

**Department of Animal Science
College of Agriculture and Natural Resources
University of Connecticut
A Strategic Plan**

“OUR STUDENTS, OUR ANIMALS, OUR COMMUNITY”

Mission Statement

The goal of the Animal Science Department is to provide the citizens of the State of Connecticut with a first class comprehensive program to meet the tripartite missions of teaching, research, and service to animal agriculture. This goal is closely aligned with both the College of Agriculture and Natural Resources' Strategic Plan and the University of Connecticut's Academic Plan.

Specific Mission Goals:

- To educate students for sustainable careers in one of the many disciplines of animal science. These careers include traditional animal production, equine science, animal health industries, animal food processing, food safety, animal biotechnology, and companion animal industries. Students are also prepared for entrance to professional schools such as veterinary and graduate programs.
- Support the agricultural, animal health, and food industries in the State of Connecticut and New England with state-of-art basic research to maintain an economically viable and sustainable agricultural sector through a cadre of highly trained graduates.
- To continue our long term support of the agricultural community through continuing education programs, outreach, and support of community and school based programs, such as FFA and 4-H.

Introduction

The Department of Animal Science is the last comprehensive animal science program left in New England. Animal agricultural programs date to the very beginning of the University of Connecticut and the current department is the descendent of several very strong and historically significant programs. We are the only university in New England that still maintains, teaches, conducts research, and supports outreach programs with all the major livestock species including poultry, dairy, beef, swine, sheep, horses and companion animals. In addition, the department has a strong basic research program in molecular biology, animal biotechnology, and stem cell research.

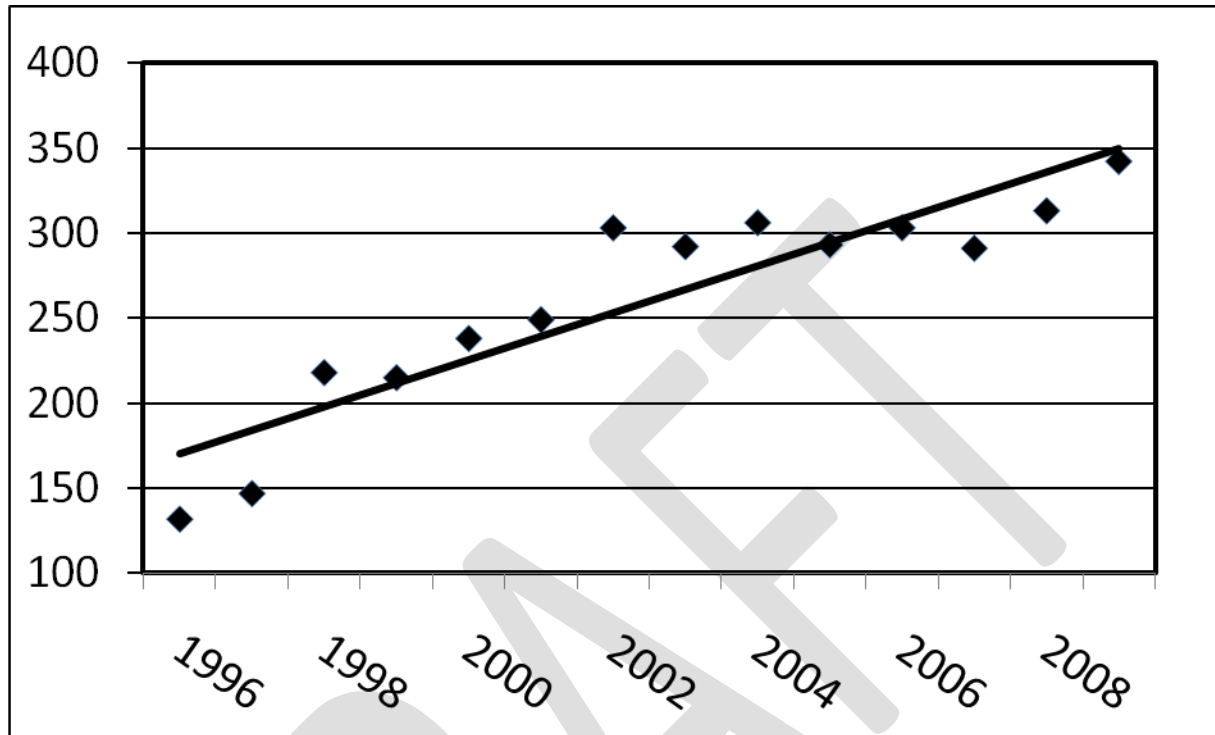
One of the truly unique qualities of our department is the access our students have to our on-campus animal teaching units. This access allows us to have an intense hands-on approach to teaching basic biological sciences and gives our students an experiential learning opportunity that truly sets us apart. The University of Connecticut consistently attracts students from all over New England and the Northeast United States (approximately 25% of our enrollment) who are interested in pre-veterinary science, equine science, dairy science, and general animal science. We are recognized as being the preeminent Animal Science program in New England, and one of very best undergraduate programs in the Northeast United States.

The purpose of this strategic plan is to set both a direction for the department over the next decade as well as to identify specific goals for the next five years. As such, this plan is structured and nested within both the College of Agriculture and Natural Resources Strategic Plan and the University of Connecticut Academic Plan.

Undergraduate Education

The department has a historically strong commitment to undergraduate teaching and advising. This is evident by our many faculty teaching recognitions and overwhelming strong student support. The faculty teach and advise students within their respective discipline areas. In addition to formal teaching and advising, the faculty are also engaged as active advisors and coaches for at least 12 different clubs and teams.

The Department's teaching reputation is supported by our continual increase in undergraduate enrollment. Although student numbers have steadily increased, teaching faculty (teaching FTE) has been declining. Our current student to faculty ratio is approximately over 26:1 (based on faculty head count) but based on teaching FTE the ratio is actually closer to 66:1.

Table 1: Undergraduate enrollment in Animal Science, 1996-**2008**

The main challenges to our teaching program are the demands of continual increasing student numbers impacting our already heavy faculty academic advising loads and increasing pressure on our animal handling and laboratory intensive curriculum. Our teaching program is unique in that our student contact hours do not take place in large lecture forums but rather in intensive environments, such as animal handling classes and laboratory classes, with a high faculty teaching demand. To meet student demand we have a large number of multiple lab sections. Student numbers in these multiple lab sections are restricted by both physical space as well as safety concerns. The animal science program has great potential for continued growth and to

continue to recruit high quality students but we are rapidly depleting our human capital resources to support such continued growth.

Specific Goals (Animal Science Goals nested within the CANR Strategic Plan)

The department is committed to all aspects of the CANR Strategic Plan. There are obvious areas in which we are extremely well suited to make major contributions to the overall College and University Academic plan. The following are specific departmental areas and goals which we feel are most critical to supporting these overall goals by strengthening selective ongoing programs and developing new areas of opportunity.

Goal 1. Recruit and retain a high-quality and diverse population of undergraduate students.

One approach to improving recruitment is to improve the attractiveness of the program relative to opportunities and outcomes (careers and job opportunities). To this end, we see the enhancement of key program areas and student success stories as being critical to effective recruitment.

1. Increase the academic standing and visibility of the Equine Science Program.

Equine science attracts a large number of students and as such can be a strong recruitment program for the department, college, and university.

2. Establish a more robust option in Companion Animals. The long term shifts from rural to urban populations has resulted in a major shift in animal awareness in the general population from traditional agriculture to companion animals.

Companion animal options have proven to be excellent student recruitment

programs that bring students into the larger sphere of animal agriculture with excellent career opportunities.

3. Continue to emphasize a strong science based and practical animal handling program designed to optimize student preparedness for applying to veterinary and post-graduate programs.
4. Strengthen the Food Safety / Food Science option. This area has great career and job potential as well as research and grant potential.

Goal 2. Increase the exposure of students to the immense variety of cultures in our nation and to the peoples, languages and cultures of the world.

1. Increase the opportunities for our student to participate in study abroad programs. We are currently involved with a study abroad program in Florence, Italy and hope to make this an annual offering.
2. Increase opportunities for student to take the Linkages Through Language (LTL) options in select classes.
3. Actively recruit students from under-represented and diverse groups through recruitment scholarships (such as NSF, STRONG-CT, Multicultural Scholars Program).
4. Increase participation in recruiting and attracting international students.

Goal 3. Increase curricular and co-curricular opportunities for students to participate in enrichment activities such as the Honors Program, undergraduate research, service learning, experiential learning, internships and self-directed learning.

The Animal Science Department has a strong historical commitment to this goal. We currently teach over 120 internships and special hands-on experiential learning

credits per year. The department has a number of honors students and undergraduate research opportunities. We also sponsor 12 extracurricular teams and clubs and have an extremely active practicum program. It is critical that we maintain the facilities, the animal population, and the faculty culture in a long term sustainable program (self funding). More institutional commitments are needed to continue to expand our participation in both the honors and undergraduate research program.

Goal 4. Build on the College's leadership role in interdisciplinary undergraduate education in environmental sustainability and in health and wellness in areas related to our disciplinary expertise.

1. Increase opportunities for students to participate in interdisciplinary and interdepartmental programs. Currently, we have strong interactions in the area of animal health and pre-veterinary studies with the Pathobiology and Veterinary Science Department , food safety/food science with Microbiology and Nutritional Sciences, and a Dairy Management Minor with Agriculture and Resource Economics Department.
2. Increase direct interdepartmental programs with ARE and NRE.
3. Develop a more formal interdepartmental effort in food safety/food science.

Goal 6. Recruit sufficient tenure-track or instructional faculty with expertise in core disciplines in areas of strong student demand or demonstrated workforce need.

1. Molecular geneticist with a strong background in agricultural biotechnology or stem cell research.

2. Hire a teaching/research tenure track position in Equine Science to increase the academic quality of the equine program and to initiate a strong graduate and research component.
3. Develop an instructor position (non-tenure track) to be the primary 2 year RHSA instructor and advisor and to be responsible for our core animal management classes.
4. Hire a Dairy Technologist/Food Technologist to expand our food science option, oversee the dairy technology program (including the Dairy Bar) and develop extension/service short courses.
5. Hire a teaching/research tenure track position to support and expand our offerings in companion animal studies. This area has been targeted as a major area of interest for a broad spectrum of incoming students.
6. Increase graduate TA to expand laboratory and support teaching for our high demand undergraduate classes and laboratory intensive courses.
7. Maintain a strong teaching and advising expectation for all faculty hires, regardless of appointment, but commensurate with their assigned duties.

Metrics for Undergraduate Education

The Department of Animal Science is committed to fulfilling its portion of the CANR Strategic Plans metrics. We are especially committed to those relative to increasing transfer students, study abroad participation, increased honors participation, internships, and participation in learning communities. We are most concerned about our large class sizes and excessively high student to faculty ratio.

Graduate Education

The Department of Animal Science has a vibrant graduate program averaging approximately 5 M.S. and Ph.D. graduations a year. Currently, the Department offers three graduate programs: a Master of Science degree, Plan A (with thesis), a Master of Science degree, Plan B (non-thesis), and a Ph.D. degree. There are 14 members of the graduate faculty.

Most of our graduate students receive a stipend from which about 1/3 are state funded, 1/3 are on formula funding, and 1/3 are supported by external funds. The major challenge to our graduate program over the next couple of years is to increase proportion of graduate funding through extramural funds and to adjust to changes in the level of funding as we shift away from “half time” assistantships. Without an increase in extramural funding to support our graduate program the number of GAs will decline.

The Department maintains its commitment to a strong and viable Master of Science Program. Historically, a MS degree in animal science is seen as both a stand alone degree with strong employment options as well as a legitimate research degree often used in preparation for entrance into a Ph.D. program. The graduate program strives to maintain this traditional graduate philosophy in agriculture while being supportive of the direct post-baccalaureate Ph.D. programs more common in the basic sciences. We plan to continue both tracks without diminishing the value of our MS program.

Specific Goals (Animal Science Goals nested within the CANR Strategic Plan)

Goal 1. Develop and sustain graduate and professional programs of national and international prominence in areas of high workforce demand.

1. Need to fill vacant positions (2) formerly co-staffed with the Center of Regenerative Biology to maintain our current national/international prestige in basic molecular biology.
2. Increase the academic quality of our equine science graduate program by establishing a permanent TA position to develop a stronger link between academic training and traditional horsemanship skills.
3. Increase our graduate funding in the area of food safety/food science.
4. Continue to encourage graduate students to present results at national scientific meetings and to set aside funds to be used to match SAES for the same purpose.
5. Stabilize GA funding by using state and matching funds to support and bridge extramural funds. This will allow us better opportunities to manage GA funds and to optimize recruitment of top tier students.

Metrics for Graduate Education

1. Implementation of a graduate assessment plan to track individual student accomplishments and career development.
2. Bring our average time to graduation in line with the CANR Strategic Plan (2 years for MS, 5 years for PhD). This will be accomplished primarily by strict limits on funding duration and semester by semester tracking of all graduate students relative to timely completion of their program.

Research

The Department of Animal Science has a strong research commitment and record of productivity. This past year faculty published 66 original refereed journal papers and book chapters. This is an average of 5 papers/faculty member or a very impressive 13 papers/research FTE. A source of pride is the high percentage of these papers which are authored or co-authored by graduate students.

The department's research capacity has been negatively impacted by the death of Dr. Jerry Yang and the loss of another key contributor to our research program (Dr. Rasmussen). The loss of these two highly productive and successful grant writing individuals constitutes a major challenge to our research portfolio (research output and extramural funding). The middle and junior faculty are still developing their programs and we are several years from seeing these programs develop to their full potential. The need to replace these research faculty lines is critical.

Specific Goals (Animal Science Goals nested within the CANR Strategic Plan and the UConn Academic Plan)

The goals of the Animal Science research program are three fold: to participate in the most basic biological research relevant to modern animal agriculture (as exemplified by our excellent track record in regenerative biology); to continue to train relevant graduate students for industry, academia, and government positions through an active graduate research program; and, to conduct applied research to solve contemporary problems in animal agriculture and in support of our extension and industry service roles.

Funding goals are expected to mirror research goals. Expectations for the basic biological research are for high level competitive grants from scientific funding sources

such as USDA, NIH, and NSF. Expectations for graduate research support are expected to be a combination of sources, including competitive science sources as listed above but would also include trade organization, contract research, and collaborative funding to maintain a long term and sustainable research and graduate education program. Applied and industry research will be supported by combinations of agricultural formula funds, trade organization support, contracts, and gifts.

Goal 1. Maintain areas of recognized research strength and build a few selected new programs based on identified need and opportunity.

1. Basic molecular biology and biotechnology research historically supported through the Center of Regenerative Biology. We have very pressing needs due to the loss of Drs. Jerry Yang and Ted Rasmussen.
2. Equine science is a strong area of our undergraduate program that needs to be expanded with increase academic rigor and more emphasis on graduate education and research.
3. Food science, food safety, dairy technology have been identified as areas for expanded teaching, research, and extension activity.
4. Companion animal science needs additional teaching breadth as well as a complimentary graduate education and research component.
5. Continue to stress the importance of external research support for all faculty and graduate programs.
6. Continue to encourage stronger collaborative and multidisciplinary research at all levels (department, college, university, and multi-state/multi-institutional)

7. Focus targeted areas for national/international research excellence in molecular biology (CRB) and Food Safety.
8. Develop strong links between a competitive research program and our graduate education commitment.

Metrics for Research

1. Recruit top tier faculty in targeted research focus areas (molecular biology/CRB, equine science, food science)
2. Increase external research funding by more aggressive grantmanship and leveraging of research dollars by all faculty.
3. Maintain a strong peer refereed journal publication rate / research FTE.

Extension

The Animal Science Department's extension program remains strong but not well aligned with state needs. Over the past two decades the department has lost important extension positions, primarily in the livestock area. Our current extension faculty maintain highly visible and productive programs in poultry, dairy, and horses. However, the need to meet formal classroom teaching demands, the extension positions have been highly cannibalized and these faculty have been burdened with teaching loads that exceed their current appointments. As a result, several of our farm managers have picked up much of the extension activity relative to working with state associations and youth development programs.

Our extension activity in support of the State 4-H and FFA programs are extensive, especially in the poultry, dairy, livestock, meat science and horse programs.

Considering our extension FTE of 2.3 tenured faculty, our participation in youth programs, 13 extension bulletins, 129 clinical or expert services, and 5 formal outreach programs are quite respectable.

Areas that have been identified as being under staffed are in livestock and dairy technology. The dairy position has already been identified as a split teaching, research, and extension position. The need in livestock may or may not be addressed based on expectations of future hires, primarily connected to the instructor level position for the Ratcliff Hicks School of Agriculture.

Specific Goals

1. Address the needs of the dairy and food industry with the dairy technology position to reestablish the short courses and industry training programs in dairy manufacturing (ice cream, cheese, and yogurt) and food safety programs to support the college food safety team.
2. Examine the reassignment of teaching/research/extension appointments to support our current faculty to be more involved with traditional extension activities sponsored by the department (such as the beef auction and producer group programs) and to support the Department of Extension's many activities.
3. Increase interdisciplinary support for the state extension programs involved in health and well-being. This could be accomplished through more interaction with food safety programs, HACCP training, and food science support for community nutrition programs.

4. Improve our linkages with state, regional, and national animal agricultural organizations. Currently we have very close ties with some, such as with New England collaborations in poultry, dairy, and sheep, and national horse programs but others have been less well maintained (food science, dairy technology, and livestock).

Extension Programming Metrics

1. Maintain high level participation in State 4-H and FFA youth programs.
2. Maintain high level of services as evidenced by our formal extension publications, programs, and clinical or expert services.

FACILITIES

On the whole, our physical facilities are adequate for present needs and some limited growth. The animal facilities are currently undergoing renovations to meet the institutions commitment to receiving AAALAC Accreditation. When completed, our animal facilities will be compliant and adequate for our teaching, research, and service needs.

First class laboratory space is severely limited and only available within the ATL and ABL. Laboratory facilities in the George White Building are grossly out of date and are in need of major renovation and upgrading (floors, asbestos abatement, insufficient power needs, poor casework, non-existent environmental control, and in many cases simply old, worn, and unappealing). Teaching space (classroom and teaching labs) are adequate but need updating. Office space is barely adequate, poorly designed, and also in serious need of renovation (asbestos abatement, environmental controls, privacy

issues). Renovation of George White is sorely needed and long overdue. Included in this renovation should be additional BL 2 and 3 labs.

Two additional areas that need attention are the Ratcliffe Hicks and Horsebarn Hill arenas. The Ratcliffe Hicks arena is no longer available for many of our teaching and service functions. The loss of this highly flexible facility has been a major problem and is causing program reductions (loss of teaching labs, cancellation of extension and service activities such as short courses, auctions, and shows). The Horsebarn Hill Arena is used six days a week and is in need of renovations to add animal handling areas on both wings, improved lighting, handicap access and seating, and heat. The expansion of the horse program is putting major pressure on these facilities and the construction of an additional indoor riding area is warranted.

HIRING AND STAFFING NEEDS

Based on current enrollments and expected enrollments over the next five years, research expectations, and service demands, the Animal Science Department should be staffed with 20 faculty lines (tenure-track and non-tenure-track) and 19 professional and classified positions. This number is based on keeping our student:faculty ratio in line with both UConn and CANR standards, to maintain a viable extramurally funded research program, and to meet our state obligations to the agricultural community.

Faculty Hiring Goals:

Faculty hiring goals are based on meeting the program goals in teaching, research, and service as described above. The first two identified needs are critical and

immediate while the other positions are focused on long term viability of the program and strengthening the identified focus areas for the future:

Priority List: Immediate needs

1. Molecular geneticist to replace Dr. Rasmussen (25% teaching, 75% research).
The genetics class is required of all undergraduate students and we do not currently have a faculty member with sufficient background in either traditional or molecular genetics to assume responsibility for the course. This position is also consistent with our strategic plan, the CANR Strategic Plan, and UConn Academic Plan relative to research priorities.
2. Equine science teaching and research to replace James Dinger (60% teaching, 40% research). Equine science is the primary interest of our two-year students and about 40% of our four-year students. This position is important to maintaining the teaching requirements as well as having an identifiable resource for both our undergraduate teaching and emerging graduate and research emphasis in equine science.

Hiring goals (not in ranked order)

3. Instructor to focus on the two-year Ratcliffe Hicks program and to teach our major animal management classes.
4. Food science / dairy technology (25% teaching, 50% extension/service, 25% research)
5. Animal Biotechnology position to replace Jerry Yang (25% teaching, 75% research).
6. Companion animal scientist (40 teaching, 60% research)

Staff Hiring Goals:

The primary staff hiring goals are to replace agricultural worker positions, administrative support staff, and technical support staff. We are currently at a critically low level for administrative support (secretarial/clerk-typist, financial support), technical support (laboratory, equipment maintenance and operations, computer, IT, research support), and farm personnel at both the manager (1) and classified levels (2). These positions are absolutely critical to maintaining our commitment to animal welfare, research, and the numerous programming and administrative demands required for the complex operation of the Animal Science Department (academic, research support, practicum programs, 12 extracurricular organizations, service activity including short courses, auctions, student services, and the maintenance and operation of 6 additional organization structures – UConn Dairy Bar, Kellogg Dairy Center, Poultry Unit, Cattle Resource Unit, Livestock Units, Horse Farm, Horsebarn Hill Arena, and Meats Lab).

Hiring Goals (unranked):

1. Permanent technical support and regulatory compliance officer (Moré)
2. Clerk-Typist (Reiser)
3. Lead Agricultural Worker (Kissman)
4. Poultry Unit Manager
5. Administrative support (1/2 clerical, 1/2 financial)
6. Technical Support (UCPEA)
7. Agricultural Worker (Chamberlain)

SUMMARY OF ANIMAL SCIENCE STRATEGIC PLANNING GOALS NEEDS

Faculty Hiring Goals (unranked)

Position	Teaching	Research	Extension
Molecular Biology / CRB 1 (Yang)	X	XX	
Molecular Biology / CRB 2 (Rasmussen)	X	XX	
Instructor (RHSA) (new)	XXX		
Dairy Technology (Dzurec)	X	X	X
Food Safety/Food Science (new)	X	XX	
Equine Science (Dinger)	XX	X	
Companion Animal (new)	XX	X	

Staff Hiring Goals (unranked)

1. Technical support – regulatory (Moré)
2. Clerk-Typist (Reiser)
3. Poultry Unit Manager (Wheeler)
4. Lead Agricultural Worker (Kissman)
5. Administrative support (1/2 clerical, 1/2 finance)
6. Technical support (lab, equipment, computers, etc.)
7. Agricultural worker (Chamberlain)

Facilities

1. Ratcliff Hicks Arena Renovation
2. George White Renovation (including BL 2 and 3 labs)
3. Horsebarn Hill Arena Expansion