

Collection Policy: ANIMAL SCIENCE

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1.0 TEACHING, RESEARCH AND EXTENSION PROGRAMS

1.1 Mission and emphases of the department

The major focus of the department is on food and fiber-producing animals and animals for traction, including dairy cattle, beef cattle, sheep, goats, swine, poultry and game birds. There is also interest, particularly among undergraduates, in the care and physiology of horses, companion animals such as dogs and cats, and small laboratory animals. There is limited interest in exotic species. World Wide Web pages describing the Animal Science program are located at www.ansci.cornell.edu/. Some of the material in this policy has been extracted from these pages.

1.2 Faculty research

Research runs the gamut from applied to basic research and from research at the molecular level to global issues. The department's programs are ranked among the best in the country. Major research areas are:

Animal Behavior

Animal Breeding

specifically, statistical and quantitative genetics, dairy cattle breeding, dairy sire selection

Animal Growth and Development

specifically, skeletal growth

Animal Nutrition

specifically, dairy cattle nutrition, nutritional biochemistry, amino acids, nitrogen metabolism, metabolic regulation, nutritional physiology, interactions among vitamins and minerals, ruminant nutrition, equine nutrition, sheep nutrition, poultry nutrition, mineral nutrition of simple stomached animals, fiber, rumen metabolism

Animal Physiology

specifically, reproductive physiology, muscle biology, neuroendocrinology, comparative reproductive physiology, rumen bacterial digestion of forages

Companion Animals

Dairy Systems

specifically, dairy cattle management, nutrition

Exotic and Zoo Animal Research

Horse Systems

International Animal Agriculture

specifically, livestock production in developing countries

Lactation

Livestock Systems

domestic animals other than dairy cattle and poultry

Meat Science

Molecular Animal Biology

specifically, molecular biology of productive functions in farm animals, gamete physiology, biochemistry, cryobiology, molecular ovarian physiology

Nutritional Toxicology

Poultry Systems

Sustainability of Animal Agriculture

specifically, dairy forages and sustainability

1.3 Graduate program

Approximately 70 graduate students pursue M.S. or Ph.D. degrees in Animal Science. Each student belongs to the Field of Animal Science and typically chooses one of the following areas of concentration: animal nutrition, animal science, or physiology of reproduction. Some students apply to additional fields, such as Nutrition, Physiology, Food Science and Technology, and Animal Breeding. The M.S., which may be a terminal degree, prepares students for positions in industry, agribusiness, extension, teaching or research. The M.P.S. (Master of Professional Studies) degree involves coursework relating to existing professional interests of the candidate. The Ph D. degree emphasizes training for independent research, usually in universities, industry or government.

1.4 Undergraduate program

From 400-500 undergraduates are advised by Animal Science faculty. Course requirements for majors are organized into seven pathways: dairy cattle management, physiology, animal nutrition, genetics, growth and development, livestock/poultry, international agriculture, and pre- veterinary. The special program Dairy Farm Management Fellows enables students to visit and evaluate progressive dairy farms, dairy industries and milk marketing cooperatives. A similar program is available for students interested in livestock.

Animal Science graduates typically pursue careers in research, veterinary medicine, animal production, agribusiness, and extension or high school education. Some are employed by agricultural businesses such as banks, feed companies and pharmaceutical companies. Others work internationally in organizations such as the Peace Corps or International Voluntary Service. One-third of the undergraduate majors plan to enter graduate or professional schools to obtain advanced degrees. These degrees may qualify them for positions in research at universities, biomedical laboratories, in industry or in government.

1.5 Extension activity

Animal Science offers Youth Extension Programs for young people and Cooperative Extension Programs for adults. Besides various special projects, the Youth Extension Programs include 4-H programs in raising beef cattle, birds and poultry, Guinea pigs, dairy cattle, dogs, goats, horses, pets, rabbits, sheep, and swine. Extension also creates program materials for youth in such areas as veterinary science, animal

incubation, etc.

The Cooperative Extension Programs aims to keep producers of dairy cattle, beef, sheep, swine, poultry and horses abreast of the latest research findings in animal breeding, nutrition, reproduction and management. Extension specialists serve as resource people for extension associates, county and regional agents, veterinarians, cooperatives, producers and others. They hold conferences and workshops and create videos, software, print materials and interactive computer linkages. One unusual feature of Cornell's program is the close connection between extension and undergraduate teaching in dairy management. This involves both extension faculty in the classroom and students on farm visits assisting extension personnel with problem analysis.

1.6 Noteworthy facilities (e.g. unique classrooms, laboratories, farms, etc.)

The home of the Department, Morrison Hall, includes over 20 research laboratories, several animal rooms and a small animal surgery. Other special facilities include:

- Animal Science Teaching and Research Center in Harford
- Dairy Unit with barn and milking parlor
- Beef Unit with cattle handling area, feed mixing area, feeding facilities and electronic feeding doors
- Sheep Unit with laboratory and shearing area
- Poultry Unit with research facilities and feed mixing unit
- Swine Unit on Pine Tree Road with gestation and breeding wing, two farrowing wings, two nursery wings and laboratory
- Equine Nutrition Unit with facilities for horses, ponies, donkeys
- Large Animal Research Teaching Unit with facilities for intensive metabolic studies
- Mount Pleasant Sheep Unit with year round lambing program
- Reed Farm, a heifer facility on Stevenson Road with a surgical suite for large animals
- Goat Unit adjacent to Reed Farm
- On Campus Teaching Barn with housing for farm animals used in teaching
- Livestock Pavilion with space for demonstrations, training sessions, shows and sales.

2.0 SUBJECT DESCRIPTION AND GUIDELINES

2.1 Subject definition

Animal Science is the study of the biology and management of domestic animals. (This definition was taken from the Cornell University, College of Agriculture and Life Sciences, Animal Science home page: <http://www.ansci.cornell.edu/index.html>)

2.2 Subject scope

The following categories are collected at a level 4 for domestic animals (dairy cattle, beef cattle, goats, sheep, swine, poultry and game birds.).

Biology

Including reproductive physiology, neuroscience, regulatory mechanisms, vital systems, digestion, metabolism, growth (embryonic, fetal and postnatal), development, fertility, reproduction (including gamete formation, maturation, transport, and fertilization), lactation.

Behavior

Including communication, learning, social interactions, feeding, mating, defense mechanisms, behavior in the domestication process.

Nutrition

Including digestive physiology, nutrient requirements, principles of feed evaluation and ration formulation. Bioenergetics. Protein digestion and absorption, amino acid transport and metabolism. Mineral metabolism and specific mechanisms of gene expression, regulation and mammal health disorders associated with individual elements. Vitamins. Toxic doses of nutrients and interference with the metabolism of nutrients by toxic compounds. Poisonous plants and toxicants found in feeds and foods. The use and nutritional value of tropical grasslands, seeded pastures and crop residues as feed resources. Programming techniques in diet formulation.

Genetics

Including quantitative genetics. Animal breeding.

Economic and Business Aspects of Animal Production

(Described in [Agricultural Economics](#) policy.)

Facilities

Including housing, equipment and optimal environments for animals (described in Agricultural Engineering policy).

Production Methods and Management

(See more detail below for specific animals.)

Animal Health, Disease Prevention, Parasite Control

Meat Science

Including the structure, composition and function of muscle and its conversion to meat; properties of fresh and processed meat; microbiology, preservation, nutritive value, inspection and sanitation; animal slaughter, meat cutting, cut identification, grading, curing, sausage manufacture; quality control; packaging, handling, storage.

Ethics, Animal Rights and Animal Welfare Issues

The following topics apply to specific categories of animal and are collected at a level 4.

Avian Husbandry

Care, nutrition, management, health and breeding.

Commercial Poultry Production

Dairy herd management

Including milking, housing, records, production economics, herd health.

Swine as a Model in Medicine

Aquaculture

(Described in Agricultural Engineering policy.)

Tropical Livestock Production

Including economic objectives, production methods, and alternative systems of production.

Endocrinology

Including humans and most other animals.

Exclusions:

Anatomy, physiology (except for reproductive physiology), diseases, and the care and physiology of zoo animals, horses, laboratory animals and pets, all of which are collected by the Veterinary Library.

There is little interest in non-food animal products (e.g., feathers, furs, hides) and their processing.

2.3 Emerging trends in the subject area

Biochemical, cellular and molecular animal biology; animal rights and animal welfare; appropriate technology and animal science. Companion animals, especially non-conventional varieties, such as exotic birds and rabbits.

3.0 SPECIAL INFORMATION NEEDS AND RESOURCES

3.1 Special information needs of those working in this subject area.

AGRICOLA, CAB, BIOSIS.

NetVet, on the World Wide Web, is also used.

3.2 Special collections or noteworthy resources in the field

Poultry thesis collection.

3.3 Endowment funds or special funding arrangements

- Bayern Endowment (Animal Science and Nutrition)
- Mann (General Biology)
- Biomedical
- Rice (Poultry Science)
- Sherman (Microbiology)
- Wright (Vertebrate Biology)
- Clausen (Biology treatises)
- Sarna (Genetics)

4.0 TYPES OF MATERIALS

4.1 Priorities for types of materials

See [Priorities Table](#).

4.2 Format

4.3 Geographical guidelines

Global, with the following priorities, 1) New York State, 2) Other U.S., 3) Developing countries.

4.4 Language guidelines

English, except on request.

4.5 Chronological guidelines

Current, except on request.

5.0 OTHER RELATED LIBRARY COLLECTIONS

Veterinary Library

Animal diseases, basic biology, anatomy, physiology (except for reproductive physiology and neuroscience), and diseases. Neuropathology and neuroanatomy. The care and physiology of zoo animals, laboratory animals, horses and pets. Pet therapy and the human-animal bond. Animal virology, parasitology and immunology.

6.0 POLICY QUESTIONS, COLLECTION NEEDS, FUNDING PROBLEMS OR OPPORTUNITIES

The division of responsibilities between Mann and the Veterinary Library for both human and non-human reproductive physiology needs to be refined.

7.0 PRINCIPAL LC CLASSES

- SF 1-294
- SF 371-401
- [SF 405.5-473 if pets]
- SF 481-507
- [SF 508-518 if game birds]
- QL 696.F3-QL 696.G285
- QL 697-649 (for birds described above)

- HD9410-9429
- HD 9433-9437
- TS 1950-1981

8.0 RELATED COLLECTION POLICIES

- IAD
- NUTR
- AGEN -- buildings, equipment, optimal environments for domestic animals, aquaculture
- BIOT
- FOOD
- GENE
- AGRO
- PHYS -- general zoology
- AGEN -- marketing of livestock, financial aspects of animal production
- TOXI

Priorities Table for Animal Science

Code	IMPORTANCE/INTENSITY CODES DEFINITIONS
NA	Not applicable to the discipline.
0	Ephemeral; of insufficient value to be provided by library.
1	Of short term interest, but with little or no enduring value; very selectively acquired; retained, uncataloged, for limited duration only, e.g. newsletters in newly emerging, poorly documented areas, and manuals or pamphlets for reserve reading.
2	Limited scholarly interest or utility; collected very selectively, but not of high priority.
3	Important for research and/or instruction; should be well represented, but collected selectively rather than intensively.

4	Very important for faculty and/or students; intensively collected, i.e. every effort is made to provide as deep coverage of this literature as possible.
5	Essential to work in the discipline; the most important type of material for research or instruction purposes. Ensuring the highest possible coverage should be the library's top priority in this discipline.

Code	SERIALS	Notes
5	Journals, scholarly	English, German, French
5	Journals, technical	-
-	Journals, other (describe)	-
5	Annual reviews, advances in...	-
5	Scientific and technical reports and research bulletins of major academies, learned societies, professional research and educational organizations and government agencies	-
4	Proceedings, of international congresses and symposia	-
5	Proceedings, national or local	-
3	Statistical series	-
4	Trade journals and periodicals	-
3	Popular periodicals, hobby	-
3	Popular periodicals, semi-technical	-
-	Popular periodicals, farm press	-

2	Newsletters/newspapers	-
2	Proceedings of legislative bodies	-
2	Student publications	-
-	Administrative publications of major academies, learned societies, professional, research and educational organizations and government agencies	-
2	Corporate annual reports	-
3	Yearbooks	-
1	Press releases	-
1	Lists	-
1	Working papers	-

Code	MONOGRAPHS	Notes
5	Major scholarly monographs	-
5	Professional and technical	-
3	Subject histories	-
4	Textbooks, upper division, graduate	-
3	Biographies	-
4	Popular monographs	-

Code	ELECTRONIC INFORMATION
-	Applications programs
-	Bibliographic databases
-	Bulletin boards
-	Fulltext files
-	Geographic information systems

4	Technical reports	-
3	Government reports	-
4	Proceedings, international	-
-	Proceedings, other	-
-	Theses and dissertations (outside CU)	-
3	Festschrift	-
2	Patents	-
2	Corporate histories	-
4	How-to books & lab manuals	-
2	Pamphlets	-
2	Ephemera (describe)	-
2	Maps	-
4	Technical bulletins/handbooks/compendia	-

-	Numeric/statistical files
-	Other (describe, taking as much space a necessary)