer clientele groups.

Previous Planning/Accomplishments

- Have strengthened collaborative interdisciplinary research efforts of Ruminant Nutrition, Meat Science, and Livestock Production with Molecular and Cellular Life Sciences (MCLS), Fetal Programming and Reproductive Biology.
- Have leveraged the five state-funded graduate assistantships by splitting them and requiring soft-money funding of the balance. Assignments are made based on a tiered system giving priority to those who have soft-money funding. Currently we have 20 funded ANSC graduate students, the highest number in the past 10 years and a 43.9% increase over the average from 1998-2002.
- New faculty hires have all attended grant-writing workshops.
- New faculty hires have advanced gender diversity within the Department.
- Established a Laramie Research and Extension Center with a Livestock/Facilities Utilization Committee for more effective and efficient utilization of animals and facilities.
- Have utilized both Departmental and Joint (ANVS) Curriculum Committees on a regular basis to assess both undergraduate and graduate course offerings and continue to assess student needs.
- Have expanded internship opportunities for undergraduate students and continue to encourage students to take advantage of these experiential learning experiences.
- Assessment progress has included exit surveys completed by B.S., M.S., and Ph.D. students for consideration of curricular changes; in addition, our ANSC curriculum has been mapped in relation to our student learning outcomes.
- Departmental specialists continue to support Extension initiatives in Profitability and Sustainability of Agricultural Systems and Nutrition and Food Safety with our limited Extension FTE's.

- Expanded use of Departmental Website to share research results and communicate with our clientele.
- Have made annual departmental reports available in County Extension Offices as well as on our website.
- Department regularly communicates with clientele through articles published in *Cow Country* and *WY Livestock Roundup* as well as other regional livestock publications.

Relevant Institutional Issues

The Department of Animal Science has faculty subject matter expertise concentrated in four general areas. These include nutrition, reproductive biology, meat science and food technology, and livestock production systems. New departmental hires in food microbiology and extension/livestock production systems have added depth to all four areas of expertise and allow additional contributions to areas of distinction defined in Creation of the Future 3.

The Department of Animal Science contributes to several areas of distinction as outlined in the document. Our Meat Science and Food Technology and Reproductive Biology programs are major contributors to the Life Sciences initiative. The Center for the Study of Fetal Programming (CSFP) integrates both of these interdisciplinary programs along with our nutrition and livestock production systems groups. It uses sheep and beef animal models to conduct biomedical research with direct implications to human health, as well as problems associated with beef and sheep production systems which are so relevant to range livestock production in Wyoming and the West.

In addition to being associated with the Life Sciences, the animal nutrition group is also aligned with the area of distinction defined as a Critical Area of Science and Technology Unique to the Environment. A major goal of this group along with our Livestock Production Systems group is to economically produce value-added products from sustainable, forage-based livestock and agronomic systems. In the current economic environment, this is a critical component of profitable and sustainable livestock production systems in Wyoming and throughout the West.

Our Meat Science and Food Technology program promotes improved human health through enhanced meat animal products and improvements in food safety. New faculty members in this area have added a molecular dimension to animal growth, meat science and food microbiology, providing further collaboration with the interdisciplinary microbiology program since food safety and human health issues were described action items in previous academic plans. Meat Science/Food Technology is a critical component that connects reproductive biology/CSFP, animal nutrition and sustainable livestock production systems to the health and well-being of the consuming public.

Our Ruminant Nutrition program has recently initiated research in Grass Fed Beef, a re-emerging industry alternative in beef cattle production systems in the intermountain west with growing emphasis in Wyoming.

Action Items

Discovery

Situation - Graduate students energize research programs. Over the past 7 years, the number of departmental state-supported graduate assistantships have dropped by 37.5% (from 8 to 5). We have leveraged those received by splitting and assigning them on a tiered-priority system giving benefit to partial grant-funding. We currently have 20

graduate students on stipends which is approximately a 40% increase over our four-year rolling average.

Action 1: Work with upper administration to make an increase in state-funded graduate assistantships a priority so as to double current state-funded GA's. Seventy-five percent of the new GA's should be directed toward Ph.D. students.

Responsibility: VP for Academic Affairs/Dean of Graduate School/Head/Dean of Ag College/Head. **Timeline:** 2009-2014.

Action 2: Work with the College of Agriculture's Development Office to identify donors willing to establish new endowments to support graduate assistantships in Animal Science. **Responsibility:** Head/College Director of Development/faculty. **Timeline:** 2009-2014.

Action 3: Work within our current budget framework to provide a pool of additional travel monies for each of the four areas of scientific expertise within our department to help fund travel for faculty and/or graduate students to attend scientific meets to further networking with scientists from peer institutions.

Responsibility: Head. **Completed by August 1, 2009 and continuing annually through 2014 as long as budgets will allow.**

Action 4: Request review of Departmental graduate program by Dean of the Graduate School. **Responsibility:** Head/Dean of Graduate School. **Constructive critique to enhance graduate education to be reflected in future graduate student assessments. Completed by June 30th, 2010.**

Situation – Continue to strengthen collaborative interdisciplinary research efforts across campus.

Action 5: Additional depth provided by new faculty hires will expand integrated research efforts and extramural funding from USDA, NIH, NSF and SARE in Sustainable Livestock Production Systems, Food Safety, and MCLS while continuing development and faculty participation in Reproductive Biology and Fetal Programming. **Responsibility:** Head/faculty. **Continue to increase extramural funding as well as funding for collaborative projects. Timeline:** June 30, 2010 and annually thereafter.

Action 6: Expand Livestock/Facilities Utilization Committee to include a faculty member of each area of the four focus areas within the Department, Laramie R&E Center Superintendent, unit managers, meat lab manager, a SAREC/ANSC liaison and two faculty members from other Departments within the College. Committee will schedule funded proposals based on mission of department, college and university. **Responsibility:** Head/Director of AES/Faculty. **Timeline:** June 30th, 2010.

Action 7: Continue to incorporate costs associated with feed and livestock use into grant proposals while encouraging collaborative, system-based research at SAREC as well as the McGuire Ranch. **Responsibility:** Head/Director of AES/Faculty. **Expanded number of projects using the facilities; Increase of funding associated with long-term animal projects. Timeline:** completed by end of FY 2009 and annually thereafter.

Learning

Situation - Whereas the knowledge and skills needed by graduates entering the work force are continually changing, our ANVS curriculum and course offerings need to be evaluated annually based upon assessment at both undergraduate and graduate levels.

Action 8: Develop an undergraduate and graduate student recruitment and retention plan. **Responsibility: Head/faculty/staff. Completed by July 1, 2010.**

Action 9: Develop a competitive Departmental Faculty Education Enhancement Grant (\$2000) to cover expenses for an ANSC faculty member to attend a professional improvement workshop annually to further enhance their teaching skills. **Responsibility: Head & Faculty (initially completed by end of 2010 and annually thereafter).**

Action 10: Evaluate ANVS options to assure they are best serving the needs of our students. Consider advantages of combining or restructuring existing options or developing new options to enhance marketability of our programs and usefulness to our students. With the upcoming addition of a new equine specialist, an equine or possibly an inclusive companion animal option should be evaluated. **Responsibility: Head/Departmental Curriculum Committee/faculty. Measures: Increase in number of majors; percentage increase in student employment and graduate study opportunities. Timeline: Completed by end of 2012.**

Action 11: Define a process to assist students in the Pre-Vet Option who do not have an adequate GPA to have a legitimate chance to gain entrance to a College of Veterinary Medicine. This will include identifying one ANSC faculty member who can discuss alternative career opportunities as well as potential alternative options of study. Website will also be expanded to contain more discussion of potential careers related to our ANVS options of study. **Responsibility: Head/Departmental Curriculum Committee/faculty. Completed by start of 2009-2010 academic year.**

Action 12: Work with the Ag College Office of Academic Programs to get ANVS assessment activities back on track including a more formalized, revised written plan and a logical timeline for implementation. This written plan should include those assessment practices already implemented, both direct and indirect assessment tools, an analysis of data, and a process for implementing changes suggested from assessment data analyses. It will continue to include the administration of planned surveys to graduates who are one and four years post-graduation. Also included will be planned feedback from Internship employers as well as feedback from other employers of our students. **Responsibility: Head/Joint Curriculum Committee (JCC). Revised plan and timeline competed prior to start of fall 2009 semester; Implementation completed by start of fall 2010 semester and each year thereafter.**

Action 13: Continue to increase the number of students participating in internships. **Responsibility: Head/Internship Coordinator/faculty. Completed by end of 2009-2010 academic year and annually thereafter.**

Action 14: Develop informational collaborations with International Programs to enhance student awareness of international study opportunities. **Responsibility:** Head/faculty. **Timeline:** 2009-2014.

Action 15: Explore increasing access to ANSC programs by offering credit courses to non-traditional students and opportunities via web-based and other distance learning technologies, particularly in the equine science area. **Responsibility:** Head/Departmental Curriculum Committee/JCC/interested faculty. **Timeline:** 2009-2014.

Action 16: Explore collaborative distance learning opportunities with other institutions to provide access to courses where holes in our curriculum exist (i.e., Dairy or Poultry Science courses) or where we do not have adequate student numbers for courses to be taught on a regular basis (i.e., Swine Production and Management; Food Chemistry). **Responsibility:** Head/Departmental Curriculum Committee/JCC/interested faculty. **Timeline:** 2009-2014.

Engagement

Situation: Our external clientele have increasingly tight schedules and are squeezed by economic constraints. Animal Science Extension Specialists as well as teaching and research faculty provide lifelong learning opportunities via multiple delivery systems. We provide unbiased, research-based information for livestock producers and consumers to make informed choices and solve problems.

Action 17: Support extension programming efforts associated with the Profitable and Sustainable Agricultural Systems (PSAS), Nutrition and Food Safety, and 4-H and Youth Development state initiative teams, as well as Livestock and Small Acreage cross-initiative issue teams. **Responsibility:** Extension Specialists/Head. **Timeline:** 2009-2014.

Action 18: Continue to collaborate with commodity groups and organizations throughout WY, the region and the nation in support of the livestock industries (i.e., WSGA, WWGA, WBCIA, NCBA, WY Business Council, WY Beef Council, WY Meat Processors, WDA-CHS, etc.). **Responsibility:** Extension Specialists/Head/All Faculty. **Timeline:** 2009-2014.

Action 19: Develop additional clientele educational models (e.g., WYO BEEF Short Course) utilizing hands-on educational techniques. **Responsibility:** Head/Extension Specialists. **Timeline:** By end of 2009 and annually thereafter. **Measured by number of programs offered.**

Action 20: Continue to develop and expand the departmental website as a means of sharing research-based information and communicating with our clientele. **Responsibility:** Head/Faculty/Staff. **Measures:** Feedback from clientele. **Timeline:** 2009-2014.

Action 21: Enhance methods of distributing research-based information for use by clientele: Regularly communicate with Area Extension Educators with monthly e-notes containing relevant research summaries for use in their newsletters, newspaper columns and radio programs; Provide annual training and

educational opportunities for Educators; Develop monthly popular press articles that discuss research, relevant industry issues and promotes Departmental activities; Make annual reports available on the Departmental website.

Responsibility: Head/Extension Specialists/All Faculty/Staff. Timeline: 2009-2014. Measures: Number of items requested and distributed.