Award recipients announced at the twenty-second annual Food Science Club Awards Banquet included a larger number of students than is usual. Lynn Twiford (Rocky Mt.) received the B. W. Newell Outstanding Senior Award. The Ambrosia Chocolate Award (engraved watch) went to Rabab Saadi for the highest average for seniors. Jennifer Faris (Chapel Hill) won the Forbes Leadership Award, and Reem Sialahed (Durham) was presented the Crouch Scholastic Achievement Award (highest average of sophomores and juniors). Awardees selected by the Club members included Mike Chessen, outstanding undergraduate Club member, and Don and Vivian Higgins, outstanding graduate student Club members.

The North Carolina dairy industry is promoting educational and career opportunities through the two-year Food Processing, Distribution and Service curriculum. R. A. "Bo" Bullard (BS, '50) has provided leadership in the establishment of a scholarship program to encourage employees and prospective employees of the dairy industry to obtain an education. Scholarships are provided by the local dairy which normally hires the student for summer or part-time work. More information about this Dairy Manufacturing Program is available from Dr. Lynn Turner.

In common with many Colleges of Agriculture and Departments of Food Science, our undergraduate enrollment has decreased in the past few years. Many factors contribute to this, a major one being that food science lacks a positive image among high school and college students who have not been informed of the career opportunities in this field. Food science is one of the best kept secrets on most university campuses. Last year enrollment in our department was 49 in the four-year program, 22 in the two-year Agricultural Institute program in Food Processing, Distribution and Service, and 55 in the M.S. and Ph.D. graduate programs.

As a result, recruitment of outstanding students for our undergraduate programs (B.S. and A.A. degrees) is receiving increased attention. Dr. Peggy Foegeding has recently been named Undergraduate Recruitment Coordinator. She will coordinate efforts designed to make potential students aware of career opportunities in food science. Her efforts will be directed at current university students who are undecided or seeking a change in majors and at high school students. High school science teachers will be contacted to make them more familiar with the field of food science.

Continued on next page
Dr. Allen Foegeding has been designated Graduate Recruitment Coordinator. He will coordinate efforts to encourage applications from top students in food science and the supporting discipline areas of chemistry/biochemistry, biology/microbiology, engineering, and nutrition. He will also be responsible for follow-through activities designed to entice the best applicants to enroll in our M.S. and Ph.D. graduate programs.

Alumni and friends of the department can help in these efforts by “spreading the word” to potential students about the field of food science and the attractive career opportunities it offers. Food science has been identified as one of the areas of agriculture with more job openings than graduates during the next decade. You can also assist by informing us of outstanding students, graduate and undergraduate, who might be interested in our programs. We will then contact them with additional information about the department.

Kathryn Roddy

Study Leaves

NCSU does not have a formal sabbatical leave program. However, faculty are encouraged to take study leave to provide for professional development and to improve skills and competencies by learning new techniques in their field, perhaps developing new areas, and gaining additional experience and training at another laboratory at the cutting edge of their field. Such study leaves enrich their programs and productivity in the department. Approximately each seven years, a faculty member is eligible for six-months study leave with full salary or one year at half salary. Such leaves require administrative approval.

This year, we have two faculty members from our department on study leave. Professor Hosni Hassan received a Fulbright Fellowship to work with Dr. Daniele Touati at the Institute Jacques Monod, University of Paris for the first six months of 1988. While there he is studying the regulation of superoxide dismutase in bacteria using genetics and molecular approaches. Dr. Touati is a leading scientist in the area of superoxide dismutase genetics. Dr. Hassan’s research interests are focused on understanding, at the biochemical and molecular levels, how oxygen toxicity is manifested in microorganisms.

Professor Tyre Lanier is spending a year at Nelson, New Zealand conducting and assisting in research relating to production of quality surimi and its further uses as a food ingredient, utilizing domestic fish species of New Zealand. Work is being coordinated through participants of the surimi task force, primarily constituted of the New Zealand Government Department of Scientific and Industrial Research (D.S.I.R.), Meat Research Institute of New Zealand, and the New Zealand Dairy Research Institute. For several years, Dr. Lanier’s research interests have focused on surimi processing and utilization. Recent emphasis has also included studies on factors controlling protein gelation in these products.

Alumni News

On June 6, 1988, a group (28) of Ralston Purina Research Management visited the department for a briefing on several of our research programs. Dr. Iue Cho (Ph.D. 1973 with H.E. Swaisgood), Research Project Director, Protein Research was a member of the group.

New Administrative Assistant

Kathryn Roddy is the new administrative assistant in the department. Previously, she worked for five years as administrative assistant to the head of the Physics Department, where her husband is a member of the faculty. She is a native of Raleigh, where her father was a faculty member of the College of Textiles.

Academic Affairs

(V. A. Jones)

Twenty-six students received degrees in Food Science at the May Commencement. The 14 BS recipients were: Mary Margaret Brake (Rocky Mount), Djuana Davis (Trinity), Jennifer Faris (Chapel Hill), Margaret B. Knight (High Point), Elizabeth Martin (Cary), Jennifer Maruri (Laurel, MD), Rana Mohammad (Amman, Jordan), Whitney Obrig (Delmar, NY), Elizabeth Rushin (Raleigh), Rabab Saadi (Raleigh), Joan Simms (Raleigh), Sarah Smith (Charlotte), Andrea Twiford (Rocky Mount), Francesca Vesce (Raleigh).

MS degrees were awarded to: Vivian Higgins (Raleigh), Ruth P. McQuire (Lancaster, SC), Jianting Wu (People’s Republic of China).

Nine students received AA degrees in Food Processing, Distribution and Service. They were: Allen Bell (Williamston), Elizabeth Blum (Raleigh), Johnny Hayes (Dunn), Rodney Lewis (Mt. Olive), Stephen Ek Teong Loo (Raleigh), Darrick Rodgers (Williamston), Darrell Smith (Selma), Elaine Wheeler (Cary), William Wilson (Williamston).
In addition Herb Schellhorn and Joan Schiavone, graduate students working with Dr. H. M. Hassan under Food Science Research Assistantships, were awarded Ph.D. degrees in Microbiology.

**Food Science Club**

Officers elected to lead the club for the next academic year include: President - Mike Chesson (Sr., Raleigh); Vice President - Linda Harris (Ph.D., Canada); Secretary - David Hall (So., Denton, NC); Treasurer - Ginger Goodman (So., Salisbury, NC); Activities Co-Chairpersons - Patricia Butcher (MS, Great Britain); Jeff Liebrecht (MS, Columbus, OH); Jennifer Maraui (Sr., Raleigh); Publicity - Julia Erickson (MS, Portland, OR).

The Club hosted the IFT Student Association Southeast Regional Meeting and Food Science College Bowl Competition in March. The event was organized by Wes Sing (PhD, Indianapolis, IN), SE representative to the Student Association. The NCSU team won the regional bowl.

The Club also sponsored a symposium at which 14 students made presentations of their research.

**Students Win IFT Scholarships and Fellowships**

Two undergraduates and four graduate students have been named recipients of IFT Scholarships or Fellowships for 1988-89. The IFT awards range from $500 to $10,000. Peter Muriana, a Ph.D. candidate working under the direction of Dr. T. R. Klaenhammer received the largest award, a $10,000 General Foods Fellowship.

Other fellowship winners were Gray Rushin and Patricia Butcher, both honored for the second time with IFT Fellowships, and Cathy Culver.

Undergraduates receiving IFT Scholarships were John Roberts, an entering freshman from Newton, and Reem Sidahmed, a junior from Durham. Sidahmed has a perfect 4.0 grade point average on two years of work at NCSU.

Muriana, a BS graduate in Biology at Fairfield University, completed a MS with Dr. Klaenhammer before embarking on his Ph.D. His thesis research involves genetic transfer systems in lactobacilli.

Rushin, a MS candidate working with Dr. G. L. Catignani, holds BS degrees in both Food Science and Chemistry from NCSU. Butcher is pursuing a MS degree with Dr. E. A. Foegeding. Her BS is in Food Science from NCSU.

Culver’s Ph.D. thesis research with Dr. H. E. Swaisgood involves the effect of structure on digestibility and bioavailability of proteins.

**Food Science Extension**

(D. R. Ward)

As the new Specialist-in-Charge, I am very honored to be part of NCSU’s Department of Food Science. The department has earned the reputation as being among the best in the country and, given my obser-
Students Gain Experience in Product Development

On April 20th, 1988, students in FSS203, Muscle Food Technology, and FSS91, Meat Science and Technology, presented semester projects in Room 114 Schaub Hall. Projects required students to develop a meat product using principles demonstrated throughout the semester. Students were required to formulate the products to meet government regulations; determine the critical control points during manufacture to insure both quality and safety; evaluate the product; and prepare a written report, in addition to preparing the product and poster presentation for display at the demonstration. A wide variety of processed meats were prepared, including a shrimp analog from washed mechanically deboned chicken (MDC), restructured venison steaks, chicken “cordon-bleu” manufactured from chicken breasts with isolated soy protein as a binder and from washed MDC, and a restructured precooked sweet and sour pork chop to name a few.

All faculty and students in the Department of Food Science and the undergraduate teaching coordinators and department heads from the Animal and Poultry Science Departments were invited to attend the demonstration and quiz the students on their projects.

Department Honors and Activities

Department promotions effective July 1, 1988 include: E. A. Foegeding, P. M. Foegeding, J. E. Rushing, S. J. Schwartz and M. A. Daeschel (U.S.D.A.) to Associate Professor; R. E. Carawan, G. L. Catignani, T. R. Klaenhammer and T. C. Lanier to Professor.

M. A. Daeschel will leave the department in July to join the Department of Food Science, Oregon State University as an Assistant Professor in the area of food microbiology. Mark has made many valuable contributions to our programs and to the USDA Food Fermentations Laboratory.

E. A. Foegeding gave an invitational presentation at the Amer. Oil Chemist’s annual meeting in May in Phoenix, Ariz. P. M. Foegeding was elected Sec-Treas. of IFT’s Microbiology Division; has a new post-doctoral research associate, Dr. Jungho Kim from U. of Mass. A. P. Hansen has a new project, “Studying the Effect of Different Types of Carrageenan on the Stability of UHT Yogurt”; selected with four other scientists from the U.S.A. to serve as experts on the oxidized flavor committee for the International Dairy Federation; taught a short course on aseptic processing and packaging of dairy products at Land-O-Lakes for UHT processors from Pakistan; has been invited to teach a workshop to the Taiwan dairy industry in July. D. R. Lineback was honored with the William F. Geddes Memorial Lectureship Award, Northwest Section, Amer. Assoc. of Cereal Chemists; was a tour speaker, Amer. Chem. Soc., Palmetto Circuit in March; was elected as one of three IFT representatives to CAST Board of Directors, elected to the Executive Committee IFT as council representative. T. R. Klaenhammer gave several lectures on starter cultures and genetic engineering in Australia and New Zealand in May; participated in a workshop on “Genetic Manipulation of Lactic Acid Bacteria” in France in April; has a new visiting professor in his laboratory, Dr. Tapani Alatsassava from Finland, who will be working on molecular biology of phages attacking dairy starter cultures. D. H. Pilkington has received a $5,000 grant from Ag. Foundation to study boneless country ham; judged country ham shows at the N.C. Meat Processors and Smithfield Ham and Yambon Festival. B. W. Sheldon (jointly with P. M. Foegeding) received $86,507 (7/1/88-6/30/90) funding to study “Efficacy and Verification of Bicidal Agents in Aseptic Packaging”; was invited speaker at N.C. Waste Reduction Pollution Prevention in March in Raleigh, at the Nat. Poultry Waste Mgt. Symposium in Colo. O.; and N.C. Poultry Meat Processors Workshop in Raleigh. H. E. Swaisgood gave three lectures in May at Univ. College Cork in Ireland; was an invited speaker at Symposium on Role of Milk Proteins in Human Nutrition in Kiel, Germany in June; chaired the Poster Session at the Geosci. Conference, Hannah Research Inst., Ayr, Scotland in May, and visited the Biotechnology Inst., Cambridge Univ., England in May. K. R. Swartzel was officially appointed Director of the Center for Aseptic Processing and Packaging Studies (CAPPS) in April; was funded by Research Institute for Food Engineering (jointly with Joe McGuire, Oreg. State Univ.) for $52,000 for a new project to study “The Influence of Solid Surface Energetics on Absorption from Fluid Foods”; was invited speaker to CALS spring faculty meeting, and at a conference for “Innovations in Aseptic Processing and Packaging” in Carmel, Calif., and the International Conference and Exhibition on Aseptic Packaging in Chicago; co-chaired a session at June IFT meeting on aseptic processing. W. M. Walter Jr. participated in the production of a informational video for USDA on french fry type of sweet potato.
NCSU Licenses Egg Process for Use in Food Industry

NCSU officials have signed an agreement with a major food company to allow commercial development of a process for pasteurizing and packaging fluid eggs. The new technology is expected to provide a safe, economical new way to process eggs for the food service and prepared-foods industries, which use fluid eggs for dishes from omelets to cupcakes.

Under the agreement, Morning Glory Eggs Inc. of Richfield (N.C.) has acquired license rights to NCSU patents for the ultra-pasteurization and aseptic packaging process developed by researchers in the Department of Food Science. The University will receive a share of the royalties to support further research and technology transfer programs.

Through its acquisition of Morning Glory, which financed the patenting of the technology, Michael Foods Inc. of Minneapolis now holds the exclusive license rights.

The new process was developed by Kenneth R. Swartzel, Hershel R. Ball, Jr., and Mohammad Samimi, a former graduate student in food science.

Nine Research Projects Funded by CAPPS


Four new projects were approved for funding at the Industry Advisory Board (IAB) meeting in February 1988. The new projects, which should get underway by July 1, are: “Measurement of Thermal Properties of Fluid Foods at Ultra-High Temperature Process Conditions;” “Rheological Properties of Starch Solutions under Low Acid, Aseptic Processing Conditions;” and “Efficacy and Verification of Biocidal Agents in Aseptic Packaging,” which includes work on two projects. When all of the projects are operational, eleven full-time faculty, one visiting scholar, four Graduate Research Assistants, four Postdoctoral fellows and two Technicians will be involved in center-sponsored research. The research will be carried out mainly in NCSU’s Departments of Food Science and Biological and Agricultural Engineering. However, some projects will be funded at VPI & SU, Michigan State University and other facilities as need arises.