

Biological Sciences

Information Access Policy

Clemson University Libraries

Biological Sciences Librarian: [Lois Sill](#)

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I. Mission of the Clemson University Department of Biological Sciences

The Department of Biological Sciences offers undergraduate programs leading to the B.S. in Biological Sciences and a B.A. in Biological Sciences. Graduate programs are offered that lead to the M.S. and Ph.D. degrees in microbiology and zoology; to the M.S. in botany; and to the Ph.D. in plant physiology. A nonthesis M.S. program in zoology is also available. Genetics and biochemistry have split off to form a separate department as has microbiology and molecular medicine.

The diverse interests of faculty members span the spectrum of biology, ranging from molecular and cellular biology through organismal biology to ecology, evolution, and population biology. Students benefit from this diversity and from the high degree of collaboration among faculty members. In addition, the department enjoys close ties with several other departments, universities, and facilities; these provide opportunities for interdisciplinary research and training.

The degree programs are designed to prepare students for careers in research and teaching through course work, research, student teaching, seminars, journal clubs, and informal discussion. Students are expected and encouraged to develop the habits of independent, critical thought and study.

A. Purpose/Objectives

The following is from the *2001-2002 Clemson Undergraduate Announcements*: “Biology encompasses the broad spectrum of the modern life sciences, including the study of all aspects of life from the structure and function of the whole organism down to the subcellular levels and up through the interactions of organisms to the integrated existence of life on the entire planet. Descriptive, structural, functional, and evolutionary questions are explored through the hierarchy of the organization of life. Applications of current advances to the health and well being of man and society, to nature and the continuation of earth as a balanced ecosystem and to an appreciation of the place of natural science in our cultural heritage receive emphasis. Majors in Biological Sciences receive classroom, laboratory, and field training in biology with an emphasis on chemistry, mathematics, and physics as necessary tools. The Bachelor of Science in Biological Sciences curriculum prepares students for graduate study in any of the life science areas (such as agricultural sciences, biochemistry, botany, cell and molecular biology, conservation, ecology and environmental science, entomology, forestry, genetics, industrial and regulatory biology, microbiology, morphology, physiology, wildlife biology, and zoology, for the health professions (medicine, dentistry, etc.), veterinary medicine, and for science teaching.”

B. Faculty

The department’s twenty-eight faculty represents more than thirty areas of research specialization. Interdepartmental collaboration is fostered by organization of the faculty into research interest groups which cut across traditional degree boundaries and allow graduate students to develop innovative, interdisciplinary programs of study.” The URL leading to the Biological Sciences faculty pages is <http://www.clemson.edu/biosci/faculty.html>

C. Primary and Secondary Users

The primary users are undergraduates from the College of Agriculture, Forestry and Life Sciences but also from the departments of nursing and health science in the College of Health, Education and Human Development.

1. Primary Users (Fall 2001 data on number of students enrolled in programs)

Biological Sciences	(BS)	408	
Biological Sciences	(BA)	64	
Botany	(MS)	5	
Zoology	(MS)	9	(PhD) 17

2. Secondary Users

Undergraduates not majoring in the sciences often choose topics from the life sciences for their freshman papers. Many biology topics are now “hot news” – cloning, stem cells, anthrax, mad cow disease, bioterrorism – books are purchased that cover these topics in a general way and that are written for the non-scientist.

Also, much of the material in the life sciences is interdisciplinary. Materials bought for one department are used by faculty, students, and staff in many other departments.

Community residents also use the biological science materials especially in the areas of natural history.

D. Curriculum

The URL leading to the entry for Biological Sciences in the Clemson University 2001-2002 *Undergraduate Announcements* is given below. It lists all the courses required for the difference degree programs.

<http://www.registrar.clemson.edu/publicat/catalog/sections/colleges/cafls/biosc.htm>

II. Scope of the In House Collection

The biology collection in the Clemson University Libraries primarily supports the teaching and research needs of the Department of Biological Sciences faculty, graduate students, and undergraduate majors. The collection is also used by a number of Clemson faculty and students outside Biological Sciences; many undergraduates use this material in writing freshman term papers covering such topics as cloning, endangered species, animals used as test subjects, etc. In addition, the biology collection contributes substantially to the teaching and research work of the Department of Public Health and the School of Nursing. Collecting efforts are aimed at maintaining a well rounded biology collection, with special strengths in areas of present research interest at Clemson and areas where advanced degrees are given, but which also provides materials for the undergraduate in all areas of the biological sciences, and which will in the future provide an adequate basic collection as research interests change.

A. Library of Congress Subject Areas Covered

L.C. Class	Description
QH 1-74	Natural History – General
QH 75-81	Nature Conservation
QH 84-199	Geographical Distribution - Biogeographical Ecology

QH 204-27	Microscopy
QH 305-42	Biology, incl. population biology and evolution
QH 423-499	Genetics
QH 505	Biophysics
QH 506-529	Molecular Biology
QH 540-559	Ecology
QH 573-671	Cytology
QK 15-599	Botany, incl. plant geography, seed plants and cryptograms
QK 600-638	Fungi, including arctic regions
QK 641-899	Plant Anatomy and physiology
QK 900-939	Plant Ecology
QL 5-345	Zoology – General
QL 101-221	Zoology, North America, incl. Canada and Polar Regions
QL 351-352	Classification Systematics taxonomy and nomenclature
QL 365-454	Invertebrata
QL 473-599	Insecta
QL 606-607	Chordata Vertebrata – general
QL 610	Protochordata
QL 619-639	Fishes
QL 625-629	Freshwater Fishes - North America
QL 637	Freshwater Fishes - Arctic Regions
QL 651-664	Reptiles and Amphibians – General
QL 651-654	Reptiles and Amphibians - North America
QL 666	Reptiles
QL 669	Amphibians
QL 671-698	Birds
QL 708-739	Mammals – General
QL 708.3	Mammals – Evolution
QL 715-736	Mammals - North America, Canada and Arctic
QL 737.C5	Chiroptera
QL 737.R6	Rodentia
QL 739-739.2	Mammals - Anatomy and Morphology and Physiology
QL 750-795	Animal Behavior. Ethology
QL 799-950	Morphology
QL 95	Embryology
QM 690-691	Human Embryology
QP 501-625	Biochemistry, incl. hormones, enzymes and nucleic acids
QP 670-671	Pigments
QP 701-702	Carbohydrates
QP 751-752	Lipids
QP 771-772	Vitamins
QP 901-981	Experimental Pharmacology
QR 12-189	Microbiology, incl. bacterial genetics and immunology
QR 201-353	Pathogenic micro-organisms
QR 359-484	Virology

B. Core Biology Journals

Many of these journals fall outside the typical QH to QR Library of Congress call number range for the life sciences and that helps illustrate how interdisciplinary the subject areas are becoming.

In addition to our print collection of journals, we now have more than three thousand journals available online, <http://www.lib.clemson.edu/ej> More journals are being added to this site daily.

TITLES

Advances in carbohydrate chemistry and biochemistry
Advances in enzyme regulation.
Advances in enzymology and related areas of molecular biology.
Advances in human genetics.
Advances in immunology
Advances in marine biology.
Advances in microbial ecology.
Advances in microbial physiology.
Advances in protein chemistry.
American Journal of Botany.
American Journal of Clinical Nutrition.
American journal of human genetics.
American Journal of Physiology.
American Naturalist
American Scientist.
American Zoologist.
Analytical biochemistry.
Analytical Chemistry.
Animal Behaviour.
Annals of Applied Biology.
Annals of Botany.
Annals of Nutrition and Metabolism.
Annals of the Entomological Society of America.
Annual Review of Biochemistry
Annual Review of Ecology and Systematics.
Annual Review of Genetics.
Annual Review of Microbiology
Annual Review of Neuroscience.
Annual Review of Physiology
Annual Review of Phytopathology.
Annual Review of Plant Physiology and Plant Molecular Biology.
Applied and Environmental Microbiology.
Applied Microbiology and Biotechnology.
Archives of Biochemistry and Biophysics.
Archives of Microbiology.
Auk: A Quarterly Journal of Ornithology
Australian Journal of Plant Physiology.
Behavioral Ecology and Sociobiology.
Behaviour
Biochemical and biophysical research communications.
Biochemistry.

Biological Reviews of the Cambridge Philosophical Society.
Biology of Reproduction.
Bioscience, Biotechnology, and Biochemistry.
BioScience.
British Journal of Nutrition.
Bulletin of Entomological Research.
Canadian Journal of Botany.
Canadian Journal of Fisheries and Aquatic Sciences
Canadian Journal of Forest Research = Journal Canadien de la Recherche.
Canadian Journal of Plant Science.
Canadian Journal of Zoology
Cell
Cellular and Molecular Life Sciences (Form. Experientia)
Chromosoma.
Comparative Biochemistry and Physiology. B. Biochemistry and Molecular Biology
Conservation biology.
Copeia.
Coral Reefs : Journal of the International Society for Reef Studies.
Critical Reviews in Microbiology.
Developmental biology
Ecological Monographs.
Ecology.
Economic Botany.
Endocrinology.
Entomologia, Experimentalis et Applicata.
Environmental Pollution.
Essays In Biochemistry.
Euphytica.
European J of Biochemistry.
European Journal of Forest Pathology.
European Journal of Phycology.
Evolution.
Evolutionary biology
Evolutionary Ecology.
FASEB Journal.
FEBS Letters.
FEMS Microbiology Letters.
Forest Ecology and Management.
Forest Science.
Forestry.
Fungal Genetics and Biology.
General & Comparative Endocrinology.
Genetical research.
Genetics.
Heredity; An International Journal of Genetics.
International Journal of Plant Sciences.
Journal of Animal Ecology.
Journal of Animal Science.
Journal of Applied Bacteriology.
Journal of Applied Bacteriology.
Journal of Applied Ecology.

Journal of Applied Physiology.
Journal of Basic Microbiology.
Journal of Biological Chemistry.
Journal of Cell Biology.
Journal of Cell Science
Journal of Cellular Physiology
Journal of Chemical Ecology
Journal of Clinical Investigation.
Journal of Comparative Physiology. A. Sensory, Neural, and Behavioral Physiology.
Journal of Comparative Physiology. B. Biochemical, Systemic, and Environmental Phys.
Journal of Ecology.
Journal of Endocrinology.
Journal of Environmental Quality.
Journal of Evolutionary Biology.
Journal of Experimental Biology
Journal of Experimental Botany.
Journal of Forestry.
Journal of Heredity.
Journal of Mammalogy.
Journal of Molecular Biology.
Journal of Nematology.
Journal of Neurophysiology
Journal of Nutritional Biochemistry (Form. Nutrition Reports Int'l)
Journal of Plant Physiology
Journal of Reproduction and Fertility, and its Supplement.
Journal of Theoretical Biology.
Journal of Virology.
Limnology and Oceanography.
Lipids.
Marine Biology.
Marine Ecology Progress Series
Methods in Enzymology
Microbial Ecology.
Microbiological Reviews.
Microbiology.
Molecular and General Genetics.
Molecular Biology and Evolution
Molecular Microbiology
Mycologia.
Nature.
Nematologica; International Journal Of Nematological Research.
Neuron.
New England Journal of Medicine.
Nucleic Acids Research.
Oceanography and Marine Biology; An Annual Review.
Oecologia.
Philosophical transactions. Biological sciences. B.
Photochemistry and photobiology.
Physiologia Plantarum.
Physiological and Molecular Plant Pathology.
Physiological Reviews.

Physiological Zoology
Phytochemistry.
Phytopathology.
Plant Disease.
Plant Pathology.
Plant Physiology.
Plant, Cell and Environment.
Planta; Archiv für Wissenschaftliche Botanik.
Proceedings of the National Academy of Sciences (U.S.).
Proceedings of the Society for Experimental Biology and Medicine.
Proceedings. Biological Sciences. Royal Society of London. Series B.
Progress in nucleic acid research and molecular biology.
Quarterly Review of Biology.
Science.
Scientific American
Silvae Genetica.
Systematic Biology.
The Biological Bulletin.
The Botanical Review.
The Canadian Entomologist.
The Commonwealth Forestry Review.
The European Molecular (EMBO).
The Forestry Chronicle.
The Journal of General Physiology
The Journal of General Virology
The New Phytologist.
The Plant Cell.
The Plant Journal.
Theoretical and Applied Genetics.
Trends in Ecology and Evolution.
Virology.
Water, Air, and Soil Pollution.

C. Other Resources Available

1. The Libraries has Ingenta UnCover Plus (web-based) available to all students, staff, and faculty. This service indexes more than 17,000 journals and can be searched from any computer on campus with a web browser. Searches can be keyword based or by journal title. Copies of articles from journals not subscribed to by the Clemson University Libraries are free to the user and can be ordered in real time. Copies can be faxed to the user's department or computer. At the present time, there is no easy way to find out what is ordered by the biology department through UnCover Plus.
2. R.M. Cooper Library also provides free interlibrary loan service (ILL) to students, faculty, and staff. Also, the Libraries will use commercial document suppliers if there is no other option. For the fiscal year 2001-2001, staff, faculty, and students from the Biological Sciences Department ordered fifty-six books. More than ten of these were very new books that the Clemson Library received soon after the ILL request came through. Several of the books were very old, out-of-print books dealing with botanical topics. There were also more than ten books included that were not biology related –

simply books the person was interested in reading for personal or entertainment purposes. The faculty, staff, and students from Biological Sciences ordered 265 journal articles through ILL. Many of the journals from which articles were ordered are now owned by the Libraries in online format.

3. Free access to the following bibliographic databases is also available

Web of Science	Zoological Records Online	BIOSIS
Agricola	CAB Abstracts	Medline
Dissertation Abstr. Inter.	Current Contents	Lexis Nexis Academic
Biological & Agricultural Index	Zoological Record	

Using the above databases a student can cover more than 20 million records of research ranging in date from the mid-sixties to next week. Several of these databases are “linked” to the online journals we subscribe to, providing quick easy access to the full-text.

4. We also provide Internet access to the IAC Expanded Academic Index ASAP, the Encyclopedia of Life Science, and the Health and Wellness Resource Center, with many full-text articles.
5. Internet access to the World Wide Web is available to all students, faculty and staff from library terminals in the public area or from their offices or dorm rooms.

III. Collection Management and Parameters

- A. Languages
English is the predominant language. If materials in other languages are collected they must generally contain information not readily available in English.
- B. Geographic Areas
Much of the material in biology describes subjects, which are independent of geography. Descriptions of most of the world's geographic/ecological areas are included in the collection, with more depth being provided in descriptions of the South or Southeast or other areas where Clemson has programs or interest. Some degree of comprehensive coverage is attempted in local (North Carolina, South Carolina, Georgia) biology, especially in natural history.
- C. Chronological Boundaries
Most books considered for purchase are quite current; materials published prior to the most recent five years are purchased very selectively. The emphasis on recent materials does not extend to descriptions of biological and ecological regions, descriptions of species, and field guides.
- D. Format of Materials Collected
Monographic material purchased will primarily be English language print sources. Journals, handbooks, manuals, and encyclopedias will more frequently be in electronic format, allowing use of these materials from outside the library. Materials in languages other than English will be collected only upon specific request. Scholarly, technical and professional treatments are emphasized.

The following materials will be excluded unless there is an extraordinary need. These materials are made available in the learning resources center and personalized assistance lab available to biology students in Long Hall.

1. Workbooks
2. Computer software
3. Rare materials

E. Government Documents

R.M. Cooper Library serves as a depository for government documents distributed by the Government Printing Office. While we do not receive one hundred percent of all GPO documents, we do receive those from the National Institutes of Health, the Centers for Disease Control, and the United States Public Health Service.

We are also a depository for South Carolina state documents. We receive the Department of Health and Environmental Control publications as well as all other state agency reports. We have over one thousand items in the state documents area dealing with health, medicine, or DHEC publications.

F. Weeding Guidelines

Monographic material, with an imprint of 1980 or earlier, which has not circulated for the last ten years, is being reviewed for weeding. Statistical reports have been run and printouts are available for review of all these titles. If a book has not circulated and is historically important, Special Collections will be asked to house it.

IV. Selection Tools and Review Sources

- A. Major Life Science Journals
- B. Publishers Websites and Catalogs
- C. Society Websites and Catalogs
- D. Choice
- E. GOBI service from YBP
- F. Books-in-Print online
- G. The students and faculty are most helpful in suggesting resources to purchase. While working with undergraduates at the reference desk or through class contacts, one learns what topics are of interest. Also, by reading current journals and professional magazines in biology, the topics of current interest are apparent. Co-workers are also extremely helpful in suggesting areas that may need more coverage. Looking at the ILLs requested also helps in the selection process.

If faculty members fail to recommend material or to respond to reviews and notices of books in their subject fields, the librarian will encourage them to take a more active part in selection. If this encouragement fails, the library staff will make appropriate selections.

- H. The librarian is also responsible for the selection of general materials not specifically related to the curriculum and for maintaining a balance between the various subject areas and between standard and current works.

IV. Evaluation Tools

Use studies using Microsoft Access software and records from our online catalog show the areas of highest circulation in the Biological Sciences areas. This is very useful in deciding what areas need emphasis.

ISI's *Journal Citation Reports* purport to pinpoint the most influential journals in any science discipline through a tracking and counting of citations.

Interlibrary Loan -- if the students and faculty are frequently requesting journal articles or books that we do not have on-site, this is a clue that these materials may need to be ordered or electronic access gained. Undergraduates usually do not have the time to wait on interlibrary loan or document delivery.

By talking with faculty and students, one can determine if the material needed is available in a timely manner. This is one of the most helpful evaluation tools because this is direct feedback from the "customer".

VI. Assessment and Planning

According to the GOBI service provided through YBP, to purchase all books from scholarly, trade, and professional publishers in the LC ranges covering the life sciences published during the 2000-2001 fiscal year, it would have taken approximately \$145,717. And certainly Yankee is not reporting one hundred percent of all books published in these ranges. There was \$ 26,642 spent during the fiscal year 2000-2001 on all subjects in the life sciences.

This is not to imply that we needed to purchase all the books or that we would have, if funds were plentiful. The old books, especially in natural history, botany, and zoology continue to circulate and many of these are considered classics in the field.

A. Qualitative Measures. The information access policy for this department will be reviewed every five years.

1. Appropriate bibliographies will be checked against our holdings.
2. Benchmarking projects, to be determined.

B. Quantitative Measures

1. Interlibrary Loan Activities will be monitored to see what areas we are lacking and what type materials are being requested most and by whom.
2. Circulation Statistics will be reviewed to see which areas of the collection are most heavily used.
3. If Carl UnCover statistics were available, that would give information about which journals are needed more often.

C. Keeping track of the new research grants undertaken and the new courses taught in the biological sciences department can also help determine what materials to purchase and helps in the planning.

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LC Classes Covered: QH, QK, QL, QM, QP, and QR

Librarian: Lois Sill MS, MLS

Reference Librarian and Liaison for Agriculture and Life Sciences