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Food Science and Technology Collection Development Policy

Rebecca Bernthal

University of Nebraska at Lincoln, rberenthal1@unl.edu

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Food Science and Technology Collection Development Policy
University Libraries, University of Nebraska – Lincoln
Rebecca Bernthal, Liaison Librarian, December 2009
Approved: CDC, December 16, 2009

I. GENERAL ACADEMIC PROGRAM INFORMATION

The Department of Food Science and Technology is located in the Food Industry Complex on East Campus at UNL. The department started out as a part of many departments in the College of Agriculture, the most important being the Department of Dairy Science. Up until 1960, food processing was incorporated in the various College of Agriculture departments of dairy science, agronomy, animal science, poultry science, and agricultural engineering and in the Foods and Nutrition Department of the College of Home Economics. In 1960 the new Food Technology major was approved as an inter-departmental major involving all departments with food processing interests. In 1968 the Department of Food Science and Technology was started. Those members of the Department of Dairy Science who focused on manufacturing were automatically transferred to the new Department of Food Science and Technology to form the basis of the new department. The first undergraduates from the new department were in 1968. Master’s and Ph.D. students followed shortly. Today the Department is part of the College of Agricultural Sciences and Natural Resources (CASNR) and the Institute of Agriculture and Natural Resources (IANR).

B.S., M.S. and Ph.D. degrees are offered by the Department of Food Science and Technology. Students graduating with degrees in this program are prepared for either business or science careers. Presently the students are allowed to choose their area of strength by taking 11-12 hours of technical electives that come from designated areas and include additional science classes and/or business classes.

There are currently 54 undergraduates and 53 graduate students enrolled in the department. In 2008, eight BS degrees, four MS degrees and one PhD were conferred.

No specific accrediting agency exists for the department. However, the National Institute of Food Technologists has guidelines which must be met before it grants scholarships to students in the department.

There are currently 20 tenured or tenure-track faculty, one research assistant professor and two staff members with extension responsibilities in the Department. Research interests of the department include: Food safety, Food microbiology, Food mycology, Food toxicology, Food development, Food quality measurements, Food quality and safety, Food safety systems, Foodborne pathogens, Foodborne pathogenic bacteria, Sugar metabolism and regulation in foodborne bacteria, Mycotoxins, Food allergies, Immunochemical methods, Potential allergenicity of genetically modified crops, In vitro and in vivo activity of natural antioxidants, Natural bioactive agents, Nutraceuticals, Mucosal and gut immunology, Microbial ecology of gastrointestinal tracts, Physical properties of food, Cereal grains, End-use characteristics of grains, New uses for grains, Functional and structural relationships in starch, Corn processing technology, Tortilla and chip process chemistry, Process efficiencies of smaller-scale food process systems, Value-added process and engineering, Food and bioproducts engineering, Biopolymeric films, Molecular genetic analysis, Phylogenetics, Comparative genomics, Enzymology, Protein chemistry, Microarrays, Proteomic applications, Hyperspectral imaging and near-infrared spectroscopy systems.
Special Programs and Centers:

**Food Safety – University of Nebraska – Lincoln, Program of Excellence:**

**Description:**
This program provides high quality educational training to individuals preparing for careers in the food industry, academia, or government, as well as conducting basic and applied research in food science and technology for the ultimate benefit of the food industry and consumers.

**Collaborative units:**
Biological Systems Engineering, Food Science and Technology, CASNR, IANR and its Research and Cooperative Extension Divisions.

**Food Allergy Research and Resource Program**

This program was established in 1995 as a “cooperative venture between the University of Nebraska and seven founding industry charter members. Today, FARRP has more than 50 member companies, more than one dozen staff members and several graduate students.”

FARRP has two primary missions:

Mission #1: “Develop and provide the food industry with credible information, expert opinions, tools, and services relating to allergenic foods.”

Mission #2: “Develop and provide the agricultural biotechnology industry with credible information, expert opinions, tools, and services relating to novel foods and food ingredients including genetically modified products.”

**The Food Processing Center**

Started in 1983, and located within the department, the center offers” both technical and business development services to meet the needs of diverse clients and sectors of the food industry. As a partner with the food industry in Nebraska and beyond, the center provides a unique combination of science, engineering and business development services. The center works with small, medium and large firms, companies and entrepreneurs to assist them with increasing their market and economic vitality.”

**Food Technology for Companion Animals**

This relatively new and unique program combines food science with the nutritional and physiological demands of companion animals. It is the first academic program focused specifically on food technology for companion animals and is a cooperative program between the Department of Food Science and Technology and the Department of Animal Science. Industry support is strong and allows shadowing, mentoring, and intern opportunities both locally and nationally. Graduates are
in high demand to fulfill research, product development, process operations, quality assurance and the product safety needs of the industry.

**Undergraduate Coursework:**

**BS Degree Program:**

The curriculum includes a balance of courses in food science, biological sciences, physical sciences, mathematics, social sciences and humanities. Food science courses include food processing, food engineering, food analysis, food chemistry, food microbiology, nutrition, quality assurance, and commodity processing courses. The program is designed to allow student to develop an area of emphasis that fits their career goals by providing technical elective hours chosen by the student. Students are encouraged to participate in an internship program that provides summer employment in the food industry.

Food Science and Technology majors find career opportunities with food processing firms, government agencies and educational institutions. Types of positions available to food science and technology graduates include product development, quality assurance, food plant management, food research, food marketing and sales, education and extension.

**Graduate Coursework:**

**Graduate Program:**

The Department of Food Science and Technology offers graduate work leading to the masters of science and doctor of philosophy degrees with a major in food science.

Applicants to the graduate program must have a degree in food science, microbiology, biochemistry, engineering, nutrition, biology, chemistry, or other related field.

The Food Science and Technology program at UNL is one of the strongest and most rigorous in the United States and considered to be in the top 15% when ranked against similar programs. The faculty research programs in food allergens, food microbiology, food chemistry, food engineering, nutraceuticals, metabolomics, cereal technology, microbial genomics, and gut ecology are outstanding and internationally recognized. Professors and graduate students receive competitive grants, publish research in the top basic and applied journals, and regularly present results at major national and international conferences.

When they graduate, students obtain research positions at the USDA and FDA and in industry positions at such companies as ConAgra, General Mills, and other major food companies. Others who go the academic route have obtained postdoctoral or faculty positions at such places as Texas A & M, Harvard, the University of Washington, and North Carolina State University.

**Areas of Study:**

- Intestinal Microbiology and Health

Some departmental courses are cross-listed with other departments. Complementary programs overlap with Animal Science, Life Science, Human Nutrition and Health Sciences, and Agricultural Biochemistry. The department also cooperates with the University of Nebraska Medical Center and the Swanson Center for Nutrition, both of which are in Omaha.

Library Collections:

II. GEOGRAPHICAL COVERAGE
There are no geographical limitations, however, outside of North America, food science and technology research is strongest in the European and Scandinavian countries.

III. CHRONOLOGICAL COVERAGE
There are no chronological limitations, however current research is most important.

IV. IMPRINT DATE
Emphasis is on current materials. Little interest exists in older material.
V. FORMAT/TYPE AND LEVEL OF MATERIALS
Most materials acquired are monographs, journals, and serials, and reference works. Generally journals are preferred in electronic format over print, when available. Appropriate proceedings and symposia are also acquired, with special emphasis on those from professional organizations.

VI. LANGUAGES
English is the preferred language at all levels of intensity. However, at the research level German, French, Spanish, Russian or Scandinavian materials may be desirable, but are only acquired as requested by the faculty. English translations are always preferred to the original language whenever available.

VII. ELECTRONIC DATABASES
The University Libraries has acquired several electronic databases, formerly only available as print indexes, to support the study of food science and technology. The primary databases and electronic resources currently available are: Medline, Web of Science, Biological Abstracts, CAB Abstracts, Agricola, SciFinder Scholar, and full-text resources such as ASABE Technical Library, Knovel Library, JSTOR, etc. The core database in the field, FSTA, was cancelled in 2008 because of funding issues and the decision by the department to save journal titles instead of the database.

VII. SPECIAL FACTORS
Materials published by the Institute of Food Technologists and the National Institute for the Foodservice Industry are acquired. There are 3-4 important book series that are acquired and includes the long-standing Food Science and Technology series, formerly published by Marcel Dekker now by CRC Press/Taylor and Francis Group. Other significant publications include those from the Royal Society of Chemistry Symposium Series, Elsevier, Springer, ASM, etc.

The materials in the University Libraries’ collection that support the courses and research for the department are generally housed at the C.Y. Thompson Library (CYT) on the East Campus of the University. However, because of the department’s areas of study, the CYT collection is also dependent upon the collections of several other departments to support the full scope and range of the department. There is a close interface with the School of Biological Sciences, the Department of Animal Science and the Department of Nutrition and Health Sciences and the collection development statements for these areas provide support to the Department of Food Science and Technology. While many of the materials used by the department are located at the C.Y. Thompson Library, there is also a significant portion at Love Library and to a lesser extent at the Engineering Library.

The government documents collection at the C.Y. Thompson Library are generally important to all areas of agriculture. U.S.D.A. publications account for the majority of the document literature used by the Department of Food Science and Technology, however, there are, to a lesser degree, important publications coming out of the Interior Department, the Food and Drug Administration, and the Environmental Protection Agency. Particularly important are USDA monographic series such as the Agricultural Research Service (ARS) Miscellaneous Publications, the Agricultural Handbook, and the Technical Bulletin. These series include all aspects of agriculture, including those of interest to the Department of Food Science and
Technology and include subjects in the areas of extension/education, economics/regulation, and basic/applied science.

VIII. CLASSIFICATION AND INTENSITY LISTING
(The following are listed by LC Class, Subject, and then by Intensity Level)
HD 9000-9495; Food products; STUDY
QD 301-315; Aliphatic compounds ;BASIC
QD 320-327; Carbohydrates ;STUDY
QD 330-341; Aromatic compounds ;BASIC
QD 431-441; Proteins, peptides, amino acids, etc. Chemical aspects; STUDY
QP144 – 165 ; Nutrient interactions. Functional foods, etc. ;RESEARCH
QP 550-632 ; Proteins, amino acids, etc. Physiological aspects, toxins and antitoxins ;STUDY
QP 701-801; Carbohydrates, Lipids, Vitamins, miscellaneous organic substances; STUDY
QR 88-92; Metabolism ;STUDY
QR 115-129 ;Food microbiology; RESEARCH
QR 151; Micro-organisms of fermentation; STUDY
QR171 ;Microorganisms. Gastrointestinal system, Prebiotics, Probiotics, etc.; RESEARCH
QR188; Allergens; RESEARCH
QR201 ; Pathogenic Microorganisms. Foodborne diseases, E. coli, Listeria, etc.; RESEARCH
RA601-602; Food and Food Supply. Food Safety; RESEARCH
RA644-645 ; Chronic and Noninfectious diseases and public health. Allergies; RESEARCH
RA1242 ;Toxicology. Special poisons. Organic. Aspartame, Mycotoxins, etc.; RESEARCH
RA1258 – 1269 ;Food poisons ;RESEARCH
RA1270 ;Residues in food ;RESEARCH
RC143 ; Bacterial food poisoning ; RESEARCH
RC596 ;Food allergies; RESEARCH
RM214-258; Diet therapy. Clinical Nutrition; BASIC
TP 368-465 ;Food processing and manufacture ;RESEARCH
TP 480-684 ;Refrigeration, fermentation industries, oils, fats and waxes ;RESEARCH
TS 195-198 ;Packaging ;BASIC
TS 1950-1981; Animal products; RESEARCH
TS 2120-2159; Cereals and grain, Milling industry; RESEARCH
TX547-TX548; Infrared spectroscopy, Chromatography; STUDY
TX 599-612; Preservation and storage of foods; STUDY