

Department of Animal Sciences Strategic Plan 2009-2013



Department of Animal Sciences Strategic Plan, 2009-2013

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Department of Animal Sciences Strategic Planning: 2009-2013

I. Executive Summary

The Department of Animal Sciences at The Ohio State University has the overarching aim to create and disseminate knowledge to “teach people for the betterment of animal- and human-kind” through its educational, teaching, research and outreach endeavors.

A. Vision of the Department of Animal Sciences – We will be recognized as the premier provider in Ohio, and one of the top academic units in the nation, for an undergraduate education in animal sciences. The Department will be identified nationally and internationally as one of the most outstanding academic units for a graduate education in animal sciences. The Department will have a reputation in the State, nationally and internationally for being a leader in developing new knowledge in the biological sciences for food producing animals, horses, and microbes related to anaerobic fermentation; animal health and food safety; and dissemination of this knowledge to the scientific community and the public. The Department will facilitate the development of students who will be prepared to become leaders and effective citizens, and be knowledgeable about our world and the production of animals for food, fiber, recreation, companion purposes, and energy through conversion of biomass to energy.

B. Mission of the Department of Animal Sciences – Our mission is to discover and communicate knowledge about animals (including microbes) and their products. The delivery of this mission is directed to the students of The Ohio State University, the citizens of Ohio and other parts of the world, the scientific community, stakeholders of the Department, and others who are interested in animals used for food and fiber production, recreation and companion purposes (*Appointment, Promotion and Tenure Criteria and Procedures, Department of Animal Sciences, December 12, 2007*).

C. Summary of Focus

The 2001-2005 Strategic Plan emphasized the necessity to focus resources in two areas of excellence in the Department: Nutritional Sciences and Tissue (reproductive, mammary, muscle, adipose and connective) Biology. Significant progress was made in this regard (see Section III) in faculty hires, facility renovation and reallocation and resource expenditures (e.g., graduate student stipends, start-up funding, equipment allocations, etc.). What was not addressed in that strategic plan was the emergence of new opportunities and challenges in both US and global agriculture in the realms of bioenergy/biofuels and animal welfare. The Department of Animal Sciences formed key alliances and made strategic investments in both sectors and has emerged as a leader in the area of converting biomass to energy and the associated science of microbial ecology. In addition, OSU has emerged as the only non-Australian partner in the

internationally renowned Animal Welfare Science Centre located in Victoria Australia. The 2009-2013 plan continues to build the traditional strengths of the Department of Animal Sciences toward national preeminence, while including new emphases on building research and graduate educational excellence in the bioenergy/biofuels realm and teaching excellence in the area of human and animal interactions. These traditional and new areas of emphasis form the centerpiece of the new plan for the Department of Animal Sciences, organized around three interrelated systems:

- 1) Tissue and Food Biology,
- 2) Nutritional Sciences, and
- 3) Biomass to Energy,

each in the context of the CFAES' ecological paradigm. This plan, which aligns with the Signature Focus Areas identified by the CFAES in its Strategic Plan (Food Security, Production and Human Health; Environmental Quality and Sustainability; and Advanced Bio-Energy and Bio-Based Products) and contributes to the Targeted Investment in Excellence programs in which the CFAES is involved, provides excellent opportunities for collaboration, discovery and research/educational leadership. Fundamental to this plan is the commitment to assure the relevance of our programs in meeting the practical needs of our stakeholders, both traditional and emerging; to train students who are highly sought by and are successful in agricultural and allied industries; and to inform those who decide public policy through relevant and innovative research and outreach programs.

The goals of the 2009-2013 Strategic Plan...

- 1) Microbial Ecology and Biomass to Energy Programs: Grow to national pre-eminence and emerge as one of the international leaders in research and graduate education in this area
- 2) Nutrition: Emerge as the University leader, along with the Department of Human Nutrition in the College of Education and Human Ecology, in interdisciplinary nutrition undergraduate and graduate education (OSUN) endeavors
- 3) Tissue Biology: Become one of the most sought meat science undergraduate and graduate programs in the US and continue as a national leader in research and outreach endeavors in mammary biology
- 4) Grow the undergraduate program to one of the top five in the US with regard to enrollment and retention by targeting student, stakeholder and agri-industry needs to ensure student post-graduation success

D. Process

The 2009-2013 Department of Animal Sciences strategic plan was developed through an open and inclusive process involving faculty and staff members and students of the Department, with inputs from other departments in the College and University and CFAES administrators. This plan also considers input we have received from agri-industry and other stakeholders in multiple forums. In

addition, the Chair of the Department participates in the multi-state advisory committee primarily consisting of directors/chairs of animal/dairy/poultry sciences academic departments through which an extensive understanding of trends in animal sciences throughout the country has been gleaned.

At the heart of the planning process was a series of “brown bag” discussions, suggested by the faculty members, to which all members of the Department were invited. These discussions covered a variety of topics relevant to the development of goals and directions looking forward to the next 10 to 15 years. Topics centered on 1) undergraduate and graduate education (What are the issues? What are the goals? How can we achieve these?), 2) the needs of our stakeholders – agri-industry, allied industry, students, the public/government (Are we succeeding in satisfying our missions of research, education and outreach?), and 3) defining our “Signature Programs” in the context of the direction of the College and the University, including what we will need to achieve excellence in these programs (e.g., resources, facilities, faculty).

A core strategic planning team, consisting of the Chair, the Associate Chair, key administrative staff members and the Chair’s Advisory Committee developed the first draft of the plan, which was assessed by the Departmental Administrative Team and the faculty, from which input was solicited for revisions. Following these revisions, the draft will be submitted to the College administration for comment and final revision.

II. Introduction:

In 2000, the Department of Animal Sciences initiated a Visioning process which involved faculty and staff members in the Department of Animal Sciences, internal (i.e., representation from the College of Veterinary Medicine) and external stakeholders. The purpose of this 6 month process was to evaluate the existing research, teaching and extension activities of the Department and provide input with regard to emerging opportunities and needs of the Department’s constituency. From this process, a final Visioning report was developed (available on the Department of Animal Sciences website) and presented to the faculty in June 2000. This document formed the basis for the subsequent Strategic Planning process that ensued.

The 2000 Strategic Planning process was particularly timely. The year 2000 represented the fifth anniversary of the combining of the Departments of Animal, Dairy and Poultry Science in 1995 and the substantial reorganization that was required as a result. It also marked the beginning of a new administration of the Department. Dr. James E. Kinder was the first external hire to provide leadership to the Department of Animal Sciences (from 1995-June 1999, the newly formed Department was led by an existing faculty member in the former Department of Dairy Science). The 2000 Strategic Planning process evolved from the Visioning Process, incorporating resulting recommendations as well as subsequent input

from faculty, staff and student representatives in the Department of Animal Sciences. The resulting document (available on the Department of Animal Sciences website), accepted by the faculty of the Department in January 2001, provided guidance for decisions regarding faculty and staff hires and established areas of programmatic emphasis in research, teaching and extension for the five year period 2001-2005. This plan has continued to provide guidance through 2008, however new areas of focus are emerging (e.g., microbial ecology and bioenergy), which have impacted decisions in the Department of Animal Sciences with regard to resource allocation and faculty hires and have introduced new funding opportunities (e.g., Third Frontier funding).

III. Program Assessment, 2001-Present

A. Progress Report on the 2001-2005 Strategic Plan

The following is excerpted from the 2001 Strategic Plan, highlighting the areas of programmatic focus identified. Departmental progress since 2001 is identified in each area (teaching, extension and research).

“Programmatic Focus of the Department for the Next Five Years

Serving as a leader for animal agriculture in Ohio and nationally will necessitate that the Department of Animal Sciences focus on the following programmatic areas:

- 1) Improve the quality of undergraduate and graduate students who major in Animal Sciences or who take classes taught by faculty in the Department and develop educational programs in the areas of use of companion animals in our society and animal welfare.”
 - This was accomplished as measured by the slow but steady growth in the number of undergraduate students enrolled (462 in Au 2001; 489 in Au 2005; and 485, Au 2007), increased ethnic and cultural diversity of the student population (22 students, 5% in 2001; 33 students, 7% in 2005 and 2007), increased average composite ACT scores of first year students from 2003 (24.5) to 2005 (25.2) and 2008 (26.7) and number of admits as a percentage of total OSU admits to the College of Veterinary Medicine (2004 – 19 of 47 [40%] OSU admits compared with 2008 – 22 of 40 [55%] OSU admits.
 - Curriculum: Development and offering of two courses in Companion Animal Biology and Management. The first course (ANIM SCI 245) provides fundamental knowledge in companion animal science. The second (ANIM SCI 545) provides an advanced study of behavior and management of companion animals, and in 2007 was accepted by the faculty of the Department to fulfill the production requirement in the major.
 - Staff Hire, animal welfare science: Primarily holding extension responsibility, the individual in this position has also provided resident

instruction in the area of food animal welfare as a guest lecturer in the Department of Animal Sciences and the College of Veterinary Medicine

- Staff Hire, student services: This position was created to give leadership to student services in the Department of Animal Sciences, including the development of a student services center, support for an increasing population of cultural minority students, and coordination of the internship program.
 - Funding, USDA Higher Education Challenge Grant (\$100,000): to develop animal welfare educational modules to be incorporated into the existing (and developing) Animal Sciences' and CVM curriculum.
 - Funding, Arts and Sciences Cluster programs: to develop and implement a course cluster focusing in Human and Animal Interactions
 - Collaboration, Animal Welfare Science Centre, Victoria, Australia: In becoming the fourth partner in this center, The Ohio State University has access to internationally renowned scientists in animal welfare science. This collaboration has resulted in interdisciplinary research activities (faculty in AS, HCRD and the AWSC – survey of consumer attitudes regarding animal welfare), teaching and the development of new curriculum (e.g., ANIM SCI 240, “Animals in Society”, part of the aforementioned cluster)
- 2) “Develop stronger extension programs in the areas of environmental compatibility, and socially responsible food animal production by utilizing existing knowledge and developing knowledge in the area of decision support systems. Maintain strong extension programs focused on food animal production efficiency, economic viability of food production, and equine science.”
- Faculty members in the Department are increasingly relied upon to provide support to producers, industry and government in decision management (e.g., least cost strategies for feeding food animals), animal welfare management (e.g., auditing for food services industry; training for stockpersons), and regulation and law (e.g., Ohio labeling requirements for bST in milk; ODA rule regarding quality assurance programming required by youth)
 - Faculty Hire, youth development/meat science: Youth programming was restructured so that leadership is a faculty member (previously staff), with a support staff member, emphasizing the importance the Department places on youth educational programming for youth participating in animal project areas in both 4-H and FFA and directly supporting the College's contribution to the 4-H Targeted Investment in Excellence program; emphasis has been on improving quality assurance education and bridging the divide between food animal youth projects and the food animal industries
 - Faculty Hire, equine focus: Responsible for advancing outreach activities in equine science

- Staff Hire, animal welfare science: mentioned previously, the individual in this position has primary responsibility for developing and providing animal caretaker training to enhance animal care and welfare with a resultant improvement in employee retention and satisfaction in the food animal production industries
- 3) “Develop stronger research programs in the area of food biology by strengthening the focus on fundamental tissue biology and meat science. Maintain the strong research programs in the nutrition, physiology and genetics areas that relate to food animal production efficiency and enhance the focus on gene regulation and other fundamental aspects of biology of foods that are produced by animals. Evaluate the potential role of the Department in the area of applied aquaculture.”
- Multiple Faculty Hires: nutrition focus (Lyvers-Peffer), fundamental biology focus (Lee, Selvaraj), meat science focus (Kuber)
 - Enhanced involvement of Department of Animal Sciences in aquaculture research (Wick); leadership for a statewide aquaculture research project (Ottobre)

B. Faculty Size

The Department has a strong record of attracting emerging leaders in the animal sciences into Tenure Track faculty positions; since the implementation of the previous strategic plan, this has been particularly in the area of nutritional sciences and anaerobic microbiology. At present, the Department has 30 Tenure Track faculty members. We have been able to garner an additional 0.5 faculty FTE to commit to a Tenure Track faculty position with Targeted Investment in Excellence funding for the Climate, Water, and Carbon program. This 0.5 FTE is dedicated as part of the ongoing faculty searches for two additional tenure track positions into which there should be faculty employed by 1 January 2009. There will likely be two additional Tenure Track positions that will be filled during the first 6 months of 2009 as a result of searches that will be initiated later this year.

The Department was also the first in the College to gain approval for implementing Research Track faculty appointments and thus appointment of the two present Research Track faculty members eventuated. One of these positions is likely to be abolished as a result of hiring one of the Research Track faculty members into one of the Tenure Track positions for which there is an ongoing search. These hires will bring the total number of Tenure Track faculty members in the Department to 34 (decrease of five Tenure Track faculty positions since 2000) and one Research Track faculty member.

C. Faculty Quality

1. National Recognition: In the last fifteen years, the Department has three honorary fellows of the American Society of Animal Science, two faculty members who are fellows to the American Dairy Science Association, and three faculty members who are fellows of the Poultry Science Association, the highest awards bestowed upon scientists by these societies. In

addition, we have faculty members in the disciplines of genetics, physiology, meat science, and nutritional sciences who have been awarded the highest honors that these societies bestow on faculty members in these specific disciplines, recognizing teaching, research and extension excellence. We rank in the top ten of the 50 plus Land Grant Universities in having faculty recognized with honors of these types.

2. Faculty Trends, Diversity: We have traditionally been a white male dominated Department in faculty member profile. In the last 10 years, we have attracted four faculty members to our Department from diverse ethnic backgrounds and three women faculty members. This trend is likely to continue as the field of animal sciences has a vast majority of women as undergraduate students including an increased population of ethnic minority students at OSU, and a majority of women as graduate students which is a marked contrast to the ethnic and gender ratios 20 years ago. There has also been a precipitous decline nationally in animal sciences graduate students obtaining Ph.D. degrees over the last 5 years. This has resulted in more international hires into animal sciences departments because of the lack of highly qualified candidates from the USA
3. Research Funding/Grants: The OSU Department of Animal Sciences had a very poor extramural grant record from federal agencies with indirect cost recovery (ICR) before the present Departmental administrative leadership began to work with the faculty in implementing the previous Strategic Plan. The amount of extramural funding for the Department has consistently increased in recent years (See Figure 1). In the first half of 2008, ICR totaled \$145,430, with projected total ICR for 2008 to be slightly lower than 2007, but greater than \$300,000.

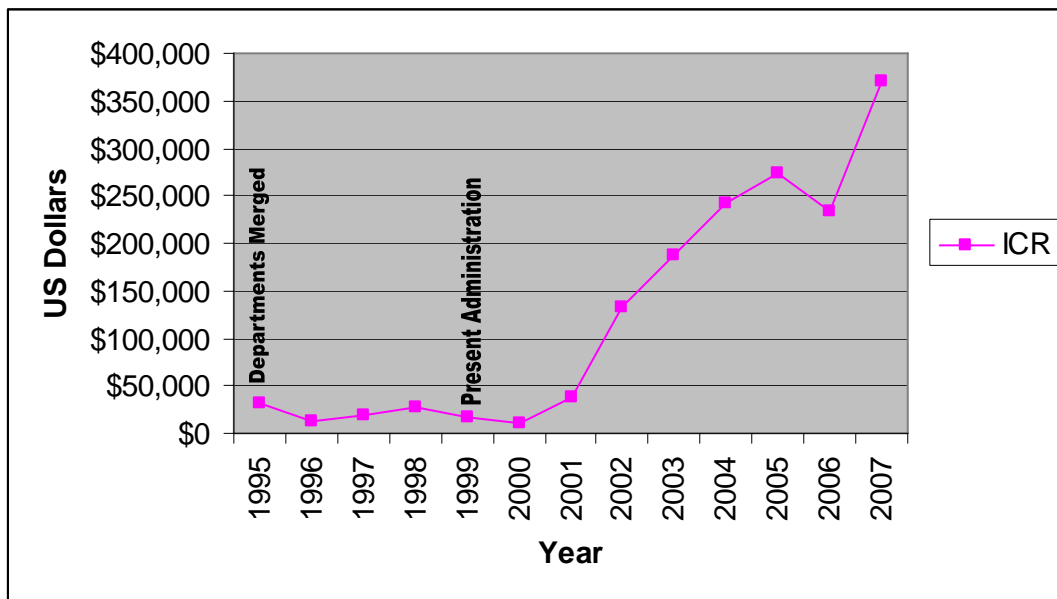


Figure 1. Department of Animal Sciences Annual Indirect Cost Recovery (ICR), 1995 to 2007

These increases have resulted not only from new faculty hires, but more importantly from changing the culture and emphasis for the importance of extramural funding to have successful research programs. There are seven faculty members who were in the Department 10 years ago who have major federal grant funding who had never had this type of funding before the present administration was appointed. This was achieved through constant encouragement and active facilitation of grant proposal submissions and also strong emphasis of the importance of extramural funding in annual performance reviews. The new faculty hires have been employed with an emphasis on ability to procure extramural funding. The continual increase in extramural research funding is very important because this and peer refereed scientific publications are the two primary areas that are assessed by College Research Administration in evaluating Departmental research performance. The Department faculty members have also excelled with regard to maintaining a strong publication record without any decline in productivity even though the number of Departmental faculty have declined from 39 to 32 due to budget reductions and reallocations since 2000.

4. Multi-disciplinary activity: The Department of Animal Sciences has excelled in integrating disciplines while pursuing our mission of discovering and communicating knowledge about animals and their products. The composition of the faculty is multidisciplinary by nature including geneticists, nutritionist, physiologists, biochemists, microbiologists, statisticians, and food processors. Virtually every accomplishment by the department has involved multidisciplinary approaches and integrative thinking by our faculty. In addition, the Department of Animal Sciences has also excelled in the prevailing attitude of multidisciplinary which involves interactions across departments, colleges, research institutes, and commercial partners.
 - Traditional Interactions - The Department of Animal Sciences' greatest multi-departmental endeavors are with the Department of Veterinary Preventive Medicine in the College of Veterinary Medicine and with the Department of Human Nutrition in the College of Education and Human Ecology. Undergraduate teaching, graduate education, research, and outreach are all highly integrated among these three departments including cross-listed courses, co-advising students, numerous collaborative research projects, and seamless outreach programs stretching across departments.
 - Bioenergy - Bioenergy is a developing multidisciplinary research and outreach program led within CAFES by our department. The focus on biomass to energy has been a natural outgrowth of our traditionally strong programs in anaerobic microbiology and resulting fermentation processes. Along with the traditional partners within CFAES, this program has allowed emergence of a broadened external stakeholder base that did not exist in the past. These newly forged

multidisciplinary relations have been highly influential from a governmental perspective and provide persuasive advocates for animal sciences programs.

- Bring biological principles to life - Our animal sciences curriculum is structured in a manner, combined with instructors who effectively and enthusiastically communicate integrative biological concepts about relevant animal sciences subject matter such as muscle and adipose tissue development, and milk synthesis, to make biology highly attractive for undergraduate and graduate students. Another area where the integrative and multidisciplinary approach in the animal sciences is important is production and processing of food animal products that have a beneficial role and that are safe to human health. These areas exemplify the need for integrative sciences approaches in addressing these highly relevant biological and societal issues.
- Animals in Society - This General Education Course has begun to address societal concerns about how animals are being managed to produce the products that are constituents in human diets or that are used for companion and recreational purposes through an educational approach focused for a relatively naïve audience. This Animal Sciences course was taught for the first time by an Adjunct Faculty Member in the OSU Department of Animal Sciences who has a Ph.D. in human psychology. There were 85 students who completed the class with over half of the students having a major outside of the College of Food, Agricultural, and Environmental Sciences

D. Graduate Program

1. Number of Students; OSU MS, PhD degrees awarded; post-degree placement

The graduate training program in the Department of Animal Sciences is characterized by diversity in student population and multiple opportunities that provide in-depth exposure to research in other countries, industry and governmental entities. There are 40 to 45 graduate students in the Department with, on average, slightly more than 50% of these pursuing a Master of Science degree and slightly less than 50% pursuing their doctorate. A large proportion of the students are funded through Departmental or extramural associateships and/or fellowships. The Departments' graduate program reflects a diverse population of students based upon gender, ethnicity and country of origin (Autumn 2007: 27% of the students were from a country other than the US, 23% of the domestic students were minority students, and 49% of the graduate students were female) as well as the students' areas of interest/expertise. This diversity strengthens the graduate program and the Department has placed priority on maintaining its diversity with regard to these criteria, rather than choosing students based solely on their ability to maximize metrics such as GRE or GPA scores.

There has been considerable fluctuation in the number of graduate students pursuing degrees in the Department of Animal Sciences, concurrent with changes in the faculty of the Department following Departmental reorganization in 1995, a series of retirements by senior faculty and influx of junior faculty establishing research programs (See Table 1, data for 1994 are provided for comparison purposes).

Table 1: Graduate Programs in Animal Sciences, 2001 to present

Year	Number of Students		Degrees Granted	
	MS	PhD	MS	PhD
1994	34	26	5	7
2001	23	25	4	4
2002	23	24	5	6
2003	20	20	8	6
2004	17	17	4	3
2005	17	18	4	5
2006	21	16	6	6
2007	20	17	11	3

Consistent throughout the fluctuation in numbers of graduate students and degrees granted, however, has been the quality of students graduating with advanced degrees from the Department. This quality is reflected in 100% placement of all students seeking a position after completing their graduate degree in Animal Sciences (99% of all students; data reflect graduates after the merger of departments in 1995), including placement of at least five recent PhD graduates in faculty positions at major institutions, several others in research positions in industry, others in leadership positions in extension, with many of the remaining students currently in excellent post-doctoral research opportunities. As the State's only graduate program in Animal Sciences, we are positioned to recruit more excellent students in the future that will continue to enhance the quality of our program. Incumbent to this effort is the continued support of the CFAES and the University for graduate stipends and programming, strengthened recruitment and marketing strategies, and enhanced partnerships with external stakeholders (industry, Agricultural Research Service, other government entities), collaborating on graduate education support for stipends and research activity costs.

2. Interdisciplinary Graduate Programs

The Department has long-standing and more recently initiated partnerships with other departments at OSU that enhance the training received by graduate students. These joint graduate programs serve to

strengthen and increase the quality of our graduate program. These include:

- Ohio State University Nutrition (OSUN) doctoral program - the Department was integral in the establishment of this program, and has been an active member of the OSUN program for many years. Between 5 and 10 Animal Sciences graduate students are enrolled in this interdepartmental program on an annual basis. Rigorous entry requirements ensure that only the highest quality and most promising doctoral students are admitted to the OSUN program. The interaction afforded through this interdisciplinary program contributes to the breadth and depth of training of students in the nutrition area and is also a key area of interdepartmental graduate teaching efforts. Currently, six to seven Animal Sciences faculty members, one of whom is the current director of the OSUN program, participate in teaching core courses for many of the student across the campus with wide-ranging interests in the nutritional sciences.
- Environmental Sciences Graduate Program (ESGP) – this graduate program was established in 1991 in response to growing demands by graduate students for degree programs in environmental science and by the increasingly interdisciplinary nature of research by faculty in this area. Two faculty members of the Department of Animal Sciences participate in this program, and currently, two Animal Sciences graduate students participate in the ESGP.
- OSU Aquaculture program - the director of the aquaculture program at OSU is a member of the Animal Sciences faculty. This program promotes joint graduate training with SENR in this area of study.
- The Departments of Food Science and Technology (CFAES) and Veterinary Biosciences (CVM) – other partners in joint graduate student training
- International experiences for graduate students – we have or are in the process of developing a range of programs for joint international training of graduate students with new and existing partners, including CSIRO, Australia; the Animal Welfare Sciences Centre, Australia; AgResearch, New Zealand; Beef CRC, Australia; and University of Sao Paulo, Botacatu and Piracicaba, Brazil.
- Non-academic training partnerships – in addition to international and OSU partnerships that exist or are in the process of being established, the Department of Animal Sciences is involved in developing training partnerships with private and governmental entities such as Iams, Select Sires, and USDA-ARS.

E. Undergraduate Program

1. Number of students enrolled in ANIM SCI Major

In the Department, there is one major program available. Within this major program, students can receive a BS in Agriculture, a BS in Nutrition, or a dual degree with Columbus State Community College (CSCC) by which

students receive a BS in Agriculture from OSU and an Associate's Degree in Veterinary Technology from CSCC.

The number of undergraduate students identifying Animal Sciences as their major program grew 5.8% during the period covered by the previous strategic plan (from 462 in 2001 to 489 in 2005) and remained relatively constant from 2005 to 2007 (enrollment data for 2008 are not yet available). From 2001 to 2007, the total CFAES enrollment (including SENR) has consisted of 24-28% students declaring Animal Sciences as their major program (see Figure 2).

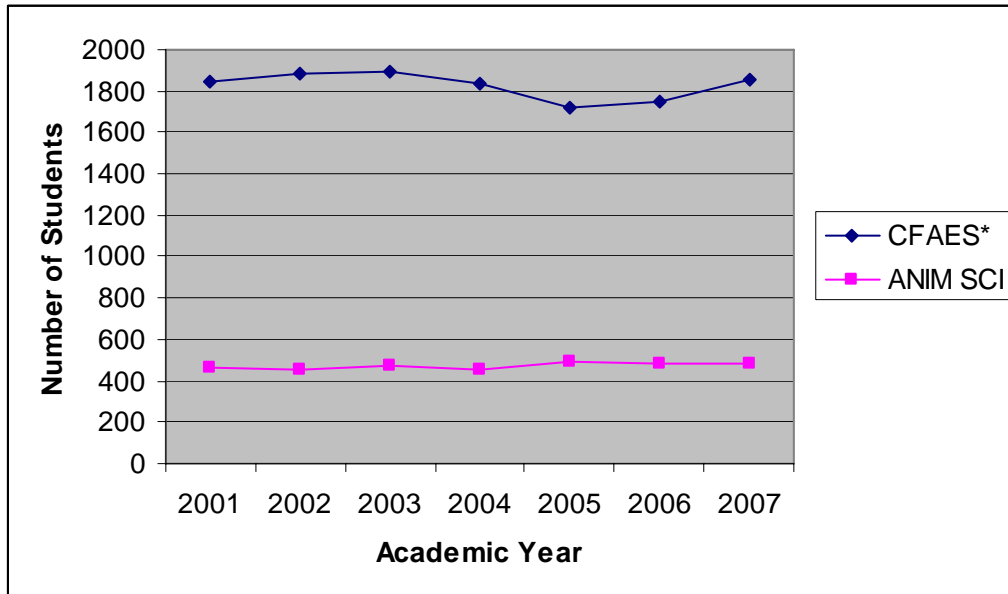


Figure 2. Undergraduate student enrollment, Department of Animal Sciences and CFAES (*includes SENR)

2. Number of students declaring minors coordinated by the Department (Life Sciences, Animal Sciences, Equine Science and Meat Science and the Veterinary Technology Program)

Since the implementation of the previous strategic plan in 2001, the Meat Science minor (2005) and Veterinary Technology program (2006; replaces the minor requirement for those students enrolled in this dual degree program with CSCC) have been developed and implemented to serve the needs of the undergraduate student populations in the CFAES and Department. As with the Animal Sciences and Equine Science minors, the Meat Science minor is not available to students enrolled in the Animal Sciences major; however, like the Life Sciences minor (which is the declared minor for the greatest percentage of Animal Sciences majors), the Veterinary Technology program is available to Animal Sciences majors. The number of students with each declared minor has fluctuated

from 2001 to present; however the relative standing of each has remained the same (see Figure 3).

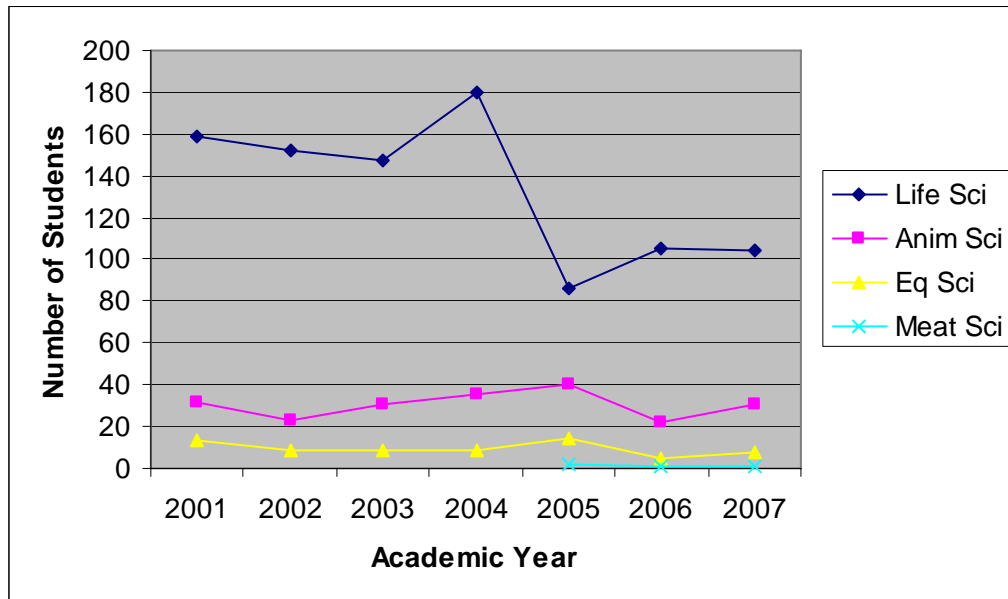


Figure 3. Number of students with declared minors coordinated by the Department of Animal Sciences

3. Total OSU enrollment in undergraduate courses

While graduate credit hours taught in the Department of Animal Sciences has remained fairly constant since the publication of the 2001-2005 Strategic Plan, the number of undergraduate credit hours taught has steadily risen in that same timeframe (see Figure 4). Partially a result of the previously noted slow growth in undergraduate student enrollment in the Animal Sciences major since 2001, this increase can also be attributed to the expansion of high enrollment “service” courses that appeal to the broad University population beyond the Department and the College (e.g., ANIM SCI 597 – Issues Concerning the Use of Animals by Humans, ANIM SCI 245 and 545 – Companion Animals focus; ANIM SCI 240 – Human and Animal Interactions) and satisfy graduation criteria in many colleges, most notably the Colleges of the Arts and Sciences. The Department continues to strive to develop and grow “service” courses, which bring new income to the College via a multitude of strategies, including: 1) applying for GEC status for existing and new courses, 2) developing honors sections for existing courses, 3) collaborating with Arts and Sciences and University Academic Affairs administration to develop desirable course offerings (e.g., Human and Animal Interactions Cluster), and 4) establishing greater demand international experiences (e.g., Ireland Study Tour).

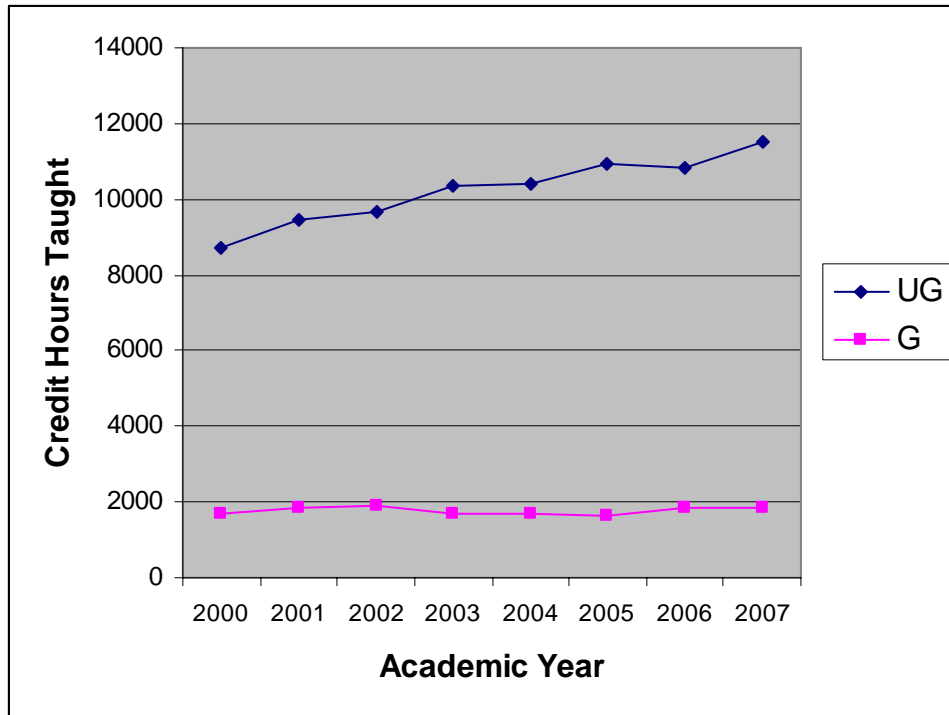


Figure 4. Total undergraduate (UG) and graduate (G) credit hours taught in the Department of Animal Sciences from academic year 2000 to 2007

F. Alumni Communication, Donor Development

The Department did not have any broad-based and organized communication with alumni until the last year when we employed into a staff position a person that has part of her responsibilities developing an electronic newsletter (*The Ohio State University Department of Animal Sciences Alumni E-Newsletter*). The *Animal Sciences Alumni E-Newsletter* is published quarterly and highlights present activities and emphasis areas of the Department, focusing on our undergraduate student programs. This is our first major broad based effort in communicating with alumni since the merging of the three departments in 1995. We will also strategically develop other venues through which we can connect to Departmental alumni during the period that this Strategic Plan is implemented. Our Department has one of the richest histories in all of The Ohio State University through consistently having one of the largest undergraduate student bodies in the University and the largest in the College. We have been highly successful in garnering College recognitions of our outstanding alumni and a high priority will be maintained on recognizing highly successful Departmental alumni for their career successes through this venue.

G. Restructuring

1. Budget – Under the previous Departmental Strategic Plan, budget restructuring in the research realm was ongoing with Departmental faculty being successful in supporting a continued increase in percentage of support staff for research laboratory activities over the past 6 years, now

supporting 50% of the salary of research support staff members. This restructuring will continue during the period that this Strategic Plan is implemented with greater support from extramural funding being necessary to conduct research endeavors in the animal units.

2. Curriculum – The Departmental undergraduate curriculum has undergone continual change during the period under which the past Strategic Plan was implemented with an enhanced emphasis on serving the academic needs of students with a greater career focus in the companion animal realm, and the social aspects of addressing issues related to the use of animals in society for companion/recreational, food production, and research purposes. We also enhanced the focus on the basic biological sciences in our core discipline courses of animal nutrition, genetics, and physiology, as well as that of muscle, adipose, and connective tissue biology of meat products.

From a graduate curriculum perspective, there has been an emphasis on gaining the greatest expertise in the disciplinary field of focus as possible through drawing on courses from throughout the University to develop the greatest understanding in the focused area of their graduate program. In addition, students always take a strong series of classes in statistics and biometry so as to gain the greatest understanding possible within their programmatic endeavors to utilize statistics in an appropriate fashion to correctly analyze data collected in their and others research endeavors. With most graduate student programs, a majority of the classes are taken in departments other than Animal Sciences except for the thesis and dissertation credit hours.

3. Infrastructure: The Department is inventoried building space in three structures (Animal Science Building, Plumb Hall, and Vivian Hall) on the Columbus campus and one on the Wooster campus for office space for faculty, staff, and graduate students. The Department has recently been informed that they are to vacate the space that is inventoried to them in Vivian Hall. The Department is also inventoried space for conducting research, teaching, and outreach activities for dairy cattle, beef cattle, pigs, sheep, poultry (chickens and turkeys) and horses that are located in close proximity to the Columbus campus (Waterman and Don Scott locations). The Department is also inventoried space on the Wooster campus for conducting research with dairy cattle, beef cattle, sheep, and poultry (chickens and turkeys). In addition, the Department utilizes the animals located at the Eastern Agricultural Research Station, Jackson Agricultural Research Center, and Coshocton Agricultural Research Station to conduct research with beef cattle and sheep and the Western Agricultural Research Station to conduct research with pigs.

The Departmental personnel infrastructure includes about 70 support staff for conducting research, teaching, and outreach endeavors as well as for

caring with animals used for these purposes. There are also about 100 undergraduate students employed in the Department during the Autumn through Spring quarters (decreasing to about 40 during Summer quarter) for conducting these activities, primarily on the Columbus campus.

IV. Goals and Initiatives: 2009-2013

A. Direction for the Future, Participation in CFAES Signature Focus Areas

The Department of Animal Sciences has invested resources and personnel in growing areas of strength and excellence which are highly consistent with the Signature Focus Areas (SFA) that have been identified by the CFAES in the process of its current strategic planning. These areas of strength and excellence support the ecological paradigm which evolved from Project Reinvent in the CFAES, and are also in concert with the University and College funded Targeted Investment in Excellence initiatives as identified below. Specifically, for each SFA in the areas of Research, Teaching, Extension and International endeavors:

1. Food Security, Production and Human Health

a. Research

- We will be the lead Department in the University focusing on food producing animal systems (e.g., how animal genetic composition and environmental factors such as animal diet influence product quality and safety)
- We will have as primary areas of food producing animal system research focus: 1) production efficiency and 2) economic viability – two of four primary aspects of the College's Ecological Paradigm
- We will have a specific research focus on nutritional sciences and tissue biology (reproductive, mammary, muscle, adipose, connective)
- We will advance our focus on animal welfare science and social impacts on food producing animal systems
- We will have safety of food (meat and milk) as related to pathogenic bacteria contamination, and antibiotic resistance as areas of research emphasis in contributing to the Public Health Preparedness Targeted Investment in Excellence Program

b. Teaching

- We will be the lead Department in the University in education of students about food producing animal systems and relationships to human health
- The Department will be the University leader in education of importance of animals in our society, including companion, recreational, food producing, work, and research animals
- We will be the lead Academic Unit in the College for the Ohio State University Nutrition (OSUN) program
- We will be the lead Academic Unit in the University in preparing pre-veterinary students for their subsequent educational endeavors in the

College of Veterinary Medicine, particularly those students with a focus on food animal and equine medicine

c. Extension

- We will be the lead Department in the University in extension-outreach engagement with those who influence management practices in food producing animal enterprises
- We will be the lead Department in the University focusing on human animal interactions in outreach programming to enhance worker satisfaction and improve quality of food animal products (training and auditing: producers, transporters, harvest facilities)
- We will be the lead Department in the University in Hazard Analysis and Critical Control Point education of Ohio meat processors (ranks third in USA in number of plants)
- We will be the lead Department in the University in collaborating with scientists in the College of Veterinary Medicine on food animal health (including zoonotic diseases) and food animal welfare issues in outreach engagement endeavors
- We will be the lead Department in the University in 4-H youth education focusing on “Teaching People for the Betterment of Animal- and Human-Kind” as part of the College’s contribution to the 4-H Targeted Investment in Excellence program

d. International

- The Department along with the College of Veterinary Medicine will become the fourth and only partner outside of Australia of the Animal Welfare Science Centre through which we will use the knowledge base of these scientists in enhancing the Department’s undergraduate teaching, extension, and research endeavors in this realm
- Scientists in the Department will strengthen established and develop new international collaborations to advance global food safety and security
- We will explore opportunities for teaching (especially in the areas of animal welfare and human and animal interactions) and research (especially in the areas of microbial ecology and biomass to energy) collaborations with scientists and institutions in the EU

2. Environmental Quality and Sustainability

a. Research

- We will be the lead Department in the College in addressing environmental issues related to food production animal systems
- We will be the lead Department in the University in studying ways to reduce the impact of wastes from food producing animal systems on the environment (e.g., anaerobic digestion processes, altering food animal diets to reduce nitrogen or phosphorus excretion)
- We will be the lead Department in the University in studying the use of anaerobic digestion processes to reduce the impact of wastes from food processing on the environment

- We will be the lead Department in the College in assessing impact of food producing animals on global warming through leadership of the new Climate, Water, and Carbon Targeted Investment in Excellence tenure track faculty hire
- b. Teaching
- We will be the lead Department in the College in education of undergraduate and graduate students about environmental issues related to food production animal systems
 - We will be the lead Department in the University in undergraduate and graduate education related to reduction of impact of wastes from food producing animal systems on the environment (e.g., altering food animal diets to reduce nitrogen or phosphorus excretion)
- c. Extension
- We will be the lead Department in the College in extension-outreach-engagement endeavors related to the impact of environmental issues on food production animal systems
 - We will be the lead Department in the University in knowledge transfer to the food animal producers to enhance their sustainability with the changing costs of ingredients for animal diets and requirements regarding environmental stewardship.
 - We will be the lead Department in the University in extension-outreach-engagement endeavors in studying ways to reduce the impact of wastes from food producing animal systems on the environment (e.g., altering food animal diets to reduce nitrogen or phosphorus excretion)
- d. International
- We will collaborate with Australian Commonwealth Scientific and Industrial Research Organization (CSIRO) scientists in studying the contributions of methane production by ruminant animals on global warming.
3. Advanced Bio-Energy and Bio-Based Products
- a. Research
- We will be the lead Department in the University in studying anaerobic digestion processes in conversion of animal and food processing waste streams to bio-energy through use of anaerobic digesters (State of Ohio Third Frontier Project)
 - We will broaden our research endeavors to include a focus on sensor technologies for important metabolites/substrates in detecting “health” of microbial populations in anaerobic digesters
- b. Teaching
- We will be the lead Department in the College in anaerobic microbiology/digestion education (e.g., Animal Sciences 690 - New course developed by Yu, Morrison, Ezeji)
- c. Extension
- We will broaden our external stakeholder base through partnerships with those who have a passion for enhancing the anaerobic digester

technologies (e.g., digester engineers, sensor technology engineers, economic enhancement/regulatory governmental agencies related to commercialization of bioenergy products, economic development agencies with interests in bioenergy, food processing enterprises)

B. Major Goals

The Department has traditionally dealt with research, teaching and outreach endeavors that focus on *teaching people for the betterment of animal- and human-kind*. As the demographics and needs of our student and stakeholder populations have evolved, so has our definition of what species are included in “animal” (e.g., expansion to include companion and work animals, exotic animals, microorganisms, etc.) and what is meant by “betterment” (e.g., environmental stewardship; development of animal-based nutraceuticals; prevention, reduction, and/or elimination of the development of antibiotic resistance associated with food animal production; alternative energy production; animal welfare; etc.). However, the underlying tradition remains consistent and is the foundation for the major goals of the Department as listed in the Executive Summary and detailed in the following.

Strategy 1: Microbial Ecology and Biomass to Energy Programs - Grow to national pre-eminence and emerge as one of the international leaders in research and graduate education in this area

These have been identified as major areas of investment by the State of Ohio (Third Frontier Funding), industry in the State (as evidenced by matching funding), The Ohio State University (Climate, Water, and Carbon Targeted Investment in Excellence), and the CFAES (as a Signature Focus Area). The Department has been a leader in this investment, through strategic faculty hires, facility re-allocation on the Wooster campus (location of the digester research facility), campus leadership in the Research Faculty initiative and creative faculty appointment sharing, consultant investment, and garnering state and federal funding. This goal aligns with CFAES Signature Focus Areas 2: *Environmental Quality and Sustainability*, and 3: *Advanced Bioenergy and Biobased Products*.

This goal aligns with and supports OSUE Strategy 4: *Linking with research, educate Ohio citizens, businesses, and institutions regarding opportunities for advanced bioenergy and biobased products and technologies*.

Action Steps:

- ✚ Reallocate faculty line funding to support 50% of a new regular faculty position with a focus in microbial ecology (50% match from the Climate, Water, and Carbon Targeted Investment in Excellence)
- ✚ Direct resource allocations to support laboratory and equipment enhancement
- ✚ Increase collaborations within the College and University by participation in joint research efforts focused in areas identified in this goal, including

- Animal Sciences' faculty contribution to the interdisciplinary Institute for Energy and the Environment currently being established by the University
- ✚ Increase participation by faculty and graduate students in the "Environmental Sciences" interdisciplinary graduate program
 - ✚ Increase multi-state and international collaborations and exposure through the MAPLE Research Initiative
 - ✚ Seek and implement applied research initiatives leading to knowledge transfer via the proposed OSUE energy team

Metrics:

- ✚ Increase extramural grant funding expenditures 10% per year for research endeavors associated with microbial ecology and biomass to energy programming (Current: ~\$642,000 [5 year rolling average through beginning of FY09]; Projected: ~\$940,000 [5 year rolling average through FY13])
- ✚ Secure at least one University fellowship or OARDC associateship in this strategic programmatic area per year as part of an overall Departmental goal of three university fellowships or OARDC associateships per year (Current average: 2 fellowships/associateships per year)

Strategy 2: Nutrition - Emerge as the University leader, along with the Department of Human Nutrition in the College of Education and Human Ecology, in interdisciplinary nutrition undergraduate and graduate education (OSUN) endeavors

Nutrition is a traditional discipline of strength and national recognition in the Department, with emphasis on the major ruminant (beef and dairy cattle, sheep) and non-ruminant (pigs, poultry) food animal species. Concomitant to Goal 1, advancements in the area of microbial ecology contribute to excellence in the nutritional sciences. Extensive collaborations between scientists in both areas of focus exist and will be strengthened as a result of the strategic emphasis placed by the Department in Goal 1 and Goal 2. This goal aligns with CFAES Signature Focus Area 1: *Food Security, Production, and Human Health*.

This goal aligns with and supports OSUE Strategy 2: *Drawing on current research, enhance human health by expanding and implementing nutrition and physical activity education programs.*

Actions Steps:

- ✚ Develop and implement a new undergraduate minor in animal nutrition coordinated through the Department
- ✚ Develop and implement a marketing strategy for the BS in Nutrition and the Animal Nutrition minor to students university-wide, especially those interested in the human and animal health professions and graduate school

- ✚ Build relationships with allied and local industries such as Abbott Nutrition/Ross Products Division, collaborating to develop undergraduate and graduate student research and stipend support, undergraduate research internship opportunities and graduate research collaborations
- ✚ Mentor students to enhance their opportunities to seek undergraduate research support available at the University (e.g., OSU Undergraduate Research Office awards, the Ohio Agricultural Research and Development Center's Research Internship Program [ORIP], CFAES/AS Research Internships)
- ✚ Establish a mentoring relationship between graduate students in the OSUN program and undergraduate students involved in the BS in Nutrition program to develop an positive environment of consideration for furthering their education through graduate school
- ✚ Seek and implement applied research initiatives leading to knowledge transfer to support community outreach via nutrition programs and in collaboration with the Department of Human Nutrition

Metrics:

- ✚ Increase research experiences for undergraduate students in nutritional sciences so that on an annual basis, at least 50% of the undergraduate students with an interest (academic and/or career) in nutritional sciences have an opportunity to participate in a research experience (Current: ~39%)
- ✚ Secure at least one university fellowship or OARDC associateship in this strategic programmatic area per year as part of an overall Departmental goal of three University fellowships or OARDC associateships per year (Current average: 2 fellowships/associateships per year)

Strategy 3: Tissue Biology - Become one of the most sought meat science undergraduate and graduate programs in the USA and continue as a national leader in research and outreach endeavors in mammary biology

Tissue biology was identified in the previous strategic plan as an area of focus. Within tissue biology, two segments have emerged as providing opportunities for national leadership: meat science (which includes muscle, adipose and connective tissue) and reproductive/mammary biology.

Already one of the top programs in the United States (Ranked #9, Meat & Poultry, November 2001), meat science at The Ohio State University is emerging as a program of excellence with the addition of faculty and collaborations with national commodity organizations (NPB, NCBA) and federal research facilities (USDA Sheep Experiment Station). The meat science research program has also advanced with the successful garnering of new and reallocation of existing resources to develop a state of the art meat science research and production laboratory housed within the infrastructure of the Department. This facility is utilized not only by scientists with direct ties to the Department, but also by

researchers throughout the University who are otherwise unable to gain access to tissues.

The research programs and faculty members with a focus in reproductive and mammary biology are recognized nationally and internationally as leaders in these fields. Mammary biologists have characterized mammary host defenses associated with disease susceptibility, manipulated virulence factors of mammary pathogens for enhancing host defenses, and applied new technologies to advance milk quality and food safety. Reproductive biologists have developed and applied new technologies to enhance reproductive efficiency, synchronization of stage of reproductive cycles and the use of artificial insemination in cattle. Faculty members in mammary biology have provided international leadership and collaboration for the last 20 years within the global organizations NMC, Inc., and the International Dairy Federation to assure animal health and food safety through research and outreach education.

This goal aligns with CFAES Signature Focus Area 1: *Food Security, Production, and Human Health*.

This goal aligns with and supports OSUE Strategy 1: *Drawing on current research, enhance Ohio's food security and food production by establishing and implementing a local and regional foods initiative and by providing educational instruction to increase profitable crop and livestock production.*

Action Steps:

- ✚ Facilities – Invest in the renovation of AS117 in the Animal Science Building to extend the existing meat science laboratory, adding packaging and processing space to house state of the art equipment that is available and provide space for more students to work in this laboratory
- ✚ As anticipated faculty retirements occur, allocate faculty funding to expand the faculty base in meat science, complimenting existing faculty and programmatic efforts (teaching, research and outreach) and expanding the teaching, advising and research capabilities
- ✚ Market the meat science minor for non-Animal Sciences major students
- ✚ Complete a faculty hire in mammary biology, to be located on the Wooster campus and complement existing programmatic endeavors in the Department and in collaboration with other departments and universities
- ✚ Seek and implement applied research initiatives, including on-farm research in collaboration with food animal producers
- ✚ Enhance knowledge transfer to food animal producers, for improved meat and milk quality, productivity and profitability
- ✚ Involve meat industry stakeholders in development, implementation and marketing of the professional Master of Science program in Meat Science, including accommodations for non-traditional students and distance education alternatives

- ✚ Grow partnerships with meat processing and production industries to increase the utilization of meat science laboratory as a pilot facility for new product development, providing funding and opportunity for more students to engage in enhanced “real world” production processes

Metrics:

- ✚ Increase research experiences for undergraduate students in meat sciences and reproductive/mammary biology, both fundamental and applied, so that on an annual basis, at least 50% of the undergraduate students with an interest (academic and/or career) in these programmatic areas have an opportunity to participate in a research experience (Current: ~33%)
- ✚ Increase the number of students identifying meat science as their primary interest (academic and/or career) to 10% of the undergraduate student population. Maintain this percentage with consideration of anticipated increasing enrollments (Current: ~7 to 8%)
- ✚ Increase the number of students gaining at least one quarter of applied experience in the meat science laboratory to 40 per academic year (Current: approximately 10 to 20 students per year are employed in the meat science laboratory)
- ✚ Meet meat industry identified needs by developing a professional Master of Science degree program in meat science
- ✚ Secure at least one University fellowship or OARDC associateship in this strategic programmatic area per year as part of an overall Departmental goal of three university fellowships or OARDC associateships per year (Current average: 2 fellowships/associateships per year)

Strategy 4: Grow the undergraduate program to one of the top five in the USA with regard to enrollment and retention by targeting student, stakeholder and agri-industry needs to ensure student post-graduation success

Home to approximately 490 undergraduate students majoring in animal sciences and seeking a BS in Agriculture or a BS in Nutrition, the Department is one of the largest in the country, and serves one of the largest undergraduate student population in the CFAES with the greatest number of honors students enrolled in the college (20-25 new honors students choose Animal Sciences as their major each year). In addition to students enrolled in the major, there are approximately 140 undergraduate students currently served through minors coordinated by the Department, namely the Life Sciences (104), Animal Sciences (31), Equine Sciences (8) and Meat Science (1) minors. With The Ohio State University having the largest undergraduate student population on one campus in the USA, there is potential for the Department to be one of the top five programs in the country with regard to undergraduate enrollment, teaching and advising. To do this, OSU Animal Sciences must provide the greatest excellence in

undergraduate educational opportunities both within and beyond the classroom. Graduates of the Animal Sciences program will continue to serve needs of the allied and agri-industries. Enhanced numbers of highly qualified graduates with the diverse educational experiences and skills developed through their tenure in the Department of Animal Sciences at The Ohio State University aligns with CFAES Signature Focus Areas 1: *Food Security, Production, and Human Health*; 2: *Environmental Quality and Sustainability*; and 3: *Advanced Bioenergy and Biobased Products*.

This goal aligns with and supports OSUE Strategy 3: *In concert with our faculty and staff, prepare youth for successful academic achievement related to science, technology, engineering, and math (STEM) leading to careers in environmental and human health professions.*

Action Steps:

- ✚ Emphasize recruitment of high potential high school students, including those with an interest in food animal agriculture and allied agri-industries, as part of the newly hired Student Success Coordinator's responsibilities
- ✚ Continue emphasis on recruitment of a diverse population of students, and retention of these students via excellence in advising, access to support services, and ongoing evaluation of the climate of the Department with regard to diversity
- ✚ Increase visibility of the Department via involvement in youth activities and outreach programming in the food and companion animal, animal health, and animal product areas
- ✚ Increase visibility of the Department to The Ohio State University population through development and marketing of courses that attract interest of large numbers of students such as *Animals in Society* and *Companion Animal Biology*
- ✚ Work closely with the CFAES Study Abroad Coordinator to explore and develop new international experiences and expand availability of existing programs
- ✚ Increase incorporation of "hand's-on" (e.g., laboratory, animal, food production processes) and team-building experiences (e.g., group problem solving or product development, marketing presentations) in undergraduate curriculum
- ✚ Increase the number of courses with an honors- or honors-embedded-designation that will meet the curriculum requirements for honors students enrolled in the Department, as well as honors students enrolled in other majors but who have an interest in Animal Sciences (e.g., biological sciences, human nutrition, pre-Medicine and pre-Vet Medicine interests enrolled in other colleges)
- ✚ Enhance the preparation of students pursuing a career in animal health, including Veterinary Medicine, through curriculum excellence and strong advising regarding the breadth of career paths relative to the animal health

- and foods (safety and processing) industries (e.g., with courses focusing on animal handling, companion animals, animal behavior, animal health).
- ✚ Through the Ohio Collegiate Ag Educators (OCAGE) organization, strengthen relationships with colleges offering two-year programs (associate's degree programs, two-plus-two programs, etc.) and improve articulation to the Animal Sciences' major from these programs
 - ✚ Establish advising relationships and club opportunities on regional campuses for students with an expressed interest in animal sciences; identify Newark campus (closest proximity to Columbus campus) as the model for this relationship, with the additional potential to teach introductory Animal Sciences courses at OSU-Newark based on proximity
 - ✚ Identify faculty advisors to specialize in advising for pre- and post-transfer students (from OSU entities and other institutions)
 - ✚ Continue to grow the relationship with ATI to enhance the two-plus-two educational path, smoothing the transition for students beginning at ATI who desire to pursue a BS degree in Animal Sciences by transferring to the Department of Animal Sciences at OSU
 - ✚ Emphasize teaching excellence in faculty searches, especially for those faculty who will be located on the Columbus campus
 - ✚ Emphasize the importance of quality student-faculty interactions via academic advising, club advising and faculty involvement in co- and extra-curricular activities during review of faculty activities
 - ✚ Encourage faculty and staff involved in advising activities to participate in advising workshops offered by professional societies, the university and the CFAES
 - ✚ Actively seek and measure student satisfaction with advising through student exit surveys and interviews; include results in faculty annual performance reviews
 - ✚ Implement the clinical faculty track in the Department to supplement teaching excellence and support high demand courses offered by the Department
 - ✚ Allocate general funds, solicit continued support from faculty members and college administration, and develop new support from agri- and allied-industry stakeholders to enhance the quality and quantity of research opportunities for undergraduate students
 - ✚ Strengthen relationships with stakeholders and alumni and work closely with the CFAES Development team to nurture these relationships and establish donor opportunities

Metrics:

- ✚ Increase affordable, animal sciences-focused, international educational experiences for undergraduate students by 100% (Current: two study tours – one focused on dairy production and one focused on human-animal interactions, and one active study abroad – Australia; Projected: add two study tours focused on human-animal interactions, and activate second animal sciences focused study abroad – Africa)

- ✚ Increase exposure of undergraduate students to international educational experiences through study tours/study abroad experiences, international internships, interactions with international scientists and faculty, etc. (Current: 35-45 students per year through study abroad and study tour activities; Projected: 100 students per year through established activities and enhanced global interactions)
- ✚ Increase endowments to support undergraduate students by 30% (including programs, activities, study abroad and research opportunities, scholarships, etc.) (Current: ~\$122,000; Projected: ~\$160,000)
- ✚ Increase funded undergraduate research opportunities from approximately 30 (current) to 50 per academic year – this includes formal research internships, student research assistants in laboratories and student involvement in research at the animal units and in the meat science laboratory (Current: 30; Projected: 50)
- ✚ Increase undergraduate enrollment in the Department 40% (Current: approximately 500 students; Projected: approximately 700 by 2013), including focus on recruitment and enrollment of minority students, non-traditional students, transfer students (from other universities or regional campuses of The Ohio State University) and out-of-state students
- ✚ Maintain the percentage of honors students selecting Animal Sciences as their major (currently 15-20% of first year students) as the enrollment in the Department increases
- ✚ Develop a student mentorship program utilizing stakeholders and alumni (current: none exists; projected: 10% of students will be engaged in a mentoring program by 2013)

C. Multi-disciplinary Activities

The Department of Animal Sciences is important only if we effectively serve society as a whole. The value of agriculture to society has been looked upon as being less important in modern, well-developed cultures as compared with its perceived worth by the community in the past. A broadened “face” must be put on agriculture so that a greater percentage of those in society appreciate its importance to their well being. As a consequence of taking such actions, the external stakeholder base of agricultural research institutions will be broadened and relevance to traditional partners strengthened. The Department of Animal Sciences has a bright future as we broaden our vision. Through our strengths as integrative scientists, we truly have many unique opportunities that will help us in being highly relevant in our teaching, research and outreach engagement endeavors.

1) Expand leadership role and active involvement in University’s TIE programs and CFAES’s Signature Focus Areas. These programs provide a formal structure to allow faculty to build relationship both within and outside the University. Faculty participation will encouraged with a goal of 75% of the faculty being active in a TIE program through collaborations, funding, and teaching. We will be

proactive in development and involved as new initiatives are developed within the University.

2) Further advance the integrative area where the Department of Animal Sciences plays significant and relevant roles in addressing societal concerns about how animals are being managed to produce the products that are constituents in human diets or that are used for companion and recreational purposes. Campus-based instruction (e.g., Animals in Society), study abroad opportunities (e.g., Australian trip), outreach education (e.g., animal welfare management modules), and animal behavior research will advance and new areas of educational endeavor will be pursued.

3) Continue biomass to energy leadership within the University. We will advance multidisciplinary approaches of converting food, animal production and environmental wastes into usable energy. Collaborative efforts will include the TIE program, but also incorporate commercial, government, and private agencies not traditionally interacting with animal sciences.

4) Strengthen important relationships with other departments, such as Department of Veterinary Preventive Medicine in the College of Veterinary Medicine and with the Department of Human Nutrition in the College of Education and Human Ecology, which share common missions as the Department of Animal Sciences

D. Pedagogic Initiatives

1) Goal: Graduate Students – Effectively recruit and train graduate students as leaders of the next generation of faculty and research scientists for public, governmental and private institutions in the animal sciences.

To supply leaders for the next generation of scientists in the animal sciences, we must provide students with high quality training during their degree program. We will assess quality of an individual student's Ph.D. program, and the collective quality of the Ph.D. program in Animal Sciences through outcome-based metrics. These primary metrics will include number of research presentations given at national meetings, peer-reviewed publications that result from a Ph.D. program, grant dollars leveraged by either the student or their advisor(s) based upon or obtained as a result of their research, and ultimately, the contributions of the student after graduation as Faculty or Scientists in the government/private sector. Recruitment of students with the academic potential to achieve these outcomes is an associated goal. An additional aim is to retain, or expand, the diversity of students that are members of our graduate program. To achieve these goals, we propose the following action steps and will use the subsequent metrics to track our progress in these areas.

Action Steps:

- ✚ Invest personnel time and resources to improve Department of Animal Sciences graduate website – increase interactivity and appeal to enhance recruitment initiatives
- ✚ Actively seek and recruit high potential graduate students, with special consideration of domestic minority students, through attendance at national and international meetings and participation in multi-state and multinational research initiatives
- ✚ Continue to emphasize actions that will enhance retention of graduate students, with special consideration of underrepresented groups, to ensure a high quality graduate experience
- ✚ Develop the data base to routinely gather data on graduate student publications and presentations

Metrics:

- ✚ Increase the number of publications in high quality (as measured by impact score), peer-reviewed journals (Current: 60 peer reviewed journal articles (FY2008); Projected: 70)
- ✚ Increase GRE score (average verbal plus quantitative score = 1200), undergraduate GPA (3.5) and competitiveness for university fellowship funding through aggressive recruiting. (Current: average GRE: 1074, average UG GPA: 3.35)
- ✚ Improve graduate student research productivity so that 100% of theses/dissertations result in at least one publication (Current: 90%)
- ✚ Enhance the graduate student experience by ensuring that 100% of graduate students present the results of their research at national or international scientific meetings (Current: there is no objective measure of this, however subjectively, we believe participation to be below 100%)

The focus of recruitment strategies will be to enhance graduate education in the aforementioned goal focus areas (specifically Strategies 1, 2 and 3). From a graduate curriculum perspective, there will be a greater focus on having students broaden their understanding of the animal sciences by taking more courses that are not directly related to their focused discipline research endeavor. One of the primary issues raised in our Strategic Planning process was that our graduate students were focused on their discipline endeavors in their graduate programs to the extent that they did not develop as animal scientists (i.e., professionals who have the breadth of understanding to be true leaders in the field). The focus in broadening our curricular expectations will, therefore, be enhanced with the implementation of this Strategic Plan, particularly with students who have a desire to focus their career in industry or academia with an outreach emphasis. The resultant students will graduate with the breadth desirable by potential employers, improving their placement opportunities.

- 2) Goal: Undergraduate Students – Recruiting/retention, growth in number of undergraduate majors, increased enrollment of cultural, gender and ethnic minority students; participation in research and international experiences.

This initiative area is specifically addressed in Strategies 2 and 3 and is the primary focus of Strategy 4 above. However, in addition, with this Strategic Plan, we will focus on enhancing the focus on animal behavior, ethology, form and function, and animal welfare in a series of introductory elective classes that allow students to have “hands on” experiences with animals early in their undergraduate programs. In addition, there will be an enhanced focus on satisfying the Department of Animal Sciences Learning Objectives for undergraduate students, particularly in the area of leadership development with implementation of the new Strategic Plan. In addition to excellence in teaching as measured by SEI and peer evaluation of instruction, faculty will be evaluated with regard to advising activities. Metrics of excellence in advising will include student satisfaction as measured in exit surveys and participation in advising workshops.

E. Growth to Optimal Size

For the Department to grow the number of undergraduate students within the major by the proposed 40% by 2013 (Strategy 4), several issues must be addressed both within and beyond the Department.

- 1) Facilities: there are simply not enough adequately sized or technologically supported teaching spaces available on the CFAES campus to accommodate a 40% increase in the number of undergraduate students. Spaces on the remainder of the OSU Columbus campus are also scarce and have the added liabilities of reduced accessibility by faculty members whose office spaces are located on the CFAES Columbus (or worse, Wooster) campus and inaccessibility for bringing in the animals that enhance the hand's-on aspect of many animal sciences courses. This need was addressed by the faculty of the Department in the *Animal Sciences Campus Facility Plan (2-2006)*, and submitted for consideration to the CFAES. A capital campaign to address the needs of the Departments of Animal Sciences and Agricultural, Environmental, and Development Economics has been proposed.

- 2) Teaching and advising faculty: One of the strengths of the departments in the CFAES is that much of the teaching and advising of undergraduate students is performed by faculty members. The trend toward use of temporary instructors and graduate students to teach undergraduate students and assignment of students to a small cohort of staff advisors has been resisted. In senior exit surveys, access to and interaction with faculty is consistently considered a valuable part of the undergraduate experience. The Department has marketed this aspect in our recruitment materials and will continue to do so, however the current teaching and advising faculty FTE is not sufficient to support the

proposed increase in the number of undergraduate students. The Department is considering the use of clinical track faculty and will emphasize teaching excellence as a component of future faculty hires. In addition, emphasis will be placed on the advising role of faculty members through adviser education, alignments of student interests with advisor expertise, and coordination of advising and teaching activities.

3) Support for faculty: Staff, facilities, and resources need to be accessible to continue to attract and retain the highest quality faculty that will be necessary for the Department to succeed in this strategic plan.

4) Hand's-on experiences: Co- and extra-curricular activities serve to expand the undergraduate experience beyond the bounds of the traditional classroom. In addition, access to laboratory experiences and animals within the courses offered by the Department are cited by both students and industry stakeholders as being an essential component of the total educational experience. In fact the consistent response by graduating seniors is that there should be more access to animals and other hand's-on experiences in the context of their coursework. Access to animals requires that the Columbus campus continue to have, in close proximity, animals representing the major agricultural species in sufficient numbers to approximate the industries that they represent. The generation of funds to support the teaching laboratories and animal units via the use of differential course fees has been proposed; however ways to generate alternative funding sources and the potential for reducing the variety of species available, the number of animals within each species, and size of each of the animal units are also being considered by the Department.

V. Summary and Conclusions

As indicated previously in this document, if the trend continues toward paying annual Departmental personnel salary compensations and increases in health benefits without increases in State and federal subsidies into the General Fund, OARDC, and OSUE budgets during the period over which this Strategic Plan is implemented, there will be an additional reduction of two Tenure Track faculty lines with 32 Tenure Track positions being dedicated to satisfying the Departmental mission at completion of the period over which this Plan is implemented.

To address the needs of activities that are important in satisfying the Departmental mission, but that are not consistent with having a major focus on scholarly endeavors through creative independent research activities in the modern university paradigm of advancement (awarding tenure and promotion to full professor) through a tenure track position, the Department is considering alternative personnel hiring rather than tenure track faculty to support the mission of the Department. The trend toward using personnel of these types and others for conducting specific teaching and Extension activities is likely to increase

during the period when this Strategic Plan is implemented along with utilizing greater numbers of Research Track faculty to conduct research.

The personnel infrastructure will change during the period that this Strategic Plan is implemented in a manner that Tenure Track faculty member numbers are maintained for traditional creative and scholarly activities in the research, teaching, and extension-outreach-engagement realms so as to satisfy the Departmental mission. There will be an enhanced focus on increasing the number of personnel (re-employed emeritus faculty on a partial time basis, adjunct faculty, and lecturers as well as possible employment of clinical track faculty members) to maintain flexibility for personnel changes during the period that this Strategic Plan is initiated to attain the Departmental mission in areas where there is less need for scholarly research endeavors.

VI. Appendix A: Business Plan and Budget Model

Talent Plan

A. Funding Faculty and Staff Positions with Existing Resources

During the next 5 years we will focus on those areas emphasized in the **Goals and Initiatives** section of the proposal in the areas of **Food Security, Production, and Human Health; Environmental Quality and Sustainability;** and **Advanced Bio-Energy and Bio-Based Products** in employing faculty and staff members in the Department. The areas of Food Production, Environmental Quality and Sustainability, and Advanced Bioenergy will be particularly emphasized in our research and extension outreach engagement hires. These positions will be filled by employing faculty members as retirements and resignations occur, although some of these vacancies will not be filled, as our assumptions are that we will need to cover faculty and staff salary increases during the 2009-2013 period from Departmental sources without increased State or Federal appropriations for such purposes (see “Major Resource Assumptions” below). Emphasis will be placed on employing tenure track faculty who emphasize research in their programmatic endeavors so as to maintain an optimal balance of faculty on the Columbus and Wooster campuses to most effectively and efficiently conduct the Department’s programmatic activities. Strong consideration will be given to evaluation of effective and efficient use of University, OARDC, and Departmental infrastructure in making decisions on where to physically locate faculty members – either on the Columbus or Wooster campus – with a great amount of research focus in their programmatic endeavors. These signature areas will also be focused on in employing faculty members for instruction. Situations, however, will arise where it is important to fill instruction-focused faculty positions to help teach introductory animal sciences classes, or discipline-based classes where employment of a faculty member with a focus on our signature programs may not be consistent with the qualities needed to excel in instruction of classes of this type. Faculty employed for instruction will sometimes be employed with the title of Lecturer or Clinical Track. There will also be emphasis on utilizing the talents of our Adjunct and Emeritus Faculty Members in instructional endeavors so as to reduce the costs of personnel involved in instruction, and increase the flexibility of the Department’s instruction capabilities and ability to adapt course offerings as the needs of the students and stakeholders change and the pending change to a Semester system is implemented.

The amount of funding available to employ instructional personnel is anticipated to increase as numbers of Departmental majors increase, along with anticipated enhanced enrollments and teaching of more service oriented classes to non-animal science majors, and through an additional student fee that will be charged for instruction in those classes that have great animal and biology-laboratory components in instruction. There will be an emphasis on employing more highly

trained and fewer staff to support the instructional, research, and extension-outreach-engagement Departmental activities. Much of the funding for staff employment will come from extramural sources and from increased instructional earnings with less State and Federal appropriated funding being used for staff hires. Emphasis will be placed on converting some State funded Office Associate positions so as to focus to a greater extent on assisting faculty with writing and reporting activities for extramural funded grant activities. The Departmental personnel with these responsibilities will work closely with those personnel who are employed into the recently announced OARDC Grant Development endeavor that will reside within the OARDC administrative group.

Increased funding for graduate programs (both stipends and research support) will be obtained through strategic leveraging of General and OARDC Funds used to support graduate associateships with external partners in the industry (nutrition, genetic, reproduction, meat science, bioenergy), and/or governmental agencies (USDA-ARS, CSIRO Australia, Australia CRC Programs). These students will be supported through OSU funds (General and OARDC funds for stipends and extramural support for research) during the period they are taking classes and conducting OSU-based research and by our external partners (stipend and research support) while they are conducting research with these companies or agencies.

B. Provide Competitive Compensation

The Department will utilize funding from some vacant faculty and staff positions to provide the annual salary compensations for faculty in the manner that has frequently occurred during the period we implemented the 2001-2005 Departmental Strategic Plan and in recent years (2006-2008). We will also use increased earnings from instruction due to increased credit hours taught as a result of increasing numbers of animal sciences majors and non-majors through service classes. Salary compensations for staff will be covered through enhanced extramural funding for research and extension-outreach-engagement programs. Consistent with the College Strategic Plan, all faculty and staff compensations will be awarded based on merit – excelling in satisfying the responsibilities in the positions into which personnel are employed and through functioning in a fashion to “make the whole greater than the sum of the parts” (i.e., collegiality in manner of functioning).

C. Provide a Welcoming Environment

The Department administrative leadership, faculty members and staff members function in a manner consistent with the College Strategic Plan and Diversity Plan in supporting a welcoming and supportive environment through the manner that we strive to be highly collegial among ourselves and through the service-oriented manner we serve clientele, whether these be students or external stakeholders. Our mode of functioning in this regard was enhanced during the

period of implementation of the 2001-2005 Departmental Strategic Plan and during the interval subsequent to that time (2006-2008), and we will continue to advance development of a welcoming, collegial, and highly service-oriented environment as we implement our 2009-2013 Strategic Plan.

The Department will develop Standard Operating Procedures that will further enhance welcoming and helping with adaptation to our academic unit newly employed Departmental staff and faculty members as well as incoming graduate students and visiting scientists. This will be done so as to provide these people a more comprehensive and in depth perspective of the Department's people and programs and to highlight opportunities for collegial functioning. The newly filled position that focuses on marketing of the Department will work with the Department's Human Resources officers in developing these Standard Operating Procedures in a user friendly format.

As a component of this the commitment to providing a welcoming environment, the Department is participating in a diversity climate assessment in collaboration with the office of Faculty and Teaching Associate Development; the final phase of the assessment of the perception of undergraduate and graduate students toward the environment of the Department with regard to diversity will commence Autumn quarter, 2009. Analysis of the results of the student survey will provide guidance to continued advancement of the welcoming environment of the Department.

D. Diversity Plan

The Department will provide an environment for nurturing diversity and create a climate to enhance retention of ethic, gender and cultural minority faculty, staff and students. The Department will create a climate of inclusion and emphasize enhanced appreciation of the value of diversity and the people that bring diversity to the Department.

Action Steps:

- ✚ Complete the Diversity Climate Assessment analysis of survey research data in collaboration with FTAD (summer, 2009); review data with Departmental personnel (fall, 2009) and develop strategies, action steps and metrics for assessing progress toward established goals
- ✚ Monitor progress to objectives developed as result of Climate Assessment via ongoing interaction with students groups (e.g., Shades of Animal Sciences, Animal Sciences Graduate Student Association), staff and faculty members of the Department of Animal Sciences
- ✚ Evaluate success of plan with follow-up survey research after implementation of action steps (by 2013)
- ✚ Emphasize intentionality to enrich the diversity of the applicant pool in searches for qualified candidates for faculty and staff positions

- ✚ Participate in College and University training opportunities for ways to enhance the diversity outcomes in faculty searches and overcome the barriers inherent in the discipline with regard to the limited pool of potential applicants
- ✚ Encourage participation of faculty and staff members and engage student members of clubs such as Shades of Animal Sciences in efforts to recruit, retain and graduate greater numbers of ethnic minority students

Metrics:

- ✚ Metrics regarding enhancing the climate of the Department with regard to diversity to be established as a result of the Climate Diversity Assessment
- ✚ Grow the number of undergraduate minority students so the percentage of minority students in the Department (currently 6%) is not diminished with increasing enrollment (Current: 32 minority students; Projected: 7% or more of total student enrollment in the major, 49 students of 700 by 2013)
- ✚ Maintain the diversity of the graduate student population through active recruitment of domestic minority students and enhanced retention efforts (Current: 13% of domestic graduate students are minority students; 60% of all graduate students are female; Projected: Maintain)
- ✚ Document elements of searches focused on obtaining a diverse pool of candidates

E. Enhancing Support of Staff Members and Student Employees

The greater number of Department of Animal Sciences' support staff and student employees (as compared with other peer College departments) are essential for Departmental success. We have fostered advancements through training in short courses to enhance technical, service, and leadership qualities of staff during the period of implementation of the 2001-2005 Departmental Strategic Plan and interim period before implementation of the 2009-2013 Strategic Plan. We had considerable success with many personnel in enhancing their skill and leadership qualities. The Department will strive to further broaden these opportunities for staff development during the period of implementation of the 2009-2013 Strategic Plan to: 1) include greater numbers of employees and 2) advance the training of those who took advantage of these training opportunities during the period of implementation of the 2001-2005 Strategic Plan and interim period since that time.

Facility Plan

The Department's current land resources are the 1) Waterman Dairy Unit and associated land at the Waterman Agricultural and Natural Resources Laboratory (246 acres); 2) Columbus Poultry Unit; 3) Don Scott Sheep, Swine, Horse, and Beef Units and associated land (494 acres); 4) Wooster Beef and Sheep Unit and associated land (80 acres pasture, 200 acres cropland); 5) Wooster Krauss Dairy Unit and associated land (34 acres pasture, 172 acres cropland); and 6)

Wooster Poultry (Chicken and Turkey) Units and associated land (less than 1 acre). In addition, animal sciences faculty and graduate students utilize the land resources at the North Appalachian Experimental Watershed Station near Coshocton (beef cattle), Ohio; Eastern Agricultural Experiment Station, near Belle Valley, Ohio (beef cattle); Southern Agricultural Experiment Station near Jackson, Ohio (beef cattle); and Western Agricultural Research Station near South Charleston, Ohio (pigs). Of course, the three primary buildings necessary for conducting the programs of our faculty and staff members are the Animal Science Building on the Columbus campus; Plumb Hall on the Columbus campus; and Gerlaugh Hall on the Wooster campus. These facilities provide office space for faculty, staff, and graduate students; considerable teaching classroom space for students (considering current enrollments); space for some Extension-Outreach Engagement activities; meats harvesting/processing; and research laboratory space for faculty, staff, and students.

The Department was integrally involved in development of the College's Master Plan that evaluated facilities and land holdings. The deferred maintenance situation in the College is epitomized by the situation in the Department of Animal Sciences which has the oldest facilities in the CFAES. We are actively engaged with College administration in developing plans for the CFAES AgBiosciences Center that will house a Learning Center for the personnel and provide infrastructure for several College activities including those of Columbus-based animal sciences faculty and staff except for those associated with the Waterman and Don Scott Animal Units. We would also be an integral component of any Interdisciplinary Facility that focuses on housing food producing animals and/or horses developed at the Waterman and/or Don Scott sites, as well as biomass to energy facilities that are developed at the Waterman site. In addition, due to our strong faculty base located on the Wooster campus, we will be key contributors in the planned BioOhio Research Park on the Wooster campus. The Department has also undergone a comprehensive building planning process in the last few years that has been used to communicate specific Departmental needs to College administration. These plans are consistent with those included in the College's Strategic Planning process.

During the interim period which is likely be several years before new facilities are developed, particularly at the Waterman and Don Scott sites, the Department will collaborate with College leadership in leveraging cash funds and through garnering funds through development activities to maintain our aged facilities so that these are useful in conducting teaching, research and outreach activities until the time new facilities for these purposes are built. We will work with OARDC leadership to leverage Departmental funds to maintain efficient and effective use of research and animal facilities inventoried to the Department on the Wooster campus. Attempting to address deferred maintenance issues that have long been neglected in the Department's physical facilities is a never ending challenge, particularly with the minimal ability of the College to work with

the Department in leveraging funding to address these issues on the Columbus campus.

Another primary aspect of the Department's Facility Plan on the Columbus campus is to divest itself of some buildings where alternative space can be located to conduct these activities and where a reduction in activities can occur without having great detrimental impacts on program quality. Similarly, it is imperative that the Department divest of specific areas within some of the buildings that are inventoried to us (e.g., arena and basement of Plumb Hall), which are either not used at all or minimally so for Department activities. The Department is significantly disadvantaged with the present University budget model because of the large amount of space that either cannot be or can only be used in an inefficient fashion as compared with our peer departments that have more modern space that was built to conduct present day programmatic activities. Actions to divest unused and inefficiently used spaces will only temporarily address the costs for Departmental inventoried facility space. The University budget model will need to be altered so that departments with greater space requirements for programmatic endeavors are not disadvantaged in the manner that exists with the present budget model, which does not consider variation in space requirements for programmatic activities, if these departments are to be sustained for future programmatic endeavors.

Technology Plan

The present Information Transfer technology personnel appointment in the Department is absolutely essential for effective and efficient management of computer and web-based Departmental activities, especially for those on the Columbus campus. The Department will, therefore, maintain this position embedded in our academic unit as the College advances the technology component of its Strategic Plan. In addition, there is a temporary Departmental position focused on marketing of our programs through electronic and public press venues. This position will be converted to a permanent staff support position during the period of implementation of the 2009-2013 Strategic Plan.

In recent years, we have invested in upgrading the "hard" wiring and teaching technologies in the Animal Science and Plumb Hall buildings, and OARDC leadership has invested in doing the same in the Wooster facilities that are inventoried to the Department of Animal Sciences so as to have the capacity to utilize the most modern information technology capabilities in an effective and efficient fashion. In addition, the Department has implemented use of video technologies in some facilities to assess animal behavior and in transferring data. A part of the 2009-2013 Strategic Plan is to incorporate the technologies for more effective and efficient transfer of these data and video recordings from the animal units to faculty and staff offices in the buildings the personnel are housed so that these data and video recordings can be used for research data analysis and in some cases teaching endeavors.

The Department implemented a plan several years ago for methodical replacement of computers in a staged manner. Replacement of computers occurs based on assessments by the Department's Information Transfer Technologist as to the extent of need for replacement. Computer replacements occur about every 4 years. Funds used for this purpose are from staff vacancy salary savings and extramural grant indirect cost recovery.

The Department will co-invest with the College in implementing the use of necessary information transfer security system technologies. This implementation is a particularly strong component of the College's Strategic Plan and the Department will work closely with the College in implementation of security and other important technology transfer systems. We are particularly interested in working with the College and University so that visiting collaborators on research, teaching, and extension endeavors can easily utilize University systems for communication and technology transfer when they are on site contributing to Departmental programmatic endeavors, because the University Guest System is not user friendly in many situations.

Development Plan

Because of our rich alumni history, we are particularly well positioned for Donor Development in the upcoming University Development Campaign. The College of Food, Agricultural, and Environmental Sciences Development Team is rejuvenated under new leadership. We are being more proactive in working with the College Development Office leadership team in gaining a greater understanding of donor capabilities and in approaching potential donors about high priority areas where giving will enhance the quality of our Departmental programs.

Our Department has the greatest need in the College, as evidenced through communication by the College leadership, including the College's Strategic Plan, for newly developed physical infrastructure for our programmatic endeavors. We have many alumni who have become leaders in various agribusiness sectors and beyond. The first step in enhancing our ability to utilize this alumni giving wherewithal is to connect to them and educate them about the many focused endeavors that are ongoing and for which the Department is providing leadership. We will then begin to strategically approach these alumni about giving through the upcoming Development campaign. Our gifted undergraduate students will be used as a resource to connect to alumni and help us in educating potential donors about the strength of our programs and our needs for sustaining our successes. We have found that donors get great satisfaction out of interacting with our highly gifted student body.

Financial Plan

As indicated previously in this Strategic Plan, another action that will be taken is to charge differential amounts for classes taught based on costs incurred in teaching these classes. This will be particularly important in addressing budget shortfalls in teaching classes that are dependent on the use of animals from our University Don Scott and Waterman Animal Units. Without an increase in revenues through extramural grant funding and differential class charges, these animal units, which are highly important in us achieving our mission of using animals for the well being of animal- and human-kind, cannot be maintained. In Extension-outreach-engagement endeavors, faculty and staff will continue to evolve into a system whereby all costs for programmatic endeavors over and above personnel costs will be recovered for all of these endeavors. In situations where the program focus is on education of personnel in a private enterprise, personnel costs will also be recovered for conducting the programmatic endeavor. Most of these budget restructuring activities were initiated during the period of implementation of the previous Departmental Strategic Plan in response to the initiation of the University budget model, Extension budget model of increased cost recovery for programmatic endeavors, and need for enhanced extramural funding to support the personnel and animal unit costs for programmatic endeavors. These budget restructuring processes will continue under this Strategic Plan with faculty creativity continuing to be the order of business in addressing their need to cover greater amounts of costs for the programs that they conduct in research, teaching, and extension-outreach endeavors.

Major Resource Assumptions

A. Estimate of changes in current allocations

- We assume that allocations from OSUE and OARDC will remain near present amounts over the next 5 years, continuing the trend that has been established over the past 4 years
- We estimate that undergraduate enrollment will increase from the current undergraduate student population of 480 to 500 students to 700 students by 2013 as a result of increased emphasis on recruitment in the Department (greater focus on undergraduate recruitment by the new “Student Success Coordinator” hire) and the College; the anticipated result will be an increase in the General Funds allocation

B. Estimate of changes in personnel costs

- There will be a reduced number of personnel to compensate for the annual 4.5 to 5% increase in salary and benefits as mandated by the University
- There will be a relatively equivalent amount of staff FTE reduction as compared with the faculty budget reallocation that is subsequently described.

C. Estimate of faculty turnover and resources freed as a result, and focus in new faculty recruiting

- There are currently two faculty positions (~\$100,000 annually each) for which searches are occurring or that have already been filled during FY09 with discussions proceeding to initiate two or three additional faculty position searches shortly after 1 January 2009
- After FY 09, we assume there will be four additional faculty retirements (~\$110,000 annually each)
- Under the current College process where the full faculty salary amount can be used for budget reallocations to cover salary and benefits increases, two faculty positions (at \$110,000 annually each) will be used to cover existing salary increases (along with reductions in staff described previously)
- This leaves funding for two vacant faculty positions to be filled at \$75,000 each (current rate) for new hires after FY09 (total - \$150,000)
- We will focus on the University Targeted Investment in Excellence programs (Climate, Water, and Carbon and Public Health Preparedness) and other areas of excellence in Animal Sciences (i.e., nutritional sciences and tissue biology – mammary, reproductive, lipid, muscle and connective tissues; anaerobic microbiology) in faculty hires, resource allocation, research focus and graduate recruitment efforts

D. Changes in other sources

- Based on the trend of increases in extramural funding from fiscal year 2005 to present, we anticipate a continued 10% increase per year in extramural funding, with the assumption that there will not be significant changes in the federal government funding structure and grant funding availability
- We anticipate an increase in College General Fund fiscal support for undergraduate research internship stipends. We also anticipate additional funding will be awarded through the OARDC Research Internship Program to support stipends for undergraduate interns. This will allow the Department to focus on providing matching funds through providing funding for research endeavors of these interns. This is consistent with the emphasis on the undergraduate research experience in the College's Strategic Plan.
- We have initiated and plan to continue a highly interactive relationship with the present College Development Office Team and will be proactive in pursuing funding for facilities and personnel
- The Department has undertaken efforts within the last year to aggressively enhance our relationship with alumni by re-establishing an ongoing communication and encouraging feedback and interaction with the Department. We assume these activities will lead to a substantial increase in development opportunities from alumni, and based on the trend of increases in development funding from fiscal year 2005 to present and these enhancements in our efforts, we anticipate a 10% increase per year in development funding.

- The impending College and University Development Campaign will affect the ability of the Department to secure gifts and endowments directed toward Departmental programs and initiatives where there are areas in which the Department's priorities are similar to those of other academic units, colleges, or the University and where numbers of potential donors are limited
- Increased credit hours taught that result from increased enrollments will increase Departmental earnings (\$166,000 in FY10 increasing to \$666,000 FY14).
- Implementation of a base student fees (\$25/class) for each student taking an animal sciences class because of the technology, and resource (animal, and teaching laboratory costs) requirements will provide an additional \$65,650 for FY10 that will increase in a step wise manner to \$87,381 in FY13. In addition, there will be an additional student fee determined based on costs of teaching particularly high cost classes (e.g., molecular biology laboratory class for laboratory supplies, and equine sciences classes because of the much greater costs of maintaining animals to teach these classes)
- Further refinement and enhancement in cost recovery efforts for extension programming, moving toward total cost recovery beyond personnel costs for all programs conducted by Departmental faculty and staff
- Enhanced General Fund subsidy return to the Department as a result of increases in enrollment in service courses
- Enhanced partnerships with external stakeholders (industry, Agricultural Research Service, other government entities), collaborating on graduate education support – stipends and research activity costs; goal – 25% of state funded associateships will be matched with external stakeholders in this manner by 2013, resulting in an enhanced fiscal ability for the Department in graduate education with at least ¼ of graduate student support (stipends and research program costs) coming from external stakeholders (companies and research organizations without graduate programs) by 2013
- Enhanced partnerships with industry stakeholders to support animal unit operations with ¼ of the costs of operations of these units being leveraged with partner industry companies by 2013; if we can't effectively deal with the increased costs of feed and physical facility maintenance, the only viable alternative will be to decrease the number of animal units during the period of implementation of the 2009-2013 Strategic Plan
- Reduce costs by eliminating unused and inefficient space from its space allocations inventory on the Columbus campus
- Pursue use of term hires, visiting professors, adjunct faculty, and lecturers to cover increased needs for instruction (based on anticipated increased enrollment - see previous - and loss of faculty and staff positions to cover increased salary and benefits as previously described in this Strategic Plan) and help decrease costs for instruction **when we can do so without significantly detracting from the quality of instruction**

E. Resource Analysis Summary

During the period of implementation of the 2009-2013 Strategic Plan, the Department will become less reliant of State and Federal funding for programmatic endeavors. The Department will rely on creativity of our faculty and staff members to 1) garner funds from extramural sources for research, teaching, and extension endeavors, 2) develop strategic collaborations from external partners in gaining fiscal support for animal units and graduate programs, 3) increase instructional activities (service classes and increased enrollment) and develop a fee structure for greater cost courses as a result of animal and laboratory use for instruction.